

CONFLICT ANALYSIS

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Attitudes toward conflict have shifted. Conflict, once considered a problem, is now seen as a potentially positive and creative force. Conflict should be managed, rather than eliminated. Effective management of conflict depends on an analysis that points the way to constructive outcomes—to win-win solutions.

The idea of a decision-analysis framework for examining and resolving conflicts is not new. Theoretical models with specific prescriptions have long been discussed in the literature (Raiffa 1982). Conflict analysis is a methodology to increase all parties' understanding of the conflict. It includes not only a mathematical formula but also behavioral advice on what to do and when. It is a methodology to support the process of conflict resolution by addressing the basic sources of conflict: lack of understanding, lack of information, and distorted communication. After these roadblocks are disposed of, conflict is broken down into its component issues, which can be traded off. If a negotiation over the components of the conflict succeeds, each party achieves a victory on the issues it deems important.

Application of Conflict Analysis

Conflict analysis may be applied in different situations:

- To assemble conflicting parties to find general areas of agreement and a solution that meets the concerns of all parties
- To help a neutral observer or mediator understand the issues and priorities of the parties to a conflict
- To help one party clarify its position and perhaps role-play the opposing positions; this helps clarify the opposition's values and perceptions, enabling one side to understand the opposition's viewpoint and to develop a negotiating strategy

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Analysis of conflict can be useful in several situations. First, conflict analysis is useful if several constituencies recognize that a conflict must be resolved and are willing to take the necessary steps. An example is when department heads meet to resolve their conflict about the budget. Second, analysis can also be used if one party wants a deeper understanding of the conflict. For example, a clinician negotiating an agreement with a health maintenance organization (HMO) might want to explore various contract provisions. If a constituency cannot or will not participate in the analysis, a group of "objective outsiders" should be asked to role-play it. While such refusal or inability to participate may reduce the chances that a chosen treaty will be implemented, having proxies is better than omitting pertinent viewpoints from the analysis. Note that it is helpful if the objective outsiders are highly regarded by the missing constituency.

Who should be invited to participate in the analysis depends on the purpose of the analysis. If a manager wants to explore how the other side might react to various proposals without committing to an action, the analysis must be performed with a group of objective outsiders. But if the purpose is to raise awareness about the problem or to reach an agreement on it, the analysis should involve as many actual parties to the conflict as possible.

A related point of discussion is the preference to meet alone with each constituency. Conflict analysis is a process to increase the understanding of each constituency's position, increase available choices in subsequent negotiations, and identify different ways of solving the conflict by finding areas of possible agreement with the opponents. Many of these goals can be better realized in private meetings of constituencies. Group meetings can follow but should not precede individual model-building sessions. When people in conflict meet before conflict is understood, they may stress their disputes instead of their agreements and escalate the conflict to personal issues. They may force each other into a corner, reducing the possibility of later compromise. It is better to wait and meet after various points of views are better understood and the possibility of miscommunications is reduced.

Assumptions Behind Conflict Analysis

The premises underlying conflict analysis are as follows:

1. *People have cognitive biases that become more acute under conflict or crisis.* When negotiations are complex (meaning that they are based on many issues), these cognitive limitations prevent full consideration of possible solutions.
2. *Preconceptions and false assumptions impair the ability to make the trade-offs that can lead to a solution.* Each party may erroneously assume that they know the priorities of the other. Asking for the priorities can reduce these misconceptions. When two parties negotiate, some conflict is caused by their differences but other conflicts are caused by miscommunications. Analysis reduces conflict caused by poor communication.
3. *A conflict is easier to grasp if the situation is broken into components (some of which may include little or no conflict).* Many parties that see each other in conflict are surprised to find out that they have large areas of agreement.
4. *Individuals can specify their values and prioritize them by using a structured process.* Using the procedures described in Chapter 2, preferences can be modeled even when people are in conflict.
5. *The decision maker can learn about every viewpoint by modeling each party separately.* When one party is not available, the analyst can interview observers who can role-play the values, preferences, and priorities of the absent parties.
6. *The analyst can reduce conflict caused by miscommunication, provide insight into the thinking of each party, and identify solutions overlooked by both parties.* A conflict analyzed is a conflict understood. The analyst can emphasize that there are wide areas of agreement so the conflict does not escalate. The analysis injects rationality into highly charged situations and helps each party gain new insights. The analyst can use models of parties to identify better solutions that are often overlooked by both parties.

When thinking about managing conflict, the analyst must always consider that conflict might lead to a higher level of tension where the potential for losses is increased. This is the escalation of conflict, a debilitating syndrome with many deleterious effects. The sources of escalation are a lack of understanding among the parties, a lack of information about the opponent's position, and an emphasis on bargaining so that one party

wins and the other loses. Conflict analysis counteracts these problems by increasing communication, emphasizing a problem-solving attitude, offering a joint definition of the problem, reducing the influence of ideology, and pointing the parties toward win-win solutions.

Conflicts can become so heated and the constituencies so stubborn that rational approaches cannot manage them. Often, however, all sides realize that a decision must be made and that a better understanding of one another's position is essential. In that case, it becomes helpful for the parties to know the goals, attitudes, values, motivations, and levels of aspiration of the parties; the nature of the vital issues in the conflict and the options available to resolve them; and the consequences of taking each possible action. Unfortunately, research suggests that people are sometimes inconsistent in their judgment, often unaware of their own values, and certainly unable to explain their opponents' positions accurately (Kenny and DePaulo 1993; de Dreu and van Knippenberg 2005; Hammond, Keeney, and Raiffa 1998).

The Methodology

Analysis of conflict consists of the three major phases (as shown in Table 11.1), which can be broken down into ten steps. The first phase helps the analyst understand the underlying issues and gain a perspective on the background of the conflict. In the second phase, the analyst explores the problem by refining and decomposing the preliminary goals into specific components, which are called "issues." In the third phase, the analyst explores solutions to the entire conflict by analyzing treaties. The third phase of analysis begins by asking the constituencies to weight the relative importance of the various issues and to state preferences for possible levels of resolution. The analyst then packages one level of resolution for each issue into a treaty and scores it to see how well it meets each constituency's needs. In the next step, the analyst searches for the optimum treaty for all parties (or for a specific party if that is the purpose). Then, the analyst convenes all parties to search for a consensus resolution.

An Example

The application of conflict analysis will be illustrated by way of an example. Healthcare managers face conflict in many situations. Making budget allocations involves resolving conflicts among the manager's team (Bruckmeier

TABLE 11.1
Summary of the Conflict Analysis Methodology

<i>Phase</i>	<i>Step</i>	<i>Action</i>	<i>Purpose</i>
Understand the problem	1	Identify constituencies and their spokespeople	To define the coalitions and identify individuals who will later develop the conflict model and choose treaties
	2	Analyze assumptions	To obtain a general understanding of the problem and to identify ideological and technical sources of conflict
Structure the problem	3	Perform an in-depth interview with one or more objective outsiders	To refine the goals identified in step 1, check understanding of the issues and different set of values involved, and begin exploring grounds for resolution
	4	In separate sessions with each constituency, identify issues and levels of resolution	To develop the conflict model and identify key levels of resolution that lead to an overall compromise
	5	Assess the importance of issues and the value of resolution levels	To quantify the importance and preference of the component issues and the levels of resolution
Explore the solution	6	Form and score treaties	To generate a set of feasible solutions and explore Pareto-optimal solutions
	7	Analyze the treaties	To generate treaties that are likely to resolve the conflict
	8	Develop a strategy of negotiation	To increase the likelihood of a positive outcome
	9	Present results to all constituents	To generate an acceptable treaty and develop guidelines to implement the treaty or agree on further actions in the resolution process

2005). Often, interdisciplinary providers have role conflicts, and managers are called upon to resolve these tensions (Shannon 1997). Managers face conflicts in merger negotiations (Dooley and Zimmerman 2003), settlement of lawsuits disputes (Dauer 2002), labor-management negotiations (Alemi, Fos, and Lacorte 1990), and many other similar situations. The example used in this chapter is a discussion of how managers can improve community relationship by understanding the conflict in the community about their services. In particular, the focus is on a community's conflict about the requirement of parental consent before family-planning services are provided to adolescents. A hospital administrator who is developing a family-planning service must structure the service to reflect the views of many constituents as well as a growing market demand.

Phase 1: Understand the Problem

Step 1: Identify Constituencies and Spokespeople

Constituencies—people or groups that stand to gain or lose as a result of a conflict—can be identified in several ways, such as by examining lists provided by lobbying organizations, by reviewing testimony on past legislation, by inviting local chapters of national organizations to a discussion, and by interviewing key individuals by telephone. Commonly, many groups with various persuasions must be taken into account. However, the value systems of these differing groups as they relate to family planning may be similar enough to be characterized by just two or three models. Such a simplification is a significant help in devising a useful solution. In the example, parents, clergy, physicians, health educators, social workers, and women's rights advocates might be grouped in ways they are comfortable. The analyst can decide whether groups can be lumped into one constituency by asking several prominent organizations to assign priorities to a set of goals about the conflict. This empirical approach works well if all relevant groups are surveyed.

A common mistake is to canvass only those groups that have lined up against each other. Although the first glance might suggest that only two groups are in opposition, further analysis may identify other important players. Using the example, at first it appears that just two constituencies are involved in the conflict: the "antiabortion forces" and the "family-planning advocates." However, further examination might unearth a third group, which may be called the "concerned parents"—people who believe their teenage children are mature enough to make correct decisions if given balanced, unbiased information. These concerned parents care mostly about their children's well-being, and if they have an ideology on abortion, they do not want it to influence their children's actions.

Once the preliminary analysis is finished, the analyst must identify a spokesperson to represent each constituency participating in the conflict analysis. The analyst needs at least three types of spokespeople: the proponents and opponents of the conflict and objective outsiders. The third group is valued for having a perspective that differs from that of the constituencies. In contrast, if policymakers do not want to negotiate with a constituency but merely wish to increase their understanding of the conflict, the analysis can be performed using only objective outsiders instead of a spokesperson.

Spokespeople should be good at identifying issues and solutions and should be comfortable with the task of quantifying preferences. While later in the process the analyst may want to include individuals with the institutional power to implement a compromise, during the analysis phase the analyst needs people who are willing to break the problem into its components and who are sensitive, insightful, and articulate.

A nomination process to identify spokespeople begins by identifying five or six nominators—people who know the leaders and insightful people in the field and can identify individuals who might adequately represent a constituency. It is good practice to select only nominees who are suggested by several nominators because this indicates the person is widely respected. While in general having many people consider somebody to be an expert will signify that person's credibility, even the most widely respected will have opponents and the most knowledgeable will have cynics.

When talking with the nominees, the analyst can motivate them to participate by mentioning the following:

- Who nominated them (make sure to get permission to use the nominator's name)
- What the project is about
- Why their participation is important
- What will and will not be done with the results
- How their names will be used
- What tasks will be expected of them
- How long each task will take, and when it will occur
- What payment (if any) they will receive

In general, three spokespeople (one from each constituency) are sufficient, although there may be good reasons, such as attrition, to identify more nominees. During a long process, some spokespeople may drop out because of other commitments or loss of interest. The analyst must beware of running out of spokespeople before concluding the analysis. A second reason for having more than one representative is that in a complex analysis,

especially one involving a series of technical and ethical issues, a single spokesperson may be unable to convey the full spectrum of a constituency's position.

Step 2: Analyze Assumptions

After the preliminary analysis is finished and the spokespeople have agreed to participate, the analyst must do some homework. This is because conflict about the definition or solution of a problem often arises from sharp disagreement over a fundamental factor that is not obvious to even the stakeholders themselves. Some conflict is caused by unconscious assumptions. The analyst must bring these assumptions to the surface for examination.

To elicit the assumptions, the analyst must gain as much information as possible about each constituency's views. Leaflets, brochures, advertisements, position papers, legislative hearings, and data used by a constituency to buttress its position are all valuable clues. Interviews may also be useful, but more often than not assumptions are so ingrained that people accept them unconsciously and have difficulty articulating them. People are commonly surprised by their assumptions once they are made explicit.

Throughout this process, analysts should look for recurring catchwords or slogans in a constituency's statements. Slogans are chosen for their emotional content; they contain a wealth of information about the constituency's values. In the example of parental notification about family planning services for adolescents, constituency 1 said, "I want my children to have the courage to say no." Constituency 2 said, "Let's stop children from having children." Although such statements simplify the conflict, they certainly give the flavor of the competing positions. This tone allows the analyst to devise whether the debate is emotional or technical, and whether it concerns ethics or money. Again, remember that at this stage the analyst is trying to understand where the different constituencies are coming from and summarize their positions.

Table 11.2 shows some assumptions behind the world views of constituencies 1 and 2. A close reading shows that assumptions can be classified as contradictory and noncontradictory. Constituency 1's assumption that access to contraceptives lures teenagers into sex directly contradicts constituency 2's assumption that access to contraceptives does not increase sexual activities. Clearly, the two assumptions cannot both be true at the same time. A noncontradictory pair of assumptions is also shown. While constituency 1 assumes that administration and red tape will soak up as much as 90 percent of the funds, constituency 2 assumes that the cost-benefit ratio of family-planning programs is excellent. These assumptions seem to be in opposition to each other, but both can be true at once.

TABLE 11.2
Catchphrases and Assumptions of Two Constituencies

	<i>Constituency 1</i>	<i>Constituency 2</i>
<i>Catchphrases</i>	<p>Government has too much control.</p> <p>I want my children to have the courage to say no.</p> <p>Administration and red tape will eat up as much as 90 percent of the funds.</p> <p>Contraception is dangerous, and people are misinformed about its effects.</p> <p>Parents do a better job of providing sexual education.</p> <p>Morality is the best contraceptive.</p> <p>Access to contraceptives lures teenagers into sexual activities.</p> <p>The decision to have sex is a good opportunity for establishing communication between parents and children.</p>	<p>Let's stop children from having children.</p> <p>Contraception is better than unwanted pregnancies.</p> <p>The cost-benefit ratio in family-planning programs is excellent.</p> <p>Lack of pregnancy allows minors to take advantage of other possibilities (education, employment, etc.).</p> <p>Parents do not provide adequate sexual education.</p> <p>Counselors in family-planning agencies provide the most persuasive influence against premarital sex.</p> <p>Access to contraceptives does not increase sexual activities.</p> <p>Confidentiality is crucial in obtaining family-planning services.</p>
<i>Assumptions</i>		

It is crucial that the constituencies perceive the analyst to be a fair individual who is sensitive to their values. To accomplish this, the analyst should use the same terminology as the constituency and restrain from evaluating the validity of ascertains. The analyst can ask clarifying questions but not make any judgment regarding the response.

Phase 2: Structure the Problem

After the analyst has identified the constituencies and their general goals and assumptions, and the spokespeople have agreed to participate, it is time to model the conflict. In this phase, the analyst breaks down the conflict into its components and then quantifies each one. These components are the goals of each constituency, the issues that form the heart of the conflict and that must be addressed to resolve it, and the possible levels of resolution for each issue.

Step 3: Conduct In-Depth Interviews

During this phase, the analyst will have two sets of meetings, one with objective outsiders and one with the spokespeople for each constituency. Performing in-depth interviews with a few objective outsiders is an excellent way of preparing and rehearsing before the actual sessions with the spokespeople. Objective outsiders need not be experts in the subject matter—they can be trusted associates who are acquainted with the problem and not intimately involved with its solution. These people are chosen for their analytical skills, candor, and knowledge of the issues. The sessions with the objective outsiders give the analyst a preliminary conflict model that serves as a starting point for the constituency sessions.

During both the proxy interviews and the spokespeople group sessions, the analyst should do the following:

1. *Discuss the problem in general terms and note examples of goals, issues, and levels of resolution.* The analyst asks questions to help define the problem and ensure that its key elements are understood.
2. *Ask for descriptions of the parties.* Who are the proponents? Who are the opponents? How do they view the conflict? What would each side like to see in terms of a resolution? Why?
3. *Ask for an exhaustive list of the issues that are dividing the sides to make sure they are as independent of each other as possible (i.e., there is no overlap).* What is the underlying conflict? On which issues do the opponents agree or disagree? Which issues must be resolved for the sides to reach agreement?

4. *Ask for a list of all levels of resolution for each issue.* What is this side's position on the issue? What solutions might it accept? What solutions are totally unacceptable? Why are the levels considered in this way? Some levels will be preferred by one side, and other levels by the other side. Some levels will be compromises that are not preferred by any side but may be acceptable to all. The analyst tries to identify as many levels of resolution as possible on each issue, even though only a few may be considered in the final analysis. The reason for seeking so many levels is to promote the development of creative levels of resolution.

A private meeting of each constituency is held to obviate the risky and possibly dysfunctional step of assembling the opponents before the analyst knows the depth and nature of the conflict. Later, after the conflict-analysis model has been formed and some trade-off resolutions have been mapped out, the constituencies may be assembled to search for solutions, or treaties.

Step 4: Identify Issues and Levels of Resolution

Issues are the basic building blocks of conflict; they are fundamental factors that must be understood and addressed to reach resolution. Once the issues are identified, the analyst can classify them on a continuum from agreement to disagreement. This allows the concentration to be on finding acceptable compromises or trade-offs on intensely disputed issues. The classification may reveal, for example, that the constituencies agree on several issues, that they are mildly opposed on others, and that the conflict really concerns just a couple of issues. This makes the conflict appear more manageable and focused and thus simplifies its resolution.

If disputed issues are not ripe for resolution because their political time has not arrived, or if they are too thorny to be resolved, the analyst can try to develop a partial solution by concentrating on more tractable issues. Either way, separating the conflict into component issues allows the analyst to localize the problem to specific areas and to use resources to solve problems more effectively.

Finally, the levels of resolution—the specific actions, laws, and services that can resolve an issue—must be identified. Typically, constituencies identify levels of resolution that range from optimal to unacceptable. This step tells the analyst what each constituency is considering or fearing in terms of suitable and unsuitable solutions, and it serves as a foundation for generating new solutions.

Let's return to the example of the issue of parental notification. Suppose that after performing these interviews with two objective outsiders

and meeting with the spokespeople, the list of goals include reducing unwanted pregnancies, teaching children to be responsible, preserving the family, and reducing the number of abortions.

Furthermore, suppose the interviews reveal that the conflict can be distilled into two issues: (1) which components of family planning should be available to minors and (2) under what conditions. Suppose also that both constituencies agree that any family-planning program must have at least three components:

1. Education should include such topics as values, morals, biological processes, birth control, decision making, goal setting, sex roles, pregnancy, and parenting skills.
2. Counseling should focus on some of the same issues as education but should also involve more interaction between the provider and client. The focuses of counseling might include crises, pregnancy, abortion, elective non-parenthood, and preparation for childbirth.
3. Services might include birth control, adoption, abortions, prenatal care, sexually transmitted disease testing and treatment, and financial assistance.

With this information, the analyst is now in a position to explore the issues at the heart of the conflict. In this example, the crucial issues are as follows:

- Should values and morals be taught when delivering family-planning services?
- Should counseling of adolescents start from the position that premarital sex among adolescents is bad?
- Which is more important, allowing easy access to services or having services controlled by organizations that have what are considered high morals?
- What are the optimum technical qualifications of the family-planning personnel?
- Who, if anybody, should regulate the provision of family-planning services to adolescents?

Once the issues have been identified, the objective outsiders and spokespeople are asked, separately, to define a set of feasible resolutions to each issue. A set of issues and their possible levels of resolution are listed in Table 11.3.

Once the issues and levels of resolution have been formulated by the full group of spokespeople, they must be checked, detailed, and rephrased in separate sessions with spokespeople from each constituency. It is critical

<i>Issues</i>	<i>Levels of Resolution</i>
A To what extent should family-planning programs try to convince clients that adolescent sex is bad?	A1 Should not do so A2 Should be available to clients A3 Should be required of all clients A4 Should be a fundamental part of every service of a family-planning program
B To what extent should family-planning programming be oriented toward strengthening the family?	B1 Not at all B2 Depends on the client B3 Always, with all clients
C What limitations to access to family-planning programs should exist for adolescents?	C1 No parental notification C2 Parental notification before counseling or services C3 Parental permission before counseling or services
D What type of supervision should be required for people who provide family-planning services to adolescents?	D1 Social work supervision D2 Physician supervision D3 Theologian supervision D4 Experience as parent of adolescent
E What organization (with what moral qualifications) should be allowed to deliver family-planning services?	E1 Nonprofit E2 Educational E3 Governmental E4 Healthcare (doctor's office or hospital) E5 Religious
F Who should regulate the provision of family-planning services for adolescents?	F1 Peer review F2 Local government F3 State government F4 Federal government F5 Community

TABLE 11.3
Issues and
Levels of
Resolution

to obtain a consensus on the phrasing and substance of all issues and levels of resolution from all parties before proceeding. Note that at this time the goal is to have all of the constituencies agree on the components of the conflict, not on a solution to it. In many conflicts, merely listing the issues and the possible levels of resolution reduces the conflict.

Step 5: Elicit Weights and Preferences

In this step, the analyst helps each constituency estimate the importance of various issues and the values assigned to different resolutions of those issues. Methods to elicit weights and preferences are found in the Chapter 2 (see also Ryan et al. 2001). Two sets of parameters need to be estimated. First, the analyst must identify the values of the different resolutions to each constituency. This is done by listing the various levels from least to most preferred and then assigning the most preferred option the value of 100 and the least preferred option the value of 0. All resolutions in between the best and worst levels are assigned proportional values. Alternatively, if more precision is needed, the double-anchored estimation method can be used, in which the most preferred level is assigned 100, the least preferred level is assigned 0, and the spokesperson is asked to rate the remaining levels.

The relative priorities between the issues are assigned using the method of ratio estimates. The spokesperson is asked to list the issues in order of importance; the least important issue is assigned a value of 10. The spokesperson is then asked to rate how much more important the next issue is (e.g., ten times as important). The process is continued until all issues are judged relative to one issue of lesser importance. The ratio judgments are then used to assign a score to each issue. The scores are divided by the total of all the scores to produce the weight for each issue. This manner of developing issue weights ensure that the weights for issues are constrained to add to one; thus, if the spokesperson weights one issue heavily, he is forced to weight other issues as less important.

When multiple spokespeople are involved for one constituency, and if they differ in their estimates or weights for issues or values of different resolution levels, then they are asked to discuss their differences and come to a consensus. If their differences are small, responses from different spokespeople for the same constituency are averaged. Note that during the discussion among the spokespeople, the analyst might find certain factions of a constituency to be more amenable to compromise; this is signaled by the faction that has priorities similar to the opposing parties. In the extreme cases, the analyst might find that the spokespeople on one side actually represent several positions, not just one. If so, the analyst may need to develop a distinct model for each position.

Table 11.4 shows the resulting weights and value scores for the different constituencies in the example.

Once levels of resolution for all issues have been identified and the weights and preferences assessed, it is useful to do an initial review. For instance, preserving the family is important to constituency 1 and of

TABLE 11.4
Weight and Value Scores of Two Constituencies in the Family-Planning Example

Issues	Levels of Resolutions	Issue Weight		Resolution Value	
		Constituency 1	Constituency 2	Constituency 1	Constituency 2
A To what extent should family-planning programs try to convince clients that adolescent sex is bad?	A1 Should not do so	0.14	0.07	0	100
	A2 Should be available to clients			30	90
	A3 Should be required of all clients			80	20
	A4 Should be a fundamental part of every service			100	0
B To what extent should family-planning programming be oriented toward strengthening the family?	B1 Not at all	0.20	0.04	0	100
	B2 Programs available			30	90
	B3 Programs required			90	20
	B4 Built into all components			100	0
C What limitations to family-planning programs should exist for adolescents?	C1 No parental notification	0.25	0.48	0	100
	C2 Parental notification before counseling or services			80	10
	C3 Parental permission before counseling or services			100	0

TABLE 11.4
(continued)

Issues	Levels of Resolutions	Issue Weight		Resolution Value	
		Constituency 1	Constituency 2	Constituency 1	Constituency 2
D What type of supervision should be required for people who provide family-planning services to adolescents?	D1 Social work supervision	0.11	0.14	0	100
	D2 Physician supervision			60	50
	D3 Theologist supervision			100	30
	D4 Experience as parent of adolescent			50	0
E What organization (with what moral qualifications) should be allowed to deliver family-planning services?	E1 Nonprofit	0.23	0.16	0	100
	E2 Educational			60	30
	E3 Governmental			30	15
	E4 Healthcare (doctor's office or hospital)			80	10
	E5 Religious			100	0
F Who should regulate the provision of family-planning services for adolescents?	F1 Peer review	0.07	0.11	0	100
	F2 Local government			90	20
	F3 State government			40	30
	F4 Federal government			10	40
	F5 Community			100	0

relatively little importance to constituency 2. This suggests that resolutions that enhance the family might be included in the model as long as they do not impair other goals. For example, family-planning organizations could teach parenting skills to parents of adolescents or could develop educational and counseling programs to teach adolescents to get along with their families.

Phase 3: Explore Solutions

Step 6: Form and Score Treaties

A *treaty* is a set of resolutions for each issue in the conflict: one level of resolution per issue. Each resolution has a particular value to the constituency, and each issue has been given a priority by each constituency. The goal is to find a treaty—a combination of resolutions—that has a high value score for all constituencies.

Calculate the value of a treaty by multiplying the value of one level of resolution by its issue importance weight, continuing in this way for all issues, and then summing the results. In the example, suppose family-planning legislation passed with the following levels of resolution (as shown in Table 11.4):

- A2: Programs stress the negative aspects of adolescent sex.
- B2: Programs to strengthen the family would be required in any adolescent family-planning service.
- C2: Parents must be notified when an adolescent uses a family-planning program.
- D2: All providers of family-planning services must have medical qualifications.
- E2: Educational institutions will carry out family-planning programs.
- F3: State governments must regulate family-planning programs.

The value of this treaty is calculated by multiplying the relative importance weight of an issue by the value assigned to the level of resolution, then adding across all issues. That is, the score of treaty k for constituency c is equal to

$$k_c = \sum_{i=1, \dots, n} W_{ci} \times V_{cij},$$

where

- k_c is the score for treaty k (a set of levels of resolution for all n issues) evaluated for constituency c ;
- W_{ci} is the importance weight of issue i for constituency c ;

- V_{cij} is the value of level of resolution j to issue i for constituency c ;
- n is the number of issues underlying the conflict;
- i is the issue number; and
- j is the resolution level within the issue.

For constituency 1, the value of the treaty described above is

$$(.14 \times 30) + (.20 \times 30) + (.25 \times 80) + (.11 \times 60) + (.23 \times 60) + (.07 \times 40) = 53.4.$$

For constituency 2, the value of the treaty is

$$(.07 \times 90) + (.04 \times 90) + (.48 \times 10) + (.14 \times 50) + (.16 \times 30) + (.11 \times 30) = 29.8.$$

How good is this treaty? Can both constituencies improve their positions? These questions are addressed in the next section.

The point of analyzing treaties is to identify those treaties that are acceptable to all parties. A large number of treaties are typically available—in this example on parental notification, 4,800 treaties could be formed. In general, the number of possible treaties n is equal to:

$$n = \prod_{i=1, \dots, n} x_i,$$

where x_i is the number of levels of resolution attached to issue i , and n is the number of issues.

One way to reduce the number of possible treaties is to look at only two values: the best and worst resolutions for each issue. In these circumstances, the number of possible treaties becomes two to the power of the number of issues involved. With the model on family-planning services, the possible number of treaties with the best and worst levels is 2^6 , or 64 possible treaties. This reduces the number of possible treaties, but how could one choose among these remaining treaties?

Step 7: Analyze Treaties

A treaty is Pareto optimal if it allows one party to get as much as possible without damaging the opponent's position, and vice versa. This concept of mutual improvement is called the Pareto-optimality criterion (Raiffa 1982). Pareto optimality is reached when one side cannot improve its position without degrading the position of its opponents. In Figure 11.1, the circled treaties are Pareto optimal, and all other treaties are not. All of the treaties outside the circle can be improved for at least one party (without depreciating the position of the other party) by moving to a treaty in the circle.

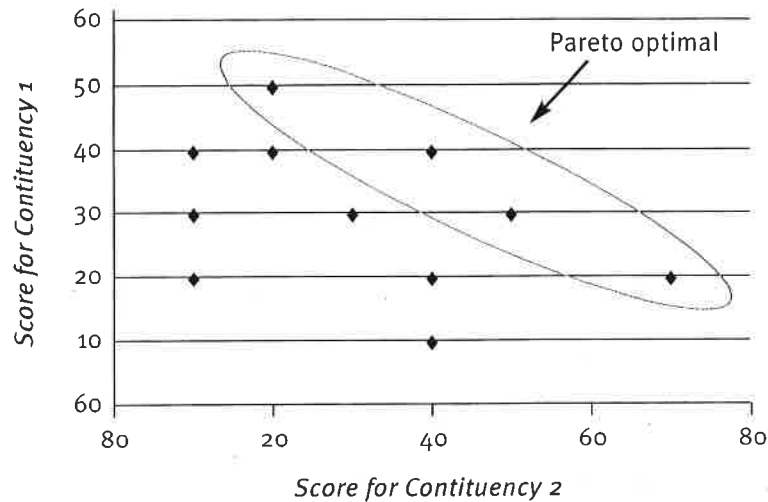


FIGURE 11.1
Value Scores for Two
Constituents
and Pareto-
Optimal
Treaties

In a graph of the value of treaties to two constituencies, an analyst can find the Pareto-optimal treaties by connecting a line from the treaty having the maximum possible value to one constituency to the treaty having the maximum possible value to the other constituency. Typically, these are treaties having the value of 100 to one constituency and zero to the other. If there is conflict between the two constituencies, all treaties should fall below this line. The treaties closest to the line are Pareto optimal.

The purpose of analyzing treaties is to devise a few that are acceptable to all constituencies and that can recast the conflict as a win-win situation. The analyst and constituencies should explore all trade-offs and compromises in a cooperative manner.

The examination of alternative treaties is an iterative process that can be simplified by using computer programs. The important point is that understanding the relative importance of issues and levels of resolution often allows one to find treaties that trade off and improve the outcome for everybody.

It is common to approach conflict resolution by seeking a compromise on each issue in turn. Yet compromising on issues one by one can lead to inferior solutions. Suppose that both sides in the example negotiate and settle on something in between the two extremes for all issues (i.e., something close to value of 50, halfway between 0 and 100). Table 11.5 shows the resulting treaty and the total value of the treaty to each constituency. The value of this treaty for constituency 1 is 53.4 and for constituency 2 is 29.8.

TABLE 11.5
Value of Satisfying Both Constituencies on All Issues Related to Family-Planning Services

Issues	Levels of Resolutions	Issue Weight		Resolution Value	
		Constituency 1	Constituency 2	Constituency 1	Constituency 2
A To what extent should family-planning programs try to convince clients that adolescent sex is bad?	A2 Should be available to clients	0.14	0.07	30	90
	B2 Programs available	0.20	0.04	30	90
B To what extent should family-planning programming be oriented toward strengthening the family?	A2 Should be available to clients	0.14	0.07	30	90
	B2 Programs available	0.20	0.04	30	90
C What limitations to access to family-planning programs should exist for adolescents?	A2 Should be available to clients	0.14	0.07	30	90
	B2 Programs available	0.20	0.04	30	90
C What limitations to access to family-planning programs should exist for adolescents?	C2 Parental notification before counseling or services	0.25	0.48	80	10

TABLE 11.5
(continued)

Issues	Levels of Resolutions	Issue Weight		Resolution Value	
		Constituency 1	Constituency 2	Constituency 1	Constituency 2
D What type of supervision should be required for people who provide family-planning services to adolescents?	D2 Physician supervision	0.11	0.14	60	50
E What organization (with what moral qualifications) should be allowed to deliver family-planning services?	E2 Educational	0.23	0.16	60	30
F Who should regulate the provision of family-planning services for adolescents?	F3 State government	0.07	0.11	40	30
Overall treaty score				53.4	29.8

An alternative approach, called *logrolling*, may be useful in selecting treaties. In logrolling, gains in some issues are traded off against losses in other issues, so each party can win those it considers most important. Researchers have found that conflict-resolution processes that allow logrolling lead to more Pareto-optimal settlements and higher value to each participant than processes based on issue-by-issue compromises (Harinck, De Dreu, and Van Vianen 2000; Bazerman et al. 2000). Logrolling's advantages over compromising within each issue are that it

- defuses ideological disputes,
- increases Pareto optimality,
- satisfies both parties better,
- encourages looking at the big picture, and
- does not divide the original conflict into several separate conflicts.

If one side wins issue x , the losers may try all the harder to win issue y . The very nature of the procedure encourages the parties not to search for the best overall solution.

Let's examine logrolling with data from the family-planning program design. Table 11.6 provides a treaty in which the constituency that cares most about an issue receives the best possible resolution on that issue. The values for this treaty would be 57 and 73, improving the satisfaction of both constituencies over the treaty in Table 11.5. Thus, this type of logrolling should be encouraged at the expense of compromising on issues one by one. Logrolling produces Pareto-optimal treaties, in which no one can improve her situation further without hurting other participants. In fact, an easy way to identify all possible Pareto-optimal treaties is to connect the following three points in Figure 11.1 to each other: (1) the treaty where one constituency gets all it wants, (2) the treaty where the opponent gets all it wants, and (3) the treaty arrived at by logrolling. A line then connects these three points; the treaties close to the line are all Pareto optimal.

Step 8: Develop a Strategy of Negotiation

Coming up with an agreed-upon conflict model is a big achievement in itself. The opposing constituencies have been delineated, the conflict has been specified, the structure of the model (goals, issues, and levels of resolution) has been defined, and the value structures of the constituencies have been articulated. Now, the constituencies are assembled for the first time. The delay emphasizes the need for each constituency to understand its own position before discussing it with its opponents. To minimize conflict caused by a lack of understanding of one's own position, analysts spend a great deal of time clarifying what those positions are and what feasible treaties might look like.

TABLE 11.6
Result When Each Constituency Is Allowed to Win on Issues They Care Most About

Issues	Levels of Resolutions	Issue Weight		Resolution Value	
		Constituency 1	Constituency 2	Constituency 1	Constituency 2
A To what extent should family-planning programs try to convince clients that adolescent sex is bad?	A4 Should be a fundamental part of every service	0.14	0.07	100	0
B To what extent should family-planning programming be oriented toward strengthening the family?	B3 Always, with all clients	0.20	0.04	100	0
C What limitations to access to family-planning programs should exist for adolescents?	C1 No parental notification	0.25	0.48	0	100

TABLE 11.6
(continued)

Issues	Levels of Resolutions	Issue Weight		Resolution Value			
		Constituency 1	Constituency 2	Constituency 1	Constituency 2		
D	What type of supervision should be required for people who provide family-planning services to adolescents?	D1	Social work supervision	0.11	0.14	0	100
E	What organization (with what moral qualifications) should be allowed to deliver family-planning services?	E5	Religious	0.23	0.16	100	0
F	Who should regulate the provision of family-planning services for adolescents?	F1	Peer review	0.07	0.11	0	100
Overall treaty score				57	73		

Now it is time to choose a course of action. Note that at this point the parties have agreed on the issues and feasible levels of resolution, but not on preferred resolutions. It is unlikely that agreement will be reached on all these matters, because some issues are purely ideological, but it is realistic to aim for agreement on certain issues and levels of resolution and to hope to compromise on the rest. The following discussion offers suggestions and guidelines for increasing the probabilities of success at this stage.

Because the issues and levels of resolution have been agreed upon, the emphasis of the meeting is to reduce differences of perception and judgment on the relative importance of disputed issues and levels. But which issue should be addressed first? The answer arises from an examination of the source of the disagreements, which the analyst performs before the plenary meeting. The source of disagreements can be classified along a continuum ranging from purely ideological to purely technical.

The analyst must determine the order in which to present the issues to the constituencies. It might help to classify the issues as follows:

1. *Issues about which parties agree regarding the level of resolution.* Because there are no disagreements, each party's utility can be maximized by allowing the best solution for either party.
2. *Issues where parties agree on the importance of the issue.* In these circumstances, a compromise must be reached by finding some resolution between the preferred choices of the two parties within the issue.
3. *Issues where parties disagree on the importance of the issue.* In these circumstances, the party that considers the issue to be less important may be willing to give up on the issue entirely in return for gains on other issues that are more important to the party.

The presentation order matters. The process should start with those issues on which the constituencies agree regarding the level of resolution. Starting here establishes a mood of goodwill and cooperation; all parties get what they want. Then, issues where both parties disagree on the level of resolution should be presented. Two strategies are followed here. If the two parties agree on the importance of the issues, they are encouraged to consider a compromise within each issue. If the two parties disagree on the relative importance of the issues, the parties are encouraged to swap gains in one issue against losses in another. This is the most difficult set of discussions and should be presented at the end. The presentation order should start with easy issues on which there is agreement and move to difficult issues in which there are significant value differences.

One way to decide on the order of the issues to discuss is to examine the difference in weights assigned by the constituents. Issues with large ranges contain more conflict. For example, in Table 11.4, the biggest conflict is in “To what extent should family-planning programming be oriented toward strengthening the family?” The difference in weights in this issue is 0.16 points, larger than for any other issue. It is likely that a discussion of this issue will contain most of the conflict. The more disagreement and polarization there is about an issue, the larger the range (or variance) of the weights on it, and thus the later in the discussion it should be presented. As before, this ordering typically implies dealing with purely technical issues first and then moving gradually to the more ideological issues.

Why spend so much time determining the order in which to present and discuss issues? Primarily because when the parties assemble, they can create such an explosive atmosphere that it is good to get some agreement on some issues as quickly as possible. If a feeling of accomplishment and understanding can be instilled, the constituencies may suspend or water down their negative preconceptions of the other side and adopt a constructive, problem-solving attitude. Also, if a controversial issue cannot be resolved, the fact that some issues were settled diminishes the frustration of deadlocked negotiations and assures the constituencies that their efforts were at least partially successful.

Throughout the negotiations of differences, the analyst must keep in mind the Pareto-optimal treaties that were developed earlier with the objective outsiders. If negotiations are deadlocked, the analyst uses the fair treaties to generate a breakthrough. These Pareto-optimal treaties can prove that one constituency can improve its satisfaction without damaging the satisfaction of its opponents.

Finally, it is important to end the meeting with a concrete plan for action. If the analyst succeeded in bringing about an overall resolution and drafting a final treaty, then actions to implement this treaty should be agreed upon. On the other hand, if no treaty or only a partial treaty was obtained, the analyst should list actions that will continue the conflict analysis and resolution. Remember that conflict analysis is being done with spokespeople who must sell the resulting agreement to their constituencies.

Step 9: Present Results to all Constituents

The conflict analysis methodology is a strategy to increase the understanding of the underlying sources of conflict. This section shows how an analysis can de-escalate a conflict and increase the probability of a negotiated settlement to conflicts that seem intractable. Analysis checks this escalation by

- preventing the parties from negotiating on the overall treaty until some agreements have been reached;
- discussing issues in a sequence that minimizes frustration; and
- dividing the conflict into component issues and increasing the probability of finding a few areas of agreement.

Parties to escalating conflicts frequently forget their initial concerns and turn to trying to beat each other. The parties may think about saving face, getting even, teaching the others a lesson, or showing others that they can't get away with this. At this point, they more closely resemble a battered prizefighter than a reasonable participant in a public policy debate. When this stage has been reached, the conflict is likely to expand to other areas where it should not logically exist.

Escalation is likely to increase the number and size of the issues under dispute, as well as the hostile and competitive relations among the parties. The opponents may pursue increasingly extreme demands or objectives, using more and more coercive tactics. At the same time, whatever trust existed between the parties is likely to corrode. The ultimate stage in escalation is reached when the parties think differences exist across many issues, even some that were created solely for the sake of bargaining. A feeling of frustration settles in, along with the impression that the parties are incompatible, that compromise is impossible, and that a fight for total victory is the wisest course.

Where substantial differences exist, parties must ventilate their feelings toward each other and talk about the issues dividing them before they can seek a solution that integrates the positions of all important parties. That is, a ventilation phase generally needs to precede an integration phase. Analysis encourages, and actually demands, that parties state their positions, their perception of the sources of conflict, and their assumptions. The model-building phase usually has a cathartic effect, alleviating hostility and creating an atmosphere conducive to such an integration phase.

Conflict escalates when decision makers fail to evaluate their positions, when they are caught in self-fulfilling prophecies of biased misperceptions, and when the communication itself is distorted by distrust and hostility. Analytical approaches can prevent conflict from escalating (Raiffa, Richardson, and Metcalfe 2003) by improving communication and enhancing understanding of the underlying issues.

Summary

This chapter describes a methodology to reduce conflict and build consensus. It consists of identifying the constituencies, their assumptions, and

the appropriate spokespeople to represent their position; identifying the issues underlying the conflict and possible levels of resolution; developing and analyzing treaties; and following a structured process of negotiation and consensus building to agree on a final treaty. A summary of the methodology is shown in Table 11.1.

The main sources of conflict escalation are a lack of understanding among the parties, a lack of information about the opponent's position, and an emphasis on bargaining behavior. An analysis of conflict addresses these problems by using a joint definition of the problem, emphasizing win-win solutions, and helping to minimize the impact of ideological differences by identifying areas of agreement. The logrolling procedure described in this chapter allows each party in the conflict to win in issues they care most about and lose in issues they care the least about.

The conflict analysis methodology promotes consensus building by underscoring the importance of a clear and structured resolution process, by eliciting an understanding of the positions held by the constituencies, and by finding potential trade-offs among them.

Rapid-Analysis Exercises

1. Using the data in Table 11.4, generate 20 possible treaties and calculate the value score for each constituency. Plot your data and show the treaties that are Pareto optimal in bold.
2. Produce a list of at least six issues and the possible resolutions for each issue for either resolving an end-of-life conflict among family members or negotiating a compensation employment package. Assign what you think are the appropriate weights and values that the parties would have assigned to these issues. Use the format of Table 11.7 to report the issues, the issue resolutions, the values of each resolution, and the importance of each issue to both constituents.
3. Using logrolling and your assigned weights, identify a Pareto-optimal solution to the conflict.
4. The data in Table 11.8 were obtained from three people opposed to family planning. Estimate what values are associated with the attribute levels. Make sure your estimates for values on each attribute are normalized to range from 0 to 100. (Please review the convention on constructing single-attribute value functions described in step 5 in Chapter 2.)

TABLE 11.7
Worksheet for Rapid-Analysis Exercise

Issues	Levels of Resolutions	Issue Weight		Resolution Value	
		Constituency 1	Constituency 2	Constituency 1	Constituency 2
A Description of issue A	A1 Description of worst resolution of A			0	
	A2 Intermediate resolution of A				
	A3 Intermediate resolution of A				
	A4 Best resolution of B		100		
B Description of issue B	B1 Description of worst resolution of B			0	
	B2 Intermediate resolution of A				
	B3 Intermediate resolution of A				
	B4 Best resolution of B		100		

TABLE 11.8
Data on One Issue from Three Respondent Opposed to Family Planning

<i>Issues</i>	<i>Levels of Resolutions</i>	<i>Constituency 2</i>		
		<i>Respondent 1</i>	<i>Respondent 2</i>	<i>Respondent 3</i>
A To what extent should family-planning programs try to convince clients that adolescent sex is bad?	A1 Should not do so	0	0	20
	A2 Should be available to clients	20	30	0
	A3 Should be required of all clients	50	80	100
	A4 Should be a fundamental part of every service	100	100	60

Audio/Visual Chapter Aids

To help you understand the concepts of conflict analysis, visit this book's companion web site at ache.org/DecisionAnalysis, go to Chapter 11, and view the audio/visual chapter aids.

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