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NEGOTIATION TECHNIQUES TO RESOLVE WESTERN WATER DISPUTES[1]

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ABSTRACT: There is a growing literature on the resolution of natural resources conflicts. Much of it is practical, focusing on guidelines for hands-on negotiation. This literature can be a guide in water conflicts. This is especially true for negotiations over new environmental values such as instream flow. The concepts of competitive, cooperative, and integrative styles of conflict resolution are applied to three cases of water resource bargaining. Lessons for the effective use of these ideas include: break a large number of parties into small working groups, approach value differences in small steps, be cautious in the presence of an attentive public, keep decisions at the local level, and understand the opponent's interests.
(KEY TERMS: negotiation; water rights; conflict resolution; instream flow.)

INTRODUCTION

Western water is one of the most fought over of all natural resources. But the rules of western water allocation are changing (Reisner and Bates, 1990; Wilkinson, 1990; Livingston and Ruttan, 1990). Even though the appropriation doctrine has evolved in western water law to accommodate changing social values, conflict remains a factor in policy-making and problem-solving. Water resource conflicts occur over federal reserved rights, endangered species, Clean Water Act permits, Federal Energy Regulatory Commission licenses, Indian water rights, wild and scenic river designation, water marketing, state water plans, instream flow programs, and the public trust doctrine.

Despite John Wesley Powell's call, in the 1860's, for water supply-based planning in the West (Stegner, 1982), little thought was given to water resources when lands were reserved for the use of Indians or other federal enclaves such as national forests, refuges, parks, and monuments. Indeed, much of the settlement and land use practice in the western United States was promoted using visions of "the Garden of the World," and the myth that "rain follows the plow" (Smith, 1950). This vision typifies what Caufield (1983) termed the progressive element of the conservation epoch. In hindsight, it is evident that the generally arid climate, the patterns of land settlement, and conservation ideology were bound to clash in social trends that might emerge, such as: Indian communities claiming water rights, growth in urban population, or an environmental movement. All three trends have come into play. The resulting conflicts mark water decision-making in the states west of the 100th meridian. McCool (1987) remarked that, "although Indians and non-Indians often disagree as to how to resolve their conflicting water claims, all parties agree that the problem is severe."

The strident nature of water conflicts arises largely from the view that water is seen as an "unlimited birthright" (Ingram and McCain, 1977). Controversy over the right to use water evokes basic ideological beliefs that result in bitter fights. Increasingly, parties to these water battles seek means to resolve conflicts that avoid the expense, delay, and uncertainty of lawsuits. As Burton (1987) concluded, "The key question for legal disputants is whether the principles they are fighting to protect and the goals they are trying to achieve can be safeguarded in consensus-based proceedings." Can negotiation be an effective means for resolving water disputes? Do classes of disputes require different negotiation strategies? Are there basic guidelines for negotiation that can help parties achieve satisfactory conclusions to water resource conflicts?

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THE WATER DISPUTE PROCESS

Western water disputes have many stages and the progress of any one dispute will depend on several factors, including the number and types of parties involved, the value differences of those parties, and the unique qualities of water itself. An example of the impact of large numbers of parties can be found when federal agencies are involved in the regulation of water use. The conflict may arise through the levels of bureaucracy, each level representing a new round of bargaining. Some disputed point may rise, be settled, and the discussion returned to the local level. This process may be repeated several times. The hard-fought decisions that result may be followed by a lawsuit – brought by someone who did not succeed in negotiation – again calling into question all the agreements the parties worked so hard to achieve. The ponderous nature of a large number of parties and their sharp value differences are enough to keep disputes in constant flux.

Smaller disputes, in which the actors are constrained to state or regional politics are no less complicated. It is not uncommon for local water negotiations, too, to be multi-party and divisive. The large number of parties common to water disputes means that there are many positions and points of view to be accommodated. Strong value differences mean that parties are reluctant to give away too much for fear of offering a fatal compromise, or of being accused by their constituencies of "selling out" their water rights. Add to this mix the technical considerations of hydrology, biology, and water management and the complexity can lead to hard-hitting, short-term strategies based on winner-take-all objectives.

Complexity is perhaps the most important variable. The interplay of ideology, science, personality, and multiple parties makes water disputes more difficult to resolve than the simpler two-party conflicts most often referred to in the negotiation literature (e.g., Cohen, 1980). In addition, water conflicts fit within an intricate web of natural resource issues that extends through time. Each agency involved has had some past history of dealing with other parties to the dispute and all will have future interactions. This adds to the problem of conducting negotiation in two important ways: it provides a historic backdrop for assessing others' behavior, while placing constraints on the range of acceptable solutions.

CONCEPTS OF NEGOTIATION

Given this level of complexity, it is not hard to imagine that many water resource decisions are perceived as low quality. Fisher and Ury (1981) have argued that decisions are often of poor quality precisely because the negotiation process itself is flawed. Positions are adamantly adhered to; compromise is grudging; minor players are cut out of the bargaining process. Relying on more productive negotiation strategies might help resolve this problem (Wondolleck, 1985). By not taking into account the rich mix of skills, knowledge, and perspective available from all the parties, bargainers miss a great opportunity to build good decisions.

The considerable literature on negotiation and conflict resolution can help negotiators. Case examples of successful negotiations have become available over the past decade (Bingham, 1986). Added to this knowledge are bodies of literature on individual and group decision-making, meetings management, and mediation processes. All of this information is useful to the water resources negotiator.

Most of the popular literature on negotiation presupposes a two-party process with a limited number of institutional levels of conflict (Nierenberg, 1973; Cohen, 1980). This assumption leads to the false conclusion that a simple strategy, once taken, can be carried through to the end of a dispute.

In surveying the dispute-resolution literature, Gifford (1985) synthesized three basic negotiation strategies: competitive, cooperative, and integrative (Figure 1). These three kinds of bargaining reflect different concepts of how conflict can or should be resolved; each has its proponents. Nierenberg (1973) prescribed a hard, competitive strategy characterized by martial tactics and grudging reluctance to compromise. White *et al.* (1980), urged a cooperative strategy of give and take, aimed at learning the weaknesses of the other side. Fisher and Ury (1981), Raiffa (1982), and Carpenter and Kennedy (1988) prescribe a principled negotiation strategy based on mutual respect and integrative problem-solving.

Lamb (1987) applied Gifford's typology to water rights conflicts over instream flow protection. It is certain that a water resource negotiator will see all these strategies within a career – and probably within a single negotiation.

The first step in using or responding to these strategies is to recognize them. One can often identify component tactics which can then be used to diagnose what strategy is being employed. For example, if an opponent opens with a concession, it is likely that he or she is utilizing the "cooperative strategy." If every concession by an opponent is both grudging and

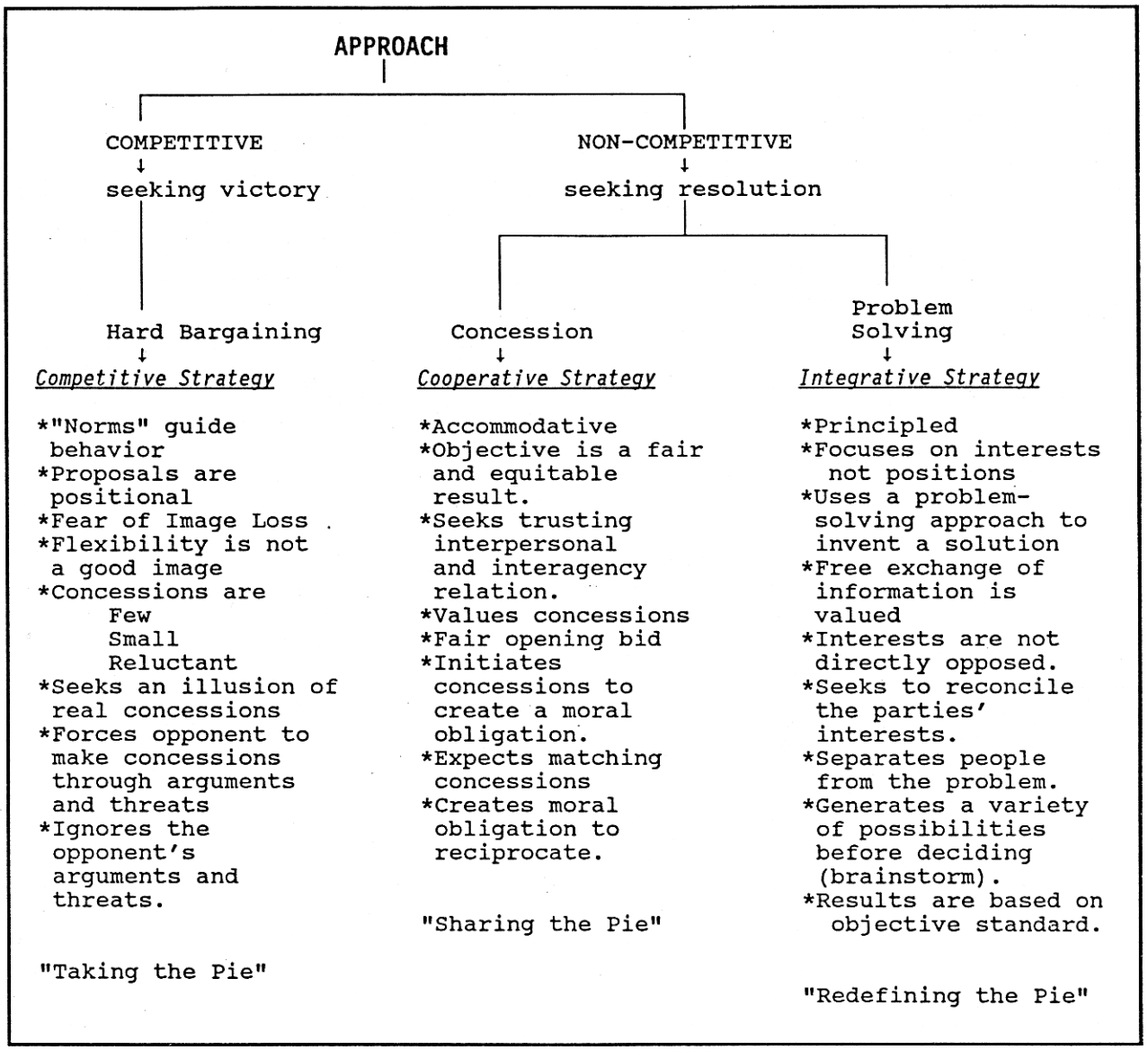

Figure 1. Typology of Negotiation Strategies (synthesized from Gifford, 1985).

small, a "competitive strategy" is indicated. The degree to which parties listen attentively to each other's arguments – as opposed to taking turns talking or interrupting – indicates that the operative strategy is more likely to be "integrative."

How can the use of these strategies be predicted before entering the fray? History is probably the best guide. It has been shown that agencies tend to pursue the same decision-making strategies over time (Lamb, 1975; Wilds, 1986). Gifford (1985) suggested four tests for predicting an opponent's strategy: (1) the opponent's early strategy in the present negotiation; (2) the opponent's strategy in past negotiations; (3) the strategy of similarly situated negotiators, and (4) the strategy you would use if you were in your opponent's position.

Perhaps the most confusing aspect of negotiation is how to move from one of these strategies to another. Negotiators often feel trapped in the strategy adopted by an opponent. It is common to hear professionals complain that after reading Fisher and Ury (1981) they enter negotiation with new hope, but these hopes are dashed when they encounter a stubborn, recalcitrant opponent who is going by one of the other books.

The initial question is, "How can the negotiation become principled and problem-solving, rather than positional and divisive?" The answer rests in several skills: maintaining a professional demeanor, recognizing the strategy that is being used by your opponents, and identifying the behaviors you do not like while rewarding the negotiation tactics that lead to a mutual problem-solving resolution. Gifford (1985) concluded that at least the opening rounds of most negotiations are conducted in a competitive mode. That is indeed the situation in the three cases briefly described here.

Water Rights Negotiation: Three Cases

James River. The voters of Springfield, Missouri, approved a $22.5 million bond issue in 1977 to build a water supply project. The Board of City Utilities submitted an application for a Section 404 permit, including an environmental assessment, to the Little Rock, Arkansas, District of the U.S. Army Corps of Engineers. In its 1978 application, the City proposed to install a raw water intake structure in the James River with a maximum withdrawal of 20 million gallons per day (mgd); build a 30 mgd water treatment plant; drill 10 deep wells connected directly to the new intake structure; and leave a minimum flow in the James River of 5.5 cubic feet per second (cfs) (1.0 mgd = 1.55 cfs). The case study for this discussion is summarized from Cavendish and Duncan (1986).

In February 1979, the Corps found the City's Environmental Assessment to be inadequate. This decision was based on the recommendations of the U.S. Fish and Wildlife Service and the Missouri Department of Conservation. During the period from February to September 1979, discussions ensued that concerned writing a Draft Environmental Impact Statement (EIS). These discussions were marked by sharp disagreements. The parties agreed that the Fish and Wildlife Service and Department of Conservation would conduct a study using the Instream Flow Incremental Methodology (IFIM) to look at fish habitat needs, and other studies to address recreational and downstream water delivery needs. However, there was little agreement on the results or recommendations of these studies.

On September 6, 1979, a public hearing was held to present the Draft EIS. Attending this hearing were representatives from the Springfield City Utilities, U.S. Fish and Wildlife Service, U.S. Geological Survey U.S. Army Corps of Engineers, the state Department of Conservation, and members of the general public. Presentations were made by the Fish and Wildlife Service regarding estimated instream flow needs and by City Utilities regarding raw water needs. Recommendations were given by both parties. Public sentiment was strongly supportive of protecting adequate instream flows.

During the rest of September, frequent negotiations were held as the major players tried to work out an agreement based on the Fish and Wildlife Service's IFIM results and the City's reservoir operations model. The negotiations were characterized by fairly open discussions of alternative solutions; the final result included flows during wet, normal, and dry years and rules for determining when those conditions exist. Furthermore, the negotiators worked out a stream gauging agreement, decided no new wells were to be drilled, and agreed to install a pipeline to a nearby reservoir to obtain additional water. The permit was issued on January 22, 1980.

The James River example started in a fairly strong, competitive mode. Parties were widely divided and initially presented primarily their respective agencies' positions rather than addressing the tangible issues in need of resolution. As studies were implemented to investigate specific issues, parties became more open to discussions of alternatives, seeking problem resolution rather than expounding positional stance. Creative solutions brought in components which were not initially considered part of the water system under discussion. Mutual concessions suggest a much more cooperative mode of negotiation as these discussions progressed.

Terror Lake. Terror Lake is in a National Wildlife Refuge on Kodiak Island, Alaska. Terror River pours from the lake, providing valuable spawning, incubation, and rearing habitat for salmon. The Kodiak Electric Association (KEA) proposed to raise the level of the lake and divert water through a tunnel and penstock to the Kuyziak River to generate electric power as a replacement for diesel generated power. The proposed project would reduce KEA's costs and all but eliminate their reliance on petroleum to generate electricity. The project would, however, adversely affect the habitat of the Kodiak brown bear within the Kodiak Island National Wildlife Refuge and substantially alter the flow regime of the Terror River. The Terror Lake project negotiation involved bargaining about bear habitat losses, instream flow needs for fish, land use practices on the island, and costs of the project (the case study was summarized by Olive and Lamb, 1984).

Like many water resource negotiations, those concerning Terror Lake have a long history. The KEA began planning the project in 1964. The dispute was formally resolved by the issuance of a license to produce hydroelectric power in 1981 by the Federal

Energy Regulatory Commission. But discussions were still continuing in late 1989 over compliance and the results of monitoring studies. The parties involved in this dispute include two offices of the U.S. Fish and Wildlife Service, two divisions of the Alaska Department of Fish and Game, the Kodiak Electric Association, Alaska Power Authority, Alaska Department of Natural Resources, Alaska Environmental Information and Data Center, Office of the Secretary in the U.S. Department of the Interior, staff of the Federal Energy Regulatory Commission, and citizen groups. With this many participants, it is not surprising that the negotiations were difficult, multifaceted, and prolonged.

The negotiations were marked by strident statements of position in the opening rounds, with all sides groping to find a way through a truly confusing regulatory process. Questions of who must be included in the licensing negotiations and who controlled the decision-making process dominated the early sessions. Beginning in 1980, bargaining turned from confrontation to the hard work of deciding what scientific studies had to be done to determine the impacts of proposed terrestrial and aquatic habitat alterations. Even in this stage, disputes among scientists, controversies over control, and uncertainties about the process led to many delays and harsh exchanges. This period was marked, too, by threats and counterthreats to elevate the decision to the highest levels in the federal government. Negotiations sometimes stopped while parties consulted their superiors or high-placed allies.

Technical studies were concluded by early 1981 when three environmental interest groups were granted permission to intervene in the regulatory process. In spite of the additional parties, the closing negotiations moved quickly to a settlement, the parties having sorted out many difficult issues focused on identifying and meeting a host of mutual needs. This was not an easy process. Particularly, scientific disputes – sometimes among scientists on the same side – caused difficulties. The license was issued in October 1981 (17 FERC 61,026).

This negotiation evolved from its initial, combative tenor to a negotiation style characterized by more creative problem solving. Having a powerful regulatory agency (FERC) ready to take the decision out of local hands served as a catalyst for the various parties to agree rather than having an "outside party" intervene. Participants recognized that their preferred end-results still differed, but the desire to retain local control of the decision process was a shared value.

Wind River Reservation Case. The Wind River Indian Reservation in Wyoming is occupied by both the Arapaho and Shoshone Tribes. The Reservation was established in 1868 as a permanent home for the Shoshone. Arapaho were forcibly relocated there later, creating a complex social and political situation for these traditional adversaries. An area of great scenic beauty, the Reservation also includes important farming country, but successful farming depends on water for irrigation. Under the Winters Doctrine (*Winters v. United States,* 207 US 564, 1908), Indian reservations are entitled to water to meet the purposes of the reservation. The water right has a priority date as of the date of the reservation. In this case, the Wind River Reservation's priority makes Indian use one of the most senior water rights in the area. What is unclear from the Winters Doctrine is how much water was actually reserved.

Discovering the answer to this question has absorbed the time, energy, and fiscal resources of the state, federal government, and tribe; along with almost 27,000 other parties in a general adjudication. A federal law, known as the McCarren Amendment – allowing the government to be sued in state court (Public Law 92-562, 42 U.S.C. Sec. 666, 1972) – requires a general adjudication of the water rights in an entire stream basin, in part to determine the quantity of such rights. To date, the State of Wyoming and the United States government have spent nearly $20 million to determine the Reservation water right as well as other water rights in the system. White (1987) has estimated that the cost of this court suit was $10.00 per acre foot awarded and Wyoming awarded 480,000 acre feet to the Indian tribe alone (Wyoming, 1988).

The state passed its general adjudication statute on January 24, 1977, and filed suit in February 1977. Negotiations between the state and tribe began almost immediately and continued during the trial. The bargaining was complex and competitive. Before trial, the parties could only agree on one issue: the boundaries of the reservation. Early conflicts were handled in a competitive climate of strictly limited concessions. After the first of four State District Court decisions (Wyoming, 1988), the negotiations were more flexible but never really escaped the realm of reluctant concessions and discordant argument. The case was decided by the Wyoming Supreme Court in 1988 (Wyoming, 1988) and the U.S. Supreme Court in 1989 decided only the part of the case dealing with using "practicably irrigable acres" as a standard for quantifying Indian reserved rights. Despite these decisions, negotiations continue. This water rights dispute has been characterized by competitive negotiation from start to finish.

Lessons From Water Rights Negotiation

How can negotiation success be recognized? Lee (1982) identified eight factors that define success in the resolution of an environmental dispute: legitimacy, agreed procedures, continuing relations among parties, implementation, acceptable outcome, successful process, willingness to negotiate again, and achievement of an expected outcome.

First, do the parties regard one another as legitimate bargaining agents? Are these the right people from the right agencies, sometimes referred to as "the real parties at interest?" Second, is the dispute bounded by administratively or legally defined procedures? Third, do the parties have a continuing relation so that they can make adjustments as the process moves along? Fourth, do participants take implementation seriously? By answering the questions, "What do we want to accomplish?" and "How will an agreement be implemented?" negotiators can promote success. Successful decisions require effective implementation. This entails making sure all sides are involved in implementing the decision by establishing who is to perform the necessary steps, who will oversee the steps taken, and how the parties will adjust to change. By this process, everyone should have ownership of the negotiation and its products.

Fifth, success is marked by mutually acceptable outcomes: Has everyone truly agreed? Sixth, Has the process worked? Success is measured by how people feel after the negotiation is over: Did it go well? Seventh, Are the parties willing to negotiate again on a different project? Finally, Did the negotiated solution actually accomplish what the parties believed it would? Knowing the answer to this last question depends on having taken the subject of implementation seriously in the beginning.

The three case studies described here illustrate that meeting Lee's criteria is not easy, even for well-intentioned negotiators. Often, the solution may not serve the public interest nor be environmentally sound, even when the criteria are met (Painter, 1988). These and a host of other ingredients may spoil plans for a successful negotiation. When negotiation becomes difficult, the brief case histories suggest five lessons for action: (1) subdivide a large number of parties, (2) take small steps in the face of ideological differences, (3) avoid public debate, (4) keep the decision close to home, and (5) know the other side's facts.

EFFECT OF A LARGE NUMBER OF PARTIES: BREAK IT DOWN

Three cases with progressively larger numbers of parties have been presented. As the number of parties increased, the complexity, intensity, and sharp contrasts in bargaining also increased. But the number of parties is not an absolute predictor of competitive negotiation. Indeed, Bingham (1986) reported that, in cases ranging from 2 to 40 parties, the number involved does not seem to adversely affect the outcome. Based on our review of the three cases, a large number of parties did seem to be one factor leading to use of a competitive negotiation strategy. The key to success with a large number of parties may be to keep some bargaining semi-private, focused on the interests of a few discrete parties; this is often possible in the context of litigation (White *et al.*, 1980). It is important to remember that these decisions will ultimately become public knowledge, leading to further bargaining.

An exception to the privacy rule might be mediated disputes where a third party is "managing" the conflict (Wondolleck, 1985). One of the points on which virtually all the conflict resolution literature agrees is that every legitimate party must be identified and included at an early stage (Cox *et al.*, 1985; Carpenter and Kennedy, 1988). Two techniques are available for managing a large number of parties – form task groups or have each party develop a proposal. The task-group process is one by which issues can be divided into identifiable groups. Carpenter and Kennedy (1988) suggested legal mechanisms and funding strategies as two tasks that might be assigned to task groups of participants. The idea is for these task groups to create solutions in a narrow area of concentration so that the whole group does not get bogged down in technical detail. Requesting that each party develop a proposal is a method also suggested by Carpenter and Kennedy (1988). The purpose is to increase the number of legitimate options and allow each participant to gain an improved understanding of the problem. Typically, the instruction to participants is to develop a proposal that meets their needs as well as the needs of others.

Public meetings are not good places to bargain. But a public meeting might be an effective way to demonstrate support under difficult circumstances. This happened in the Springfield, Missouri, negotiation where the parties only got down to business after a public meeting showed that no one had the upper hand. But bargaining in front of the public is often counterproductive because it makes compromise difficult.

Rather than confront opponents in public, it may be more effective to examine the statements, behavior, and interests of the parties to determine with whom alliances might be formed; then approach those parties to determine if there is common ground. This allows focusing on the interests of others and fosters the use of cooperative or integrative strategies to invent solutions. Care must be taken, in working through this process, to avoid the appearance of being underhanded or secretive. The idea is to create a climate in which all parties can contribute to the creation of innovative solutions.

EFFECT OF DISPARATE VALUES: NIBBLE AT THE EDGE

Widely different values characterize almost all water negotiations, especially those with a large number of parties. Wide value differences may be exemplified by the contrasting beliefs of environmentalists and developers, traditional versus modern cultures, or urban water supply and pastoral-agricultural lifestyles. Nierenberg (1973) suggested that the "salami approach" best describes the most common means of overcoming this characteristic of complicated transactions. This approach involves slicing off just a little of the decision at a time. Doing this has the benefit of not raising harsh challenges all at once and of allowing the parties to invest in a successful process one step at a time. Fisher and Ury (1981) suggested concentrating on the interests of other parties instead of on their positions, i.e., look behind what people are saying to focus on what they need. Further, Fisher and Ury advocated finding common ground – areas of shared or mutually acceptable interests – from which negotiation can progress.

The Terror Lake and Springfield negotiations provide evidence of both approaches. In the Terror Lake case, strong value differences were overcome slowly as the parties developed a vested interest in the negotiation. So long as some parties thought they could avoid negotiating – could just say "no" to the project – there was no bargaining. As the conflict progressed, it became clear that a local solution was in everyone's best interest. This knowledge became a common goal, keeping the dispute moving toward resolution. Near the end, issues still unresolved could be addressed, because so much had already been settled. In the Springfield case, once the parties decided to negotiate, they worked to invent a solution with each side contributing its special scientific expertise in identifying and analyzing alternatives. Even in such open and creative negotiations, parties may work hard to keep some sacred issues "off the table." The art of crafting a negotiation that avoids the non-negotiable is important in disputes marked by competing ideologies.

Wondolleck (1985) suggested that the negotiation process itself conditions the outcome. She reported that when the process emphasizes adversarial experts, the outcome is "mistrust and dissatisfaction." However, when the process is one of experts helping the affected parties develop and assess trade-offs, the outcome is mutual trust and satisfaction.

EFFECT OF AN ATTENTIVE PUBLIC: BE CAREFUL

Public debate is always hard to manage. Sometimes bringing the public into the bargaining can be an advantage; the Springfield case is an example. After the public had spoken, the negotiators got down to work, using scientific information to create a solution. An attentive public means more than just public attention, however; it refers to a special constituency watching over the debate. A good example is the lawyer's client, someone watching every move. The effects of having attentive coverage by the electronic and print media can be similar to, and interrelate with, an attentive public. An attentive public can either bring strength to problem solving or hinder it.

The Wind River case is an example of the latter kind of negotiation. The legislature of the State of Wyoming and the members of the two tribes provided each side with attentive publics. This fact – along with the lawyers' penchant for creating a "bloody record" – created a hard bargaining scenario. Huge cases such as this may be marked by insincere attempts to negotiate by all sides. Parties are more interested in appearances and using negotiations as a form of discovery for litigation. One solution to such a difficult condition is to identify a leader (either official or unofficial) within the attentive public with whom to deal. That person, in turn, can work with other members of that public (Lovrich *et al.*, 1986).

Another solution is to educate the attentive public about the negotiation so that strategies will be understood. It has been shown, in water resource disputes, that an informed public tends to hold less polar opinions about a project (Lovrich *et al.*, 1986). In contrast, there is evidence that when the public's knowledge level increases, persons with strong value differences remain far apart, particularly when the dispute is in someone's "backyard" and the decision process is not perceived to be legitimate (Hasan and Simmons, 1989). At the same time, most persons who hold moderate views may tend to develop similar attitudes about a project (Soden *et al.*, 1985). Negotiators must

be wary of falling into the trap of assuming that, "If the public were only educated sufficiently they would believe as I do" (Hasan and Simmons, 1989). The most effective opposition, in natural resource disputes, is often the most informed (Taylor, 1990).

EFFECT OF A POWERFUL INTERVENOR: KEEP THE DECISION AT HOME

The Terror Lake case illustrates what can happen when a powerful party, such as the Federal Energy Regulatory Commission, has an opportunity or duty to intervene. The result can be that the parties lose control of the outcome. Sometimes, as in the Wind River litigation, the specific intent is to have the issue decided in a court. Where possible, however, it may be important to keep the decision at home, under local control. Once a dispute has been released to a powerful third party, the decision may not reflect local needs; technical information is abstracted in an attempt to inform a far-away trier-of-fact, potential solutions are limited because of the difficulties of making clear and precise presentations to the decision-maker, and ideological arguments are more common.

EFFECT OF TECHNICAL INFORMATION: KNOW THE OTHER SIDE'S FACTS

The propensity for ideological argument should be avoided in favor of learning the facts. A successful resolution requires mastery of facts essential for a solution, both from your opponents' viewpoint as well as from your own. Further, it is important to recognize that the ways in which other parties perceive the issue at hand are part of the factual environment to be mastered. Raley and her colleagues (Raley *et al.*, 1988) have shown that failure to take water supply into account is one important reason for negotiated minimum stream flow regimes to be unmet in practice. Such facts as demand for water supply may not fit well with ideological preferences but are natural features that will bound the range of successful resolutions to a conflict.

Some negotiations – the Wind River case is an example – are marked by one side expending huge sums of money to discover or even create favorable facts. Indeed, one strategy in competitive negotiations is to become the arbiter of what is factual. In such a case it is imperative that all sides attempt to mount a research campaign that is as extensive as possible, carefully checking the analyses provided by others. Equally important is the need to openly explore technical areas that could adequately accommodate alternative or combined needs.

CONCLUSIONS

Painter (1988) demonstrated that even in widely divergent water disputes, each with a special set of facts and values, the procedures used and solutions reached share roughly similar characteristics. "These negotiations are distributive solutions being applied to problems that are *not* ones of quantity" (Painter, 1988). In short, a model of negotiation with the objective "to cut a deal" between two positions is being applied to problems that have many stages, a large number of parties, and strong value differences. Moreover, water disputes have ramifications requiring that parties negotiate over a long time span, continuing to work together to achieve useful results.

Every water resource negotiation has its own special characteristics. Every negotiation has its own requirement for process, fact-finding, and settlement. The first thing to be avoided is the temptation to apply a mechanistic process to dynamic, value-oriented problem solving. Using a simple model of negotiation misses many opportunities for improved outcomes. The two-party model leads to short-term, winner-take-all strategies where, instead, inventive solutions are needed. More fruitful negotiations are possible when one recognizes the rich complexity of water rights disputes expressed in competitive, cooperative, and integrative bargaining. Even though the competitive strategy is the most common starting place, the brief case histories presented here show that, under most circumstances, disputes can be much more productively resolved if approaches evolve toward cooperative or innovative strategies.

One key to productivity is recognizing the strategy that dominates bargaining. The history of a dispute, as well as the record of opponents' behavior, are both excellent guides for identifying strategy. Success is achieved when the parties move beyond mere mechanical attempts to use tactics and progress toward mutual problem-solving. The ability to do this is conditioned by the number of parties involved, the mixture and disparity of values held, attentiveness of various publics, the presence of a strong third party, and the participants' abilities to evaluate and use technical information. Understanding all these factors must be coupled with skill in identifying the real needs of the parties involved.

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