PROBLEM SOLVING, DECISION MAKING, AND PROFESSIONAL JUDGMENT

A GUIDE FOR LAWYERS AND POLICY MAKERS

PAUL BREST
LINDA HAMILTON KRIEGER

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2. FRAMING PROBLEMS, IDENTIFYING OBJECTIVES, AND IDENTIFYING PROBLEM CAUSES

A problem well put is half solved.
—John Dewey[1]

Chapter 1 introduced a model of problem solving that moves systematically through a number of steps leading up to the selection of the particular course of action that the decision makers believe is best-calculated to solve the problem at hand. These steps include:

1. State, or "frame," the problem to be solved;
2. Identify and prioritize the relevant values, interests, and objectives;
3. Identify and resolve major uncertainties concerning the cause of the problem;
4. Generate a range of plausible solutions or alternative courses of action;
5. Predict the consequences of the courses of action and assess their impact on the relevant interests or objectives.
6. Select the course of action that optimizes the interests or objectives to be served (make a decision);
7. Implement, observe, and learn from the outcome of the decision.

In this chapter, we take a closer look at the first several steps, which reflect John Dewey's view that "a problem well put is half solved."

2.1 THE DECISION CONTEXT AND PROBLEM FRAMES

The frame in which one views a problem or decision is a function of the *decision context*,[2] which is determined both by the values, interests, or objectives at stake and by the authority of the decision maker. People may address the same problem in different decision contexts. For Frank Serrano and his lawyer, Luis Trujillo, litigation determines the initial context for addressing the problem at Terra Nueva, but the broad range of possible stakeholders and interests suggest the possibility of different or broader decision contexts as well.

1. JOHN DEWEY, LOGIC: THE THEORY OF INQUIRY (New York: Holt, Rinehart, and Winston, 1938).

2. RALPH KEENEY, VALUE-FOCUSED THINKING: A PATH TO CREATIVE DECISIONMAKING 30 (Cambridge: Harvard University Press, 1992).

Christine Lamm's decision context for Terra Nueva is circumscribed by the scope of her official authority. For example, while Serrano might (in principle) offer to address the tenants' complaint by lowering their rent, this option is not available to Lamm. Of course, the decision context for a public official is often subject to interpretation or even to legal contest. The U.S. Environmental Protection Agency determined that, while the Clean Air Act authorized the regulation of conventional local pollutants, the agency lacked authority to treat carbon dioxide as a pollutant. In *Massachusetts v. EPA*, the Supreme Court reversed this decision.

Ralph Keeney gives an example of how decision contexts constrain the consideration of potentially valuable solutions to problems:

> Suppose that a utility company is required to spend $1 billion to reduce the probability of a major accident at a nuclear power plant in the event of a large earthquake. The main reason is to minimize radiation danger to the residents of a nearby town. But suppose there is evidence that such an earthquake would probably destroy the town. Indeed, it may be the case that parts of the town would be destroyed by earthquakes or other events that would not damage the nuclear plant with its current protection standards. An alternative that used $200 million from the utility to improve safety in town and the town's ability to respond to disasters might be much better for the town's residents than the $1 billion spent on the plant. It would also lead to lower utility rates for the company's customers.[3]

In actuality, though, the limited jurisdictions of agencies—limitations that serve other legitimate ends—are likely to frustrate such tradeoffs: the authority to regulate nuclear power plants and to take other means to ensure the town's safety probably reside in different agencies—perhaps even different governments.

2.2 PROBLEM FRAMING

The major constraints on creative problem solving do not arise from jurisdictional limitations on decision contexts, but from human psychology. Chapter 1 introduced the concept of "schemas," which structure people's perception of the environment. We schematize problems in the same ways that we schematize everything else. Problem schemas, also referred to as "problem frames," serve important cognitive functions. They enable us to perform a wide range of problem-solving tasks intuitively, with little expenditure of cognitive resources. But like all knowledge structures, problem frames have a potential downside

3. *Id.* at 205.

as well. They can cause us to over-simplify or otherwise misconstrue a problem, leading to an inferior solution strategy.

Problem frames set boundaries on our thinking, defining what is "inside" and what is "outside" the scope of the problem situation. They not only tell us how to describe the problem, but also indirectly indicate what goals, objectives, and solutions to consider.

A particular frame inevitably provides only one of a number of possible views of reality and implicitly blocks the consideration of alternative perspectives with other possible solutions. When you are viewing a situation through a particular frame, though, it seems to provide a complete picture of reality. Indeed, the frame is often invisible: You have the illusion that you're seeing the world "just as it is," and it is difficult to imagine that there could be another way to view it. To use another analogy, seeing a problem within a particular frame is like walking down one of a number of paths that do not converge, with the result that your understanding of the problem and hence the solutions to it become path-dependent—just as some technological practices (video recording formats, operating systems) can become path-dependent—and crowd out valuable, even superior alternatives.

We have just used two different metaphors to illustrate the same phenomenon. Does one or the other resonate more with you? Can you think of yet another one? The metaphors we bring to a situation have a powerful framing effect, and people's framing of the same situation with different metaphors is a ready source of misunderstanding and conflict. Do you view attending the university as a consumer's purchase of a commodity or as becoming a member of a community? Do you view joining a law firm or a government agency as essentially transactional or as joining a family? Do you view negotiation as a game, a war, or a collaboration? (Might professional negotiators get stuck in a particular frame themselves?)

Frames make a difference to outcomes. There's the old story of one monk who asks the abbot, "May I smoke while I pray?" while another monk asks "May I pray while I smoke?" Though we don't have a reliable account of the abbot's responses, it's a good guess that the second monk had a better chance of getting permission. In an experiment by Varda Liberman, Steven M. Samuels, and Lee Ross, American college students, Israeli pilots, and their flying instructors played a Prisoner's Dilemma–type game in which they had the choice of cooperating or defecting. In all the groups of participants, those who were told that the exercise was called the "Wall Street Game" were more likely to defect than those who were told it was called the "Community Game."[4]

4. Varda Liberman, Steven M. Samuels, and Lee Ross, *The Name of the Game: Predictive Power of Reputations versus Situational Labels in Determining Prisoner's Dilemma Game Moves*, 30 PERSONALITY AND SOCIAL PSYCHOLOGY BULLETIN 1175–85 (2004).

Framing plays an important role in public discourse and, therefore, in public policy making. As linguist George Lakoff notes, "People use frames—deep-seated mental structures about how the world works—to understand facts... It is impossible to think or communicate without activating frames, and so which frame is activated is of crucial importance."[5] The application of this observation is commonplace in contemporary politics. Consider the use of "death tax" or "estate tax" to refer to a tax on the transfer of wealth upon the death of wealthy Americans. Or consider framing legislation designed to protect lesbians and gay men against employment discrimination as "special rights for gays" or "guarantees of employment opportunity for all Americans." These rhetorical tactics work because they activate cognitively compelling frames, which predispose people toward particular preferences and judgments.

We sometimes frame problems in terms of particular *time horizons*, focusing either on the near term or long term, but not on both. It often requires less cognitive effort to think of the near term because one needs to do less "mental simulation" and there are fewer uncertainties. Moreover, a short-term outcome that is laden with either positive or negative affect is likely to be more salient than one in the distance. On the other hand, one can be so focused on long-term goals that one ignores more immediate considerations: Consider someone who takes a clerkship with a known tyrant of a judge because of its (supposed) résumé value.

In short, because they do so much cognitive "work," problem frames are enormously powerful. You cannot avoid viewing problems through frames, but with effort you can become aware of how you are framing a situation and whether there are alternatives. Understanding the origins of your frames is a good start. Asking how other stakeholders in the situation might frame it can only broaden your horizons and reduce possible conflict.

In any event, as the epigraph from John Dewey suggests, effective problem solving begins with effective problem framing. We begin the chapter by exploring common pitfalls involved in framing problems and suggest a variety of techniques for developing better problem frames. We then work on specifying the goals or objectives implicated in a problem and show their relationship to the way the problem is framed. Finally, we outline the empirical task of identifying the causes that may underlie a problem.

2.3 PROBLEM-FRAMING PITFALLS

People often solve the wrong problem. They may mistake symptoms of a problem for the problem itself, define the problem too narrowly, or define the problem in

5. GEORGE LAKOFF, THINKING POINTS: COMMUNICATING OUR AMERICAN VALUES AND VISION 10 (New York: Farrar, Staus & Giroux, 2006).

terms of one particularly salient, but not necessarily optimal, solution. Problem framing can occur automatically with little or no conscious, considered thought. Experts, who "over-learn" reoccurring problem frames as part of their professional training, are particularly susceptible to automatic problem framing.

The most common problem-framing errors can be divided into three broad groups:

1. defining the problem in terms of one salient potential solution;
2. mistaking a salient symptom of the problem for the deeper problem itself; and
3. defining a multidimensional problem unidimensionally, often as a result of "expert," or otherwise automatic, problem-framing processes.

We consider each of these in turn.

2.3.1 Framing by Solution

There's an anecdote about a farmer who drives to a neighbor's house to pick up some bags of chicken feed. Finding no one home and the feed bags left neatly stacked by the neighbor's barn door, the farmer drives up beside the barn and loads the feed into the truck bed. As he is about to get back into his truck's cab, he sees that his front left tire is flat—and then remembers that he has no jack in the truck. Feeling no small measure of exasperation, the farmer begins the long walk to the nearest gas station, without noticing that the barn's hay-lift pulley was perfectly positioned to lift the front of his truck.[6] The farmer erred in framing his problem too narrowly. Specifically, he confused the problem ("How can I lift my truck?") with one particularly salient solution ("Find a jack!").

Like the farmer in this story, clients and their lawyers are prone to "framing by solution." A client often comes to a lawyer with only a vague sense of his underlying objectives, but with his mind set on a particular solution. Consider our farmer again. Several years after the flat tire incident, he and his wife decide that they want to retire. They ask their lawyer to transfer ownership of the farm to their three children as equal partners. Specifically, they tell the lawyer that they want her to draft them a grantor retained income trust (GRIT) that during their lifetimes transfers ownership of the farm to their children. They have a friend who did this, they explain, and they hear that the technique minimizes estate tax liability, which is of great concern to family farmers.

The lawyer informs the couple that the tax laws have changed so that a GRIT will not achieve these ends. Moreover, in the course of the consultation, she learns that two of the children play different roles in running the farm, reflecting their different interests and talents, and that the third child has moved to New York City and has not been involved in the farm at all. The lawyer points out that

6. Jacob Getzels, *Problem Finding and the Invention of Solutions*, 9 JOURNAL OF CREATIVE BEHAVIOR 12, 15–16 (1975).

the trust and tax issues are relatively minor compared to questions about how the children will participate harmoniously in running the farm and share in its profits (or losses). She knows from experience with other family businesses that whatever stability in family relations may exist while the parent is actively running the enterprise often dissolves upon the parent's retirement or death. The clients' problem frame—"how do we set up a GRIT?"—failed to capture important dimensions of their actual problem: How should we structure our estate plan to best provide for our children? Helping her clients develop a better problem frame was an important aspect of the lawyer's job.

The most powerful protection against shallow, solution-based problem frames is the deceivingly simple question, "*Why?*" For example, by asking the clients what they want to accomplish, the lawyer leads her clients to reframe their problem as, "How can I best provide for the needs of our family after our deaths?" Once the problem frame is expanded past the false boundaries drawn by the presumed solution of drafting a particular instrument, the utility of other interventions becomes apparent. By asking "why" until a client's deepest practical goals and objectives are recognized, a lawyer can assist her client in solving the right problem.

Ralph Keeney provides a good example from the realm of public policy, involving the decision of how to transport hazardous material to a distant waste dump:

> One objective may be to minimize the distance the material is transported by trucks. The question should be asked, "Why is this objective important?" The answer may be that shorter distances would reduce both the chances of accidents and the costs of transportation. However, it may turn out that shorter transportation routes go through major cities, exposing more people to the hazardous material, and this may be recognized as undesirable. Again, for each objective concerning traffic accidents, costs, and exposure, the question should be asked, "Why is this important?" For accidents, the response may be that with fewer accidents there would be fewer highway fatalities and less exposure of the public to hazardous material. And the answer to why it is important to minimize exposure may be to reduce the health impacts of the hazardous material. To the question, "why is it important to reduce health impacts?" the response may be that it is simply important. This indicates that the objective concerning impacts on public health is a candidate to be a fundamental objective in the decision context.[7]

2.3.2 Symptoms vs. Problems

Most people do not go through their lives looking for problems to solve. Solving problems requires time, attention, money, and other resources that most citizens and officials would rather expend in other ways. As a result, many of the problems

7. Keeney, *supra* at 66.

that lawyers and policy makers face are situations where something has "gone wrong" rather than opportunities to keep things from going wrong or, better yet, to improve the world. The uproar over Terra Nueva is the trigger that gets the immediate attention of Luis Trujillo and Christine Lamm. Because the events are vivid, consequential, and emotionally freighted, it is easy to experience the trigger as the problem itself. But this is not necessarily so. The trigger may just be the symptom of a deeper problem.

Of course, this does not mean that the symptom should be ignored. More often than not, the issue that triggered the problem demands attention. The mistake is in failing to identify the relationship between the trigger and the deeper, often multidimensional, state of affairs that gave rise to the problem.

Consider the following example. In 1992, an undercover investigation by the California Department of Consumer Affairs caught Sears Auto Centers systematically defrauding customers by selling them unnecessary repairs. A parallel investigation in the State of New Jersey uncovered a similar pattern of fraudulent sales activity by Sears Auto Centers located there. After initially denying that anything improper had occurred, Sears eventually admitted that "mistakes had occurred" and paid many millions of dollars to settle the two matters. If Sears's problem were defined as "resolving the enforcement actions at the lowest feasible cost," the multimillion dollar settlements might well be viewed as a successful solution.[8]

However, consumer advocates and eventually Sears itself defined the problem differently. The problem was not just the state enforcement actions or even the fraudulent sales themselves. A deeper problem, and the cause of these symptoms, lay in Sears's management practices, which encouraged dishonest behavior. These practices included the imposition of mandatory repair-dollars-per-hour quotas on mechanics, the use of a commission-based compensation system, and the deployment of high-stakes contests—all designed to encourage employees to maximize repair sales. Seen through this lens, the fraudulent behaviors and the enforcement actions themselves were symptoms of a deeper problem involving Sears's management and compensation practices. Solving the problem required changing these practices, as well as resolving the lawsuits.

As this example suggests, effective problem framing often requires careful thinking about the causal antecedents that gave rise to a particular problem trigger:

1. Generate an initial statement of the problem—an "initial frame statement."
2. Identify the "trigger" that instigated the problem-solving procedure in the first place.

8. Clifton Brown, *Sears Auto Centers*, The Department of Accountancy, University of Illinois at Urbana-Champaign (2000), http://www.business.uiuc.edu/ce%2Dbrown/accy304spg01/Downloads/Sears%20Auto%20Centers.pdf.

3. Identify the situation or context in which the problem trigger occurred. Assess the relationship between the trigger and this situation or context, asking such questions as:
   a. Is the trigger the whole problem, or is it part of a larger, deeper, or multidimensional problem?
   b. What are the trigger's causal antecedents, and which, if any, of them are within my control?
   c. If I solve the trigger problem, but do nothing else, what might happen?
   d. What did my initial frame statement overlook?
4. Reframe the problem as necessary, incorporating additional aspects of the deeper problem uncovered in these steps.

2.3.3 Automatic Problem Framing and the Pitfalls of Expert Problem Frames

Problem solving often occurs automatically, through the intuitive activation and application of well-learned problem schemas. In these situations, some salient aspect of the problem activates a stored representation of "problems-of-this-type" residing in memory. Once activated, the schema directs the problem solver's attention to whatever information the schema contains. This may include a ready-made problem frame, a set of plausible solutions, and an information search blueprint, telling the schema-holder what type of unknown information is relevant to solving the problem and how to go about obtaining and using that information to select the most effective solution strategy.

Experts, including lawyers and specialized policy makers, are particularly susceptible to automatic problem framing. The process of developing professional expertise entails learning sets of "expert frames." These frames efficiently capture aspects of the situation that are relevant to the professional's particular area of expertise. But they are inevitably rather narrow, often failing to capture important dimensions of the problem as it is actually experienced by clients, citizens, and other stakeholders.

Lawyers tend to frame problems differently from the way their clients do because they approach the problem with different schematic mind sets. The lawyer hears the client's story through the filters provided by the lawyer's expert schemas. These tell him which aspects of the client's narrative are important and which are not. They direct the lawyer to follow up on certain subjects, asking additional questions and probing for detail, and to cut the client short when she dwells too long on "irrelevant" matters. In this way, aspects of the situation that the client subjectively experiences as important may become invisible to the lawyer, and the entire matter may head in a direction that poorly serves the client's interests, broadly conceived.[9]

9. Conversely, the client may come to the lawyer wanting a legal solution, but having a mistaken impression of the nature of applicable legal constraints. Because he is unfamiliar with the law and lacks a robust set of expert legal schemas, the client may in fact misframe his problem. The client may dwell on material that he erroneously believes to be pertinent to the legal frame. He may frame his problem in terms of an ineffective or unavailable solution. He may resist his lawyer's efforts to direct the conversation toward subject matters that the lawyer knows are relevant to the proper framing of the legal problem, or he may be reluctant to provide in sufficient detail information that the lawyer knows is important.

Consider the different ways in which the problem at Frank Serrano's Terra Nueva apartments might be framed. If Serrano had consulted a stereotypic "hardball" litigator, the lawyer might have conceptualized the problem simply as being "sued" by the tenants and the solution as winning a decisive victory in court.

But the lawsuit may be only one aspect of a multidimensional problem. Serrano has been the subject of a front page news story that, he worries, may be followed by others. With his reputation at stake, Serrano does not just have a lawsuit problem, but a public relations problem as well—a problem that could be exacerbated by a no-holds-barred litigation defense strategy. And what about Serrano's relationships with his company's various stakeholders and constituencies: tenants, community activists, financial backers, regulators, and his contractors and suppliers?

Though successfully defending Serrano against the suit will constitute an important element of a successful outcome, these other aspects of the situation may also be important to Serrano. If he is to do his job well, Trujillo must act as a good counselor as well as a skilled litigator. He must also help Serrano identify nonlegal aspects of the situation that he may experience as important problems now or in the future.

A good lawyer understands that, even though it was the client's identification of the problem as a "legal" one that brought him to the office, a purely legal frame may be too narrow. But a lawyer who reflects on his or her own professional development will be aware of the forces that induce such framing. Professional expertise often works like a kind of zoom lens, focusing in on one small portion of a broad landscape, revealing its features in great detail. This focus—an intentional myopia—facilitates the accurate, efficient, and effective identification of problems and the rapid deployment of interventions designed to solve them. But it can also lead the expert to miss important features of the larger picture, with significant collateral consequences for what lies beyond his field of vision.

The solution to this dilemma is not to abandon the schemas that lie at the core of the lawyer's professional expertise. After all, it was because of this expertise that the client walked in the door. Optimal problem framing in lawyer-client collaborations requires a "both/and" rather than an "either/or" approach—an

approach that enables the lawyer-client team to view the problem from a variety of different perspectives.

2.4 IDENTIFYING INTERESTS AND OBJECTIVES

The idealized model of problem solving (set out in Chapter 1 and at the beginning of this chapter) first defines the nature of the problem and then identifies client objectives. But the problem definition is inextricably bound up with the those objectives. Since problems often implicate a number of different objectives, the best problem frame makes room for consideration of all of them.

In the following discussion, we use *objectives* and *goals* synonymously to refer to relatively concrete aspects of the client's or other stakeholders' desired outcomes. *Interests* are somewhat more general or abstract than objectives and somewhat more concrete than *values*. These concepts are not separated by bright lines, but lie on a continuum. It is useful to bear in mind that someone's actual experience of a solution as a "success" or a "failure" will be driven by both concrete and more intangible factors, ranging from monetary gains or losses on one side of the spectrum to fidelity to philosophical, religious, or spiritual values on the other.

2.4.1 Multidimensional Frames and the Process of Framing-by-Objectives

To identify the entire range of interests and objectives affected by a particular problem, it is helpful to view the situation from the standpoint of all its potential stakeholders and constituencies. We refer to this process as a *stakeholder analysis*. Identifying the interests of stakeholders other than himself does not imply that an individual is or should be altruistic—he may or may not be. Rather, the analysis ensures the consideration of all external factors that could affect resolution of the problem at the same time as it helps canvass the client's own interests.

A problem's trigger draws attention only to those objectives most closely associated with it. In Serrano's case, the trigger may be the threat of a lawsuit. The most salient objective is avoiding or winning the lawsuit or, at least, minimizing its financial costs. But looking at the problem from the perspectives of other actors (as shown in Figure 2.1) conduces to a more complete articulation of the interests at stake:

The stakeholder analysis will help Serrano and Trujillo systematically consider what actions should be taken to:

1. minimize Serrano's financial exposure, taking into account both potential liability in the lawsuit and costs of defense;
2. minimize damage to Serrano's reputation;
3. minimize damage to Serrano's relationships with government regulators, financial backers, present and potential business partners, current tenants, and prospective tenants;

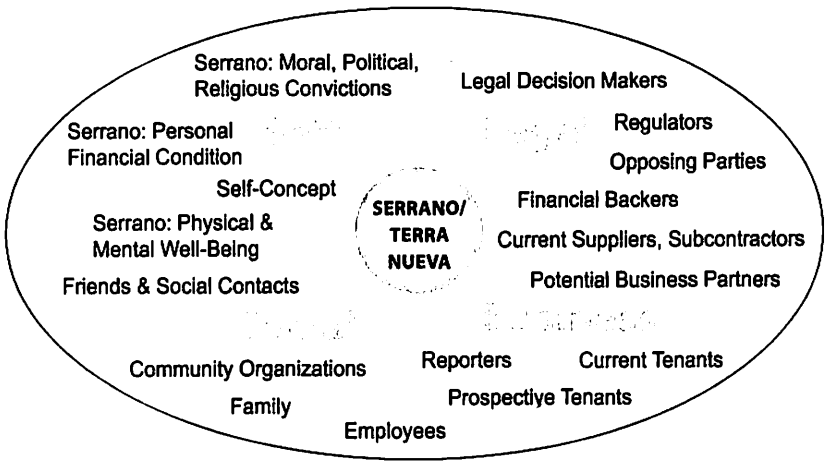

FIGURE 2.1 STAKEHOLDER ANALYSIS.

4. minimize psychological stress on Serrano and others in his family and business; and
5. "do right" by anyone who has actually been injured by materials used in the homes.

Problem: Sketch a "stakeholder analysis" for Christine Lamm in addressing the Terra Nueva matter.

2.4.2 Underspecification of Objectives: Causes, Consequences, and Corrective Strategies

There are many reasons why decision makers may underspecify the interests and objectives implicated by a particular problem. We have discussed the problem of "superficial" or "shallow" objectives, illustrated by the story of the farmer with the flat tire. The farmer underspecified his objectives by treating one possible means of solving his problem as the end itself. We have also seen how expert schemas—for example, that of the hardball litigator—can lead to ignoring interests that do not come within the ambit of a professional's conception of a problem.

Social norms, fear of embarrassment, or other social constraints may also interfere with the full specification of client goals and objectives. Jack Serrano may be truly concerned about the possibility that residents in his housing units are being physically harmed. He may be experiencing disturbing feelings of fear, self-doubt, or shame. But something about the litigation context tends to submerge litigants' concern for others—particularly opposing parties. Perhaps we automatically think of litigation as the "Wall Street Game," or even as the "War Game." Many lawyers may feel that it is not their place to raise other-regarding

objectives and interests unless the client does so first. But unless the lawyer provides an opening for the consideration of these issues, the client is apt to avoid them too, implicitly assuming that they are irrelevant or inappropriate.

Hidden or submerged objectives do not disappear simply because they were never explicitly identified. But if they are not identified, they are less likely to be achieved. Under these circumstances, the client may feel dissatisfied with an outcome, even if it achieved all overtly specified goals.

Stakeholder analysis suggests that the client may himself comprise a variety of different "stakeholders." A client's various "selves" may have differing, even competing interests in a particular problem situation. Serrano's social self, his emotional self, his financial self, and his ethical/religious self may all have "stakes," or interests, in the Terra Nueva situation. These interests may compete and even conflict with each other. For example, if Serrano were only concerned with mitigating legal liability, his lawyer might take steps that would damage his relationship with tenants, suppliers, regulators, and others. The conflicts may be essentially *intrapersonal* as well as strategic. For example, strong empathy with the tenants or a desire to apologize may compromise the possibility of an ultimate victory in the courts. Likewise, a legal victory might leave Serrano wracked with guilt or shame.

In summary, the optimal framing of a problem requires a thoroughgoing identification of all the important objectives implicated by the situation. Here is a checklist for going about this:

1. Construct a list of stakeholders and then view the problem situation from each stakeholder's perspective.
2. Identify the objectives pertaining to the client's relationship with each stakeholder.
3. Imagine the best outcome for each stakeholder and identify exactly what it is about that outcome you would like to achieve.
4. Imagine the worst outcome for each stakeholder and identify exactly what it is about that outcome you want to avoid. (People often find it difficult to think about worst-case scenarios.[10])
5. Watch out for "shallow" objectives, resulting from the confusion of means with ends. Deepen these by asking, "Why?" until you cannot go back any further (without becoming unconstructively existential or just annoying).
6. Allow for the surfacing of objectives that may be difficult to discuss in the particular social context in which decision making is occurring. If the client is an individual, consider the whole person, and make the lawyer-client relationship as safe a space as possible for the discussion of sensitive, personal issues.
7. Stay open to the possibility that additional objectives will emerge as problem solving continues, particularly as various alternative courses of action are being considered. If a particular course of action causes unexplained discomfort, that may signal the presence of an overlooked interest, objective, or an as yet unidentified path constraint.

10. KAREN A. CERULO, NEVER SAW IT COMING: CULTURAL CHALLENGES TO ENVISIONING THE WORST (2006); Lee Clarke, *Thinking About Worst-Case Thinking*, 78 SOCIOLOGICAL INQUIRY 154 (2008).

Given the constraints of bounded rationality (see Section 1.6.2), "human beings have unstable, inconsistent, incompletely evoked, and imprecise goals at least in part because human abilities limit preference orderliness."[11] An individual's objectives may only emerge with clarity during the process of deciding how to pursue them.[12] None of this diminishes the value of being as clear as possible about one's objectives from the outset. However, it does suggest that as the problem-solving or decision-making process proceeds, one should be open to new objectives coming into sight and to a revised understanding of their relationships and relative priorities.

2.5 IDENTIFYING PROBLEM CAUSES

In many problem situations, solving a problem effectively requires accurately diagnosing its causes.

Causal analysis often takes place at the intuitive end of the problem-solving continuum—and often successfully so, notwithstanding Christine Lamm's computer fiasco. Developing accurate intuitions for analyzing causes is a crucial aspect of acquiring expertise in a domain—though even within their specialties, experts often follow up their intuitive causal hypotheses with more deliberative diagnostic procedures. In any event, expertise is *domain specific*. The physician with fabulous skills in diagnosing medical problems may have no intuitions whatever about why her car stalls on the way to work.

Yet the nature of many lawyers' and policy makers' work requires them to engage in problem solving in a wide variety of substantive domains, and this requires developing a general sense of how to analyze causal relations. General problem-solving skills include both a positive and what might be called a precautionary component. On the positive side are structured analytical techniques designed to assist causal reasoning. The precautionary components consist of awareness of errors that the intuitive empiricist is prone to make. The remainder

11. James March, *Bounded Rationality, Ambiguity, and the Engineering of Choice*, 9 BELL JOURNAL OF ECONOMICS 598 (1978).

12. JOHN W. PAYNE, JAMES R. BETTMAN, AND ERIC J. JOHNSON, THE ADAPTIVE DECISION MAKER 10 (New York: Cambridge University Press, 1993).

of this section introduces one positive analytic technique developed by Charles Kepner and Benjamin Tregoe[13] and touches briefly on some of the errors of the intuitive empiricist. We continue both subjects in Part 2, with an exploration of statistical techniques that can assist in attributing causation and with a deeper examination of the cognitive biases and heuristics that can impede sound empirical judgments.

Recall the conversation between Christine Lamm's and Paula Henderson, the mayor's chief of staff. Lamm has suggested putting together a working group of public health professionals whose task it will be to determine whether the foam insulation that the mayor proposes to ban is, in fact, making Terra Nueva's tenants sick. In the following scenario, Lamm is conducting an initial meeting with Marsha Yamamoto, who works at the Division of Environmental and Occupational Medicine at the County's Department of Public Health, and Sam Cooke, a toxicologist from the State Department of Occupational and Environmental Safety, who has conducted preliminary interviews with Jack Serrano and various of his employees and contractors. Lamm sets the meeting's agenda.

LAMM: I've called this meeting to figure out what we know and what information we are going to need to determine whether the foam insulation, or anything else in the apartments, is actually making the tenants sick. Before I initiate a formal rule-making process geared toward proposing a countywide ban on the use of the material, I want to be sure that we have some reason to believe that the insulation is actually causing harm. I know that the mayor is concerned about the political angle here, but our concern is the science, not the politics.

YAMAMOTO: Before we start, I think you should see this morning's *Gazette*. Poor Jack Serrano now has the United Electrical Workers after him as well. That's going to make the mayor even more edgy.

LAMM: Why in the world would the UEW be interested in this?

YAMAMOTO: You recall the new factory that United Semiconductor built a year ago? Well, it turns out that many of their employees were relocated from the company's Valley View plant, and many moved into Serrano's newest apartments—into units 5 and 6. A couple of months ago, the union began trying to organize the employees. It held a meeting in the community hall at Terra Nueva. One of my assistants went to the meeting and saw their leaflets, which said something about workers' health. Maybe they think that showing concern for the tenants at Terra Nueva will be helpful in organizing the factory.

13. CHARLES H. KEPNER AND BENJAMIN B. TREGOE, THE NEW RATIONAL MANAGER (2d ed. Princeton: Princeton Research Press, 1997). For a similar approach, *see* DEAN K. GANO, APOLLO ROOT CAUSE ANALYSIS (2d ed. Yakima, WA: Apollonian Publications, 2003).

In any event, the article says that the UEW surveyed families in the new buildings and that 40 percent have reported headaches, dizziness, or rashes developing since they moved into their apartments. The union claims that this is "overwhelming evidence" that the foam insulation is causing the sickness. I should add that the article does not say whether the UEW had heard complaints before it did the survey.

LAMM: By the way, didn't I read in the documents we got from the mayor's office that all of the affected Terra Nueva residents live in units 5 and 6? What can you tell me about those units?

YAMAMOTO: They were finished and people started moving into them a year ago.

COOKE: I talked yesterday to one of Serrano's people, who said that the manufacturer who supplied the insulation that they used for the older apartments had raised his prices so much that the contractor bought the insulation for the new units from another company. Apparently, it's a completely new product. Serrano was among the first developers in the county to use it. He told me that it did have a sort of "chemical" smell when it was installed—lots of synthetics do—but it wore off pretty quickly.

LAMM: Well, that's interesting. Do you know if there are any other differences in the materials used in the new apartments—for example, carpets or paint?

COOKE: I'm pretty sure that there aren't.

YAMAMOTO: Let me just say that if 40 percent of the Terra Nueva tenants are sick, that's a pretty strong argument in favor of there being a problem with the insulation. I am also mindful that there have been similar reports of "foam insulation syndrome" in other parts of the country.

COOKE: Well, hold on a minute, Marsha. My guess is that if you asked anyone if they had had headaches, dizziness, or rashes at some point, 40 percent or more would say yes. If there was something wrong with the foam insulation, it should be making *everyone* in those units sick. And we don't know anything about the other units. I recall reading an article about people throughout Europe getting sick from Perrier water after they learned that it contained a tiny trace of some chemical. The company withdrew the so-called "contaminated" bottles, but the whole thing turned out to be mass hysteria. Clusters of illnesses of this sort often turn out to be illusions.

In my view, there isn't any solid evidence in the toxicology literature supporting the theory that this particular product causes illness of this type. Where I sit right now, particularly after doing some interviews last week, I don't think the problem is the foam insulation, or the union for that matter.

In my purely personal opinion, I wonder whether this whole thing may in fact be a tactic by the tenants' association. When I talked to Serrano last week, he mentioned that, because his costs had risen, he raised rents at Terra Nueva a couple of months ago. The new rents will go into effect the first of next year. He told me that the tenants' association presented tremendous opposition to the rent hikes and that the association's president is one of the named plaintiffs in new lawsuit.

LAMM: Forty percent of the tenants may be a lot or a little. But we really don't know enough to come to any conclusions yet. We don't even know whether the apartments with the new product have the same insulation as the ones in the reports of so-called "foam insulation syndrome"—whatever that is. These are things we need to explore.

At this point, all we have is some different theories about what's going on. So let's step back and walk through this systematically. I'm going to suggest that we follow these steps:

1. Define the problem;
2. Specify the problem's "what," "where," "when," and "extent";
3. Spot distinctions and identify changes responsible for the distinction;
4. Identify causal theories for further testing.

2.5.1 Define the Problem

LAMM (continued): Before we try to identify the *cause* of the problem, let's begin with the problem itself. To generalize, a "gone-wrong" problem involves a deviation from some standard or norm. Here, the norm is health and the deviation is the tenants' sicknesses.

Initially, I had thought that the problem was "tenants experiencing headaches, dizziness, and rashes." But we don't want to jump to any conclusions. So at this point it's probably best to describe the problem as *reports* that tenants are experiencing these symptoms. We don't know what the tenants are actually experiencing, or what questions are being asked to elicit information, or how accurate the surveys are. Notice, by the way, that headaches, dizziness, and rashes are pretty amorphous symptoms. We may need to come back to that issue later. Anyway, let's move on to step 2.

2.5.2 Specify the Problem's "What," "Where," "Extent," and "When"

LAMM (continued): The next step is to a get a clear sense both of what the problem *is* and what the problem *is not*. Let me draw a chart showing what we know in these respects and also what we don't know.

The *what* is whether there are reports of illnesses. The *where*, so far as we know, are the new units. And the *extent* is 40 percent of the residents who report having symptoms—40 percent of those surveyed. But we don't know

TABLE 2.1 THE PROBLEM AT TERRA NUEVA

	Is	Is not
What	Reports of headaches, dizziness, or rashes	
Where	Units 5 & 6 (new units)	[What about the other units?]
Extent	40% of those surveyed in those units	[60% did not report symptoms?]
When	Since 1 year	Before
	After new units built	Before
	After United Semiconductor employees moved in	Before
	After rent increase announced	Before
	Before union began organizing?	After?

how many tenants were surveyed, or who they were, or how the survey was conducted—let alone anything about the health of tenants in the other units.

YAMAMOTO: What difference does that make if this many people are sick?

LAMM: That's a good question, Marsha. It's easy to get fixated on where the problem is. But you can't really begin to unpack the causes of the problem until you know where it *isn't*. Suppose, just for the sake of argument, that lots of the tenants in the old units, with older insulation, also report the symptoms. There could still be a problem. But it wouldn't be the problem that the tenants, the mayor, and now half the county thinks it is—the new insulation. That's why we need to learn more about how the tenants in the other units are doing—and also to be sure we know what kinds of insulation their apartments have.

Just to finish my chart, let's talk about the *when* of the reports. We really don't know when any of the tenants first *experienced* these symptoms, but for the moment, let's say it's a year ago—it doesn't seem as if it could have been any earlier than that. That will give us a baseline for some other "whens": the symptoms were reported after the new units were built, after United Semiconductor employees moved in, and after the rent increase was announced. We don't know whether the first reports were made before the union organizing campaign, although it seems likely they were—otherwise, why would the union have conducted the survey; still, we need to check this out.

2.5.3 Spot Distinctions and Identify Changes Responsible for the Distinction

LAMM (continued): Now let me add a column about anything that seems distinctive about what *is* and is *not* and about anything else noteworthy:

TABLE 2.2 THE PROBLEM AT TERRA NUEVA ANNOTATED

	Is	Not	Distinctive, noteworthy, questions, notes
What	Reports of headaches, dizziness, or rashes		Illness reports [Actual symptoms?]
Where	Units 5 & 6 (new units)	[What about the other units?]	(1) New insulation [though not sure about whether some older units have the same insulation] (2) plaintiffs live here
Extent	40% of those surveyed in those units	[60% did not report symptoms?]	[How many people were surveyed? Who was surveyed? What about the other units?]
When	Since 1 year	Before	
	After new units built	Before	New units
	After United Semiconductor employees moved in	Before	United Semi employees move in
	After rent increase announced	Before	Rent increase affected all tenants (not just those in new units)
	Before union organizing?	After?	Doesn't seem causally related—but check whether reports had been made before survey

With respect to the *what*, the reports of illness obviously are distinctive. With respect to the *where*, the fact that the known complaints come from people living in the new units is distinctive. The particular insulation used in their apartments may be distinctive, but we really don't know for sure. The *whens* seem most interesting. The complaints only began after the new units were built, after the United Semiconductor employees moved in, and after the announcement of the rent increase. But it is at least noteworthy that, though the rent increase affects all the tenants, the only people complaining of illness are in the new units. We need to check out if the symptoms were reported before the union-organizing campaign.

YAMAMOTO: If so, that eliminates the union as the cause of the whole mess.

LAMM: Probably so—though we can't discount the fact that the union may be distorting or exaggerating the extent of the problem.

2.5.4 Identify Hypotheses for Further Testing

LAMM (continued): In any event, we end up with a number of possible ideas about what's going on at Terra Nueva. But let me suggest that we spend our time and, I'm afraid, some of the county's resources, focusing on one question in particular: whether there is a causal connection between any materials in the Terra Nueva apartments and the tenants' reported headaches, dizziness, and rashes. To the extent we have a clear answer to this, it will affect any other theories of what's going on.

In addition to doing some research, including contacting the manufacturer to see whether there have been other problems of this sort, we will need to learn about any differences in insulation and other materials in the newer and older units that could be related to the tenants' sicknesses. And we need to bring an epidemiologist to conduct a study that clearly specifies the symptoms the tenants may be experiencing and collects data on those symptoms appearing in tenants living in the new units and in those living in the old units.

2.5.5 Attributing Causation

The discussion about what's actually going on at Terra Nueva illustrates a number of issues relevant to the process of attributing causation, and we note some others as well.

1. Think about what has changed with respect to any context or environment that might explain the problem. When attempting to identify a problem's causes, specify the problem both with respect to what, where, and when it *is*, and what, where, and when it might reasonably have been but *is not*. Comparisons between, say, where and when the problem happened and where and when else it *might* have happened but didn't can be instructive.
2. Inferences of causation often depend on assessing probabilities. Yet when assessing probabilities, one's attention often (and often misleadingly) focuses on particularly vivid descriptions of risks—a tendency encompassed by what the psychologists Amos Tversky and Daniel Kahneman call the *availability heuristic*. In this case, individual tenants' stories and front-page newspaper reports of "foam insulation syndrome" occurring elsewhere in the country provide a vivid explanation for the situation at Terra Nueva. The statistical analysis that Christine Lamm and her colleagues will undertake will be pallid by comparison. We will do the statistics in Chapter 5, and discuss the availability heuristic and some other phenomena that tend to distort judgments of probability in Chapter 9.
3. People also tend to make judgments about causation based on the degree to which they perceive a resemblance between the cause and effect.

For example, it is more intuitive that bad-smelling foam insulation, rather than odorless material, would cause the symptoms reported by Terra Nueva residents. This is one aspect of the phenomenon that Tversky and Kahneman called the *representativeness heuristic,*[14] which we will discuss later as well (See Section 8.3).

4. People doing intuitive statistical analysis tend to focus on cases where the putative cause (foam insulation) and effect (illness) occur together. But as we will see in Part 2, one usually cannot draw valid statistical conclusions without taking account of cases where the possible "cause" exists but the "effect" does not occur (foam insulation but no illness), where the "cause" is absent but the "effect" occurs (no foam insulation, but tenants feel ill), and where neither occurs (no foam, no sickness). For instance, if it turned out that 40 percent of the tenants in the foam-free units reported illness, it would seriously undermine the theory that the foam caused the illness.
5. Be open to considering every plausible causal theory at the beginning of the deliberative process, and don't get fixated on any particular one. With respect to each plausible theory, consider how to go about testing its soundness. (Resist the common tendency to overvalue information that would confirm a favored theory at the expense of information that could disconfirm it.)
6. Correlation does not entail causation. The incidence of shark attacks is positively correlated with ice-cream sales at the beach. Which causes which? What might cause both?
7. One factor alone may not have caused the effect; it may result from the confluence of several causes. Some of these may be background conditions that were present before and after the particular effect, or present in difference places or circumstances where the effect did not occur. But they may still be but-for causes of the effect.
8. Acquiring information to test causal theories is often expensive, and the cost of obtaining the information itself must be balanced against the costs of making decisions without it.

2.5.6 Problem

Toward the end of the discussion, Christine Lamm remarked, "There's something bothering me that I can't quite put my finger on." It sounds as if she has in mind yet another hypothesis for the sicknesses at Terra Nueva. What might it be—and how would you go about testing it?

14. Daniel Kahneman and Shane Frederick, *Representativeness Revisited: Attribute Substitution in Intuitive Judgment, in* HEURISTICS AND BIASES, THE PSYCHOLOGY OF INTUITIVE JUDGMENT 49 (Thomas Gilovich, Dale Griffin, and Daniel Kahneman eds., New York: Cambridge University Press, 2002).

2.6 MOVING THE WORLD IN THE DESIRED DIRECTION THROUGH STRATEGIC PLANNING

Terra Nueva and the examples given so far in this chapter demonstrate decision-making strategies to use when something has gone wrong. But lawyers and policy makers also have opportunities to be proactive in problem solving, to move the world in a desired direction. Strategic planning—whether by state or local governments, nonprofit organizations, or foundations—is a classic case of forward-looking problem solving.

Here we provide an example of strategic planning by the William and Flora Hewlett Foundation. Unlike governments, which often implement strategies through their own agencies and personnel, grant-making foundations do so through grants to nonprofit organizations. However, a foundation cannot know what grants to make to what organizations until it has established its own goals and determined strategies for achieving them.

Note to students: While the discussion of goals, barriers, outcomes, and targets fits within the theme of Chapter 2, much of the rest of the materials concern the choice among alternatives, and fits better with Chapter 4 or elsewhere. To present a coherent story, we present all aspects of the strategic plan here rather than divide it among several chapters.

Since its establishment in 1967, the Hewlett Foundation's concerns have included preserving the natural heritage of the American West. In 2009, the Foundation's Environment Program engaged in a strategic planning process for this area of its grant-making.[15] The Foundation was willing to devote approximately $125 million over five years to achieve its goals in the West, with the hope that this would be matched by other donors interested in the region. The total commitment, though fairly large by philanthropic standards, pales in comparison to the magnitude of the problems addressed. Hence the need for great clarity and focus in goals and strategies.

Scope of work. The Foundation began by defining the geographic scope of its work. Bounding its definition of the American West from "the uplift on the eastern edge of the Rocky Mountains to the Pacific coast" (as shown in Figure 2.2) made it possible to establish clear goals for the region and analyze the barriers to achieving them.

Goals. There are many possible goals related to protecting the natural heritage of the American West, from preserving iconic landscapes to ensuring the viability of farming and ranching communities. The Hewlett Foundation envisioned "an ecologically vibrant West where the landscape is unspoiled and people and wildlife thrive." Since functioning natural systems underpin this vision, the

15. The planning was done by foundation staff members, led by Environment Program Director Tom Steinbach, with the assistance of Ivan Barkhorn and staff from the Redstone Strategy Group, LLC.

FIGURE 2.2 ECOLOGICAL SCOPE.

Foundation made its ultimate goal ensuring the "ecological integrity" of the West, meaning that natural systems would function close to the way they would in the absence of human activity (see Figure 2.3).

Barriers. The next step in the Foundation's strategic planning process was to identify the barriers to achieving ecological integrity in the West. These barriers in effect describe the problems the Foundation would need to solve to reach its goals.

The Foundation's research and experience showed that current and emerging human uses in the West, in addition to bringing economic benefits, can pose

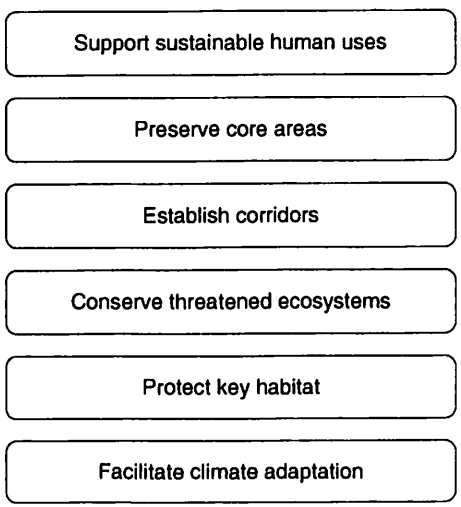

FIGURE 2.3 THE ELEMENTS OF ECOLOGICAL INTEGRITY.

threats to ecological integrity. Leading threats include unplanned population growth, resource extraction, and human-induced climate change. Rapidly increasing population and per capita consumption in the West have led to the use and development of formerly unoccupied lands. This has sometimes fragmented habitats and blocked species' migration routes, threatening their survival. Agricultural and urban areas can also place increasing demands on freshwater supplies, which may have negative impacts on species and ecosystems. Current methods of resource extraction can create health and environmental problems. In the face of these pressures, some policies critical to ensure responsible stewardship of the West needed strengthening or improved enforcement to ensure the ecological integrity of the region.

Outcomes and targets. Analysis of these problems led the Foundation to specify four key measurable targets[16] in achieving its goal of ecological integrity in the West:

1. Land conservation improved for 150 million acres.
2. Water and riparian conservation improved for 2400 river miles.
3. Fossil fuel development reduced on 85 million acres, and renewable use/energy efficiency increased by 100 thousand gigawatt hours per year.
4. Lasting support for conservation created in each of the West's four major ecological zones.

Each of these key outcomes ties back to the Foundation's overall goal and is based on analyses of the barriers to achieving that goal. For example, the target for improving land conservation emerged from the Foundation's recognition of two key problems:

- On private land, increasing population, tourism, energy development, and division of large spaces into suburban "ranchettes" created challenges to ecological integrity.
- Land management plans for the public land that makes up over 85 percent of the West sometimes prioritized human use and resource extraction over ecological integrity.

Setting goals, analyzing problems, and developing strategies to solve them was an iterative process. Measurable targets were established to enable the Foundation to track its progress and amend its strategies as necessary. Throughout the planning process, program staff remained aware of the costs of collecting information. They attempted to strike a balance between optimizing grant-making decisions based on the best information available and working to obtain better information.

Multiple stakeholders. Recall Serrano's analysis of the stakeholders in the Terra Nueva problem. The Hewlett Foundation's strategic planning also took

16. These targets were specified in much greater detail than appears in this overview.

into account that it is only one of many stakeholders concerned with the American West. The frame through which the Foundation's Environment Program views the problems facing the West sometimes differs from that of state and federal policy makers, businesses, citizens, interest groups, and other organizations. A collaborative approach to strategic planning drew on the knowledge and resources of these stakeholders and set the groundwork for future collaboration with them.

Advocacy. Foundations and the nonprofit organizations they support have various tools for achieving their goals, including providing direct services (supporting public parks, for example), basic and applied research, and policy advocacy. Advocacy, typically based on applied research, was a major strategy for achieving the goals of the Foundation and its grantees in Western conservation.[17] for example, improving land conservation requires policy changes that create new protected areas and improve management and planning of existing protected lands. The Foundation's grantees, aware of the high cost of purchasing land, found it important to advocate for federal and state funding and incentives for private conservation.

Understanding the many stakeholders in the West is essential to building constituencies supportive of Western conservation. Although other stakeholders' priorities do not necessarily overlap completely with the Foundation's, the Foundation was able to identify opportunities for collaboration with other funders and interest groups. For example, hunters and anglers share the Foundation's interest in expanding land protections that help ensure both more enjoyable sporting and greater ecological integrity.

Stakeholders include governments as well as private interests. After eight years of stalled policy progress at the national level during the Bush administration, the political environment became more favorable to conservation in 2009. The Foundation's advocacy strategies appropriately changed to respond to the Obama administration's conservation-minded Secretaries of Agriculture, Energy, and Interior, and to greater interest in conservation at local levels.

Comparing alternative courses of action. The next step in the Environment Program's strategic planning was to generate and compare different possible courses of action to achieve the outcomes it desired. The Foundation's analysis of the problem led it to embrace a combination of broad West-wide policy changes and work in specific regions, such as the Alberta Tar Sands, where the extraction of oil is particularly damaging to the environment.

Within this broad approach, the Foundation sought the optimal way to maximize the impact of its grants in improving the ecological integrity of the West.

17. Federal law provides constraints on certain activities defined as "attempts to influence legislation," but the kind of advocacy in which the foundation and its grantees engaged is fully compatable with those constraints.

Although we defer a full discussion of the concept of *expected return* until Part 3 of the book, we preview it here in order to complete this example of strategic planning.

An expected return framework helps estimate the effectiveness of dollars spent on particular grant-making strategies in achieving the Foundation's goals. Quantitative expected return analysis involved multiplying estimates of the benefit an intervention would have if it succeeded by the likelihood that it will succeed, and dividing by the costs of the intervention to the Foundation (see Figure 2.4). The expected return for each promising project could thus be compared, and the most cost-effective ones chosen.

Benefit is a monetizable measure of the progress a specific set of grants would make toward the Foundation's overall goal. In this case, the benefit was the number of acres improved multiplied by what expert interviews and scientific studies indicated would be the magnitude of improvement in ecological integrity produced by the grant.

The ***likelihood of success*** is the estimated probability of a particular intervention succeeding. Interviews with stakeholders and experts, and polls by the League of Conservation Voters helped the Foundation calculate likelihoods of success for particular policy changes in the various political jurisdictions encompassed by the West.

For the denominator, the Foundation considered the ***cost*** to the Foundation of achieving the desired outcome. For a strategy to be cost-effective, the cost must be less than the benefit times the likelihood of success—ideally a great deal less. The higher the calculated expected return, the greater the Foundation's "bang for the buck." The Foundation's main costs were the amounts of its grants and the staff resources needed to make and monitor the grants and facilitate collaborations among stakeholders.

A rough comparison of the expected return of various strategies helped the Foundation choose among different possible investments to achieve its conservation goals. The expected return framework helped staff set clear targets and make quantitative comparisons. Staff complemented the rough assumptions necessary for the calculations with continual internal review and external feedback to select the combination of strategies that would most cost-effectively achieve the Program's desired outcomes.

$$\text{Expected return} = \frac{\text{Benefit (area-adjusted integrity improvement)} \times \text{Likelihood of success (\%)}}{\text{Cost (\$)}}$$

FIGURE 2.4 EXPECTED RETURN.

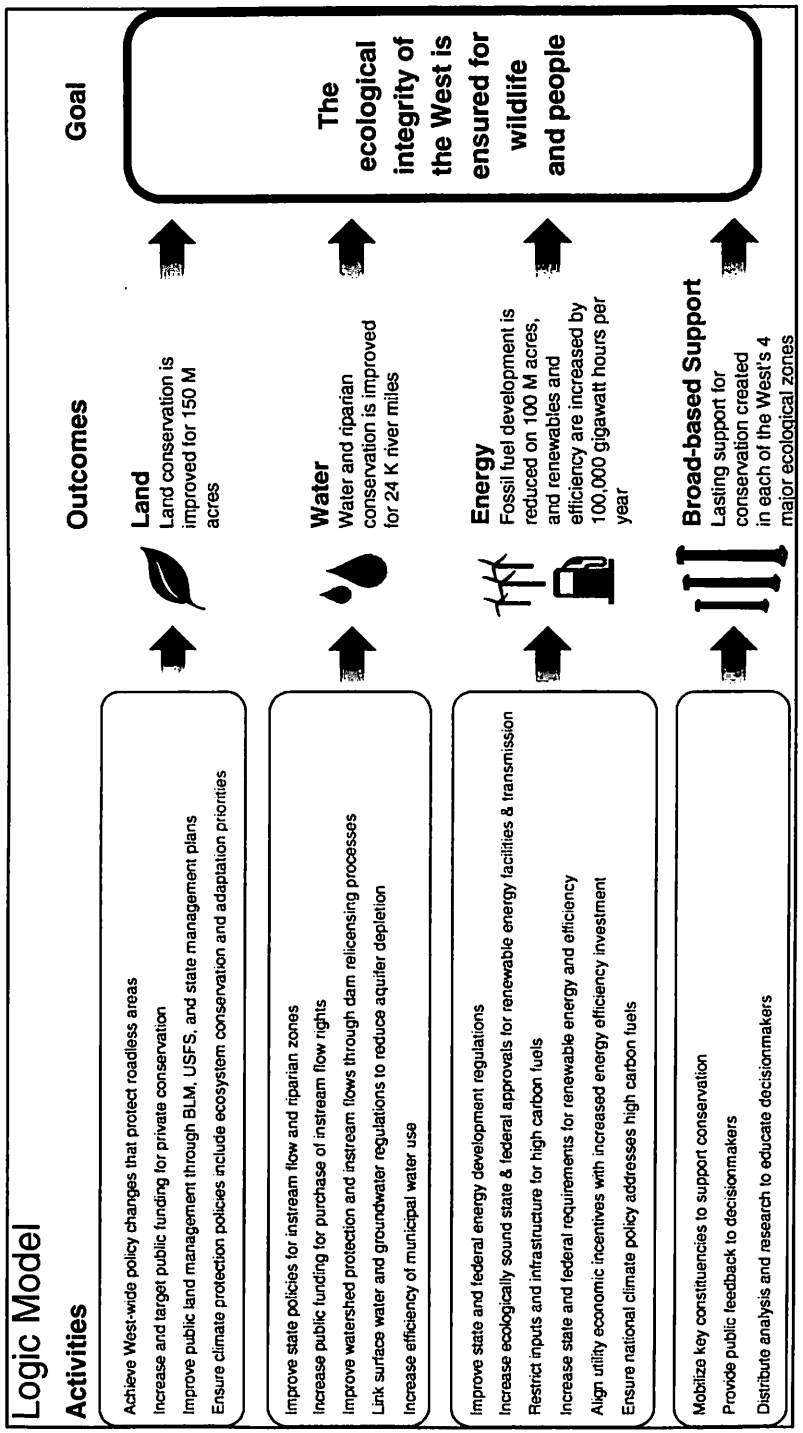

FIGURE 2.5 A STRATEGY, OR LOGIC MODEL, TO ACHIEVE ECOLOGICAL INTEGRITY.

The Strategic Plan, or Logic Model. Figure 2.5 shows the core of the strategic plan, sometimes called a *logic model*, which connects the specific activities the Foundation supports to its outcomes and targets, and ultimately to the goal of ensuring the ecological integrity of the West. As the preceding discussion indicates, a strategic plan is developed by working backward from the general goal to more specific outcomes and then to the activities necessary to produce those outcomes. Of course, a strategy is only a working hypothesis that must remain flexible to seize high-return opportunities and respond to unanticipated threats to critical habitat or migration corridors. Although details of the strategy were modified in the light of changing circumstances within a year of its adoption, it continues to provide the framework for the Foundation's work in the American West.

Targets, grantmaking, monitoring, and evaluation. Foundation staff determined outcome metrics for each of the activities and outcomes—some of which are measurable on an annual basis, others of which may take a number of years to assess.

Having identified the activities necessary to work toward the goal, Foundation staff then identify the organizations that can carry out the activities. Staff members engage in due diligence, make grants, monitor organizations' performance, and evaluate progress toward their goals.

We will discuss the need for feedback in decision making later in the book. For now, suffice it to say that feedback is vital to any decision maker's long-term effectiveness. Monitoring and evaluation will help the Foundation respond to changing conditions and problems as they arise. The Foundation's explicit metrics and targets are helpful in measuring the contribution of each grant to achieving its overall goal. A rigorous evaluation of the program as a whole will document successes and lessons learned for use in the next round of strategic planning.

Returning to the overall topic of this chapter, the Hewlett Foundation's strategic plan for the West provides an illustration of how analyzing the problems to be solved, examining relevant interests, and comparing the consequences of different courses of action can guide proactive attempts to move the world in a certain desired direction.