INTRODUCTION

Policy analysis is a social and political activity. True, analysts take moral and intellectual responsibility for the quality of their policy-analytic work. But policy analysis goes beyond personal decision making. First, the subject matter concerns the lives and well-being of large numbers of their fellow citizens. Second, the process and results of policy analysis usually involve other professionals and interested parties: it is often done in teams or officewide settings; the immediate consumer is a "client" of some sort, such as a hierarchical superior; and the ultimate audience will include diverse subgroups of politically attuned supporters and opponents of the analysts' work. All of these facts condition the nature of policy analysis and have a bearing on the nature of what is meant by "quality work."

A policy analyst can work in any number of positions. Once upon a time, the term implied a rather wonkish individual who worked in a large government bureaucracy, serving up very technical projections of the possible impacts of one or more policy alternatives to some undersecretary of planning. No longer. Today's policy analysts help in planning, budgeting, program evaluation, program design, program management, public relations, and other functions. They work alone, in teams, and in loose networks that cut across organizations. They work in the public, nonprofit, and for-profit spheres. Although their work is ideally distinguished by transparency of method and interpretation, the analysts themselves may explicitly bring to their jobs the values and passions of advocacy groups as well as the technical expertise of "neutral" civil

servants. The professional networks in which they work may contain—in most cases, do contain—colleagues drawn from law, engineering, accounting, and so on, and in those settings the policy-analytic point of view has to struggle for the right to counter—or, better yet, synthesize—the viewpoints of these other professionals. Although policy-analytic work products typically involve written reports, they may also include briefings, slide presentations, magazine articles, and television interviews. The recipients of these products may be broad and diffuse audiences as well as narrowly construed paying clients or employers.

The advice in this handbook is directed both to policy analysts in practice and to students and others who, for whatever reasons, are attempting to look at the world through the eyes of a practitioner.

THE EIGHTFOLD PATH

Policy analysis is more art than science. It draws on intuition as much as on method. Nevertheless, given the choice between advice that imposes too much structure on the problem-solving process and advice that offers too little, most beginning practitioners quite reasonably prefer too much. I have therefore developed the following approach, which I call the Eightfold Path:

- Define the Problem
- Assemble Some Evidence
- Construct the Alternatives
- Select the Criteria
- Project the Outcomes
- Confront the Trade-offs
- Decide!
- Tell Your Story

These steps are not necessarily taken in precisely this order, nor are all of them necessarily significant in every problem. However, an effort to define the problem is usually the right starting place, and telling the story is almost inevitably the ending point. Constructing alternatives and selecting criteria for evaluating them must surely come toward the beginning of the process. Assembling some evidence is actually a step that recurs throughout the entire process, and it applies particularly to efforts

to define the problem and to project the outcomes of the alternatives being considered.

The primary utility of this structured approach is that it reminds you of important tasks and choices that otherwise might slip your mind; its primary drawback is that, taken by itself, it can be mechanistic.

The Problem-Solving Process

The problem-solving process—being a process of trial and error—is iterative, so you usually must repeat each of these steps, sometimes more than once.

The spirit in which you take any one of these steps, especially in the earliest phases of your project, should be highly tentative. As you move through the problem-solving process, you will probably keep changing your problem definition, as well as your menu of alternatives, your set of evaluative criteria, and your sense of what evidence bears on the problem. With each successive iteration you will become a bit more confident that you are on the right track, that you are focusing on the right question, and so on. This can be a frustrating process, but it can also be rewarding—if you learn to enjoy the challenges of search, discovery, and invention.

Some of the guidelines are practical, but most are conceptual. Most of the concepts used will seem obvious, but there are exceptions. First, technical terms are sometimes employed. Second, some commonsense terms may be used in a special way that strips them of certain connotations and perhaps imports others. For the most part, all these concepts will become intelligible through experience and practice.

The concepts come embedded in concrete particulars. In real life, policy problems appear as a confusing welter of details: personalities, interest groups, rhetorical demands, budget figures, legal rules and interpretations, bureaucratic routines, citizen attitudes, and so on. Yet the concepts described in this handbook are formulated in the abstract. You therefore need to learn to "see" the analytic concepts in the concrete manifestations of everyday life.

Caution: sometimes, some steps are already determined. Suppose your client says, "We need an extra million dollars to run this program in

the next budget year: find it." Does the Eightfold Path apply to this "analysis"? In a limited way. The client has already defined the problem and narrowed the relevant criteria very tightly. There won't be much creative scope for you when it comes to those steps. But all the other steps are likely to be relevant.

This challenge to "find it" is a simplified version of a more complex challenge—"Design it," as in "Figure out [that is, 'design'] a way to protect this subway system from terrorist attack." Here, too, the problem definition step has already been settled by the client, though the other steps are likely to get the creative juices flowing. Ideas for dealing with design problems in general are introduced in the section headed "Step Three: Construct the Alternatives."

Your Final Product

So what will your final product look like? Here is a very rough sketch of a typical written policy-analytic report:

- In a coherent narrative style you describe some problem that needs to be mitigated or solved.
- You lay out a few alternative courses of action that might be taken.
- To each course of action you attach a set of projected outcomes that you think your client or audience would care about, suggesting the evidentiary grounds for your projections.
- If no alternative dominates all other alternatives with respect to all the evaluative criteria of interest, you indicate the nature and magnitude of the trade-offs implicit in different policy choices.
- Depending on the client's expectations, you may state your own recommendation as to which alternative should be chosen.

The Spirit of the Eightfold Path

The spirit of the Eightfold Path is, I hope, economizing and uplifting. Analyzing public policy problems is a complex activity. It is easy to get lost, to waste a lot of time, to become demoralized. Other manuals and textbooks in policy analysis are primarily concerned that you get the analysis "right," in some sense. This one should help in that respect, too. But, in addition, I hope that this handbook will help you to get it done with reasonable efficiency—and with a minimum of anxious confusion.

Finally, just as policy analysis originates in politics, so it concludes in politics. Political life has two sides: channeling conflict and building community. Policy analysis serves both sides. It channels conflict by showing that some arguments, and their proponents, are in some sense superior to others and deserve to win out. But it helps to build community by marking off potential common ground as well. This common ground is defined by the rules and conventions of rational discourse—where opponents may employ analytical procedures to resolve disagreements, or where they may discover that at least some seemingly irreducible values conflicts can be recast as dry-as-dust technical disagreements over how much higher a probability Policy A has than Policy B for mitigating Problem P.

OVERVIEW OF THE BOOK

This book is a compilation of many component parts. The primary component is Part I, describing the Eightfold Path and recommending heuristics to help you negotiate it.

Part II focuses on one particular step in the Eightfold Path: assembling evidence. It first appeared thirty-five years ago as a journal article, but I have since modified it and tried to integrate it better into the overall book in terms of both style and content. I include it because its objective is, I think, unique among the many prescriptive works in the social sciences and in journalism about data gathering and interpretation: it is, above all, concerned with using the researcher's time and energy efficiently.

Part III also addresses a specialized topic in policy analysis not dealt with in other works: making use of ideas—and specimens of "smart practices"—that are to be found in other sites. Imitation and adaptation are standard routes to progress (albeit occasionally, to regress) in other areas of life, so why not in public policy?

In previous editions of this book, the third appendix offered a summary of "semantic tips." It may not surprise readers to learn that semantic pitfalls abound on the Eightfold Path of policy analysis, but it will surely be more surprising that there are many semantic tricks to help policy analysis along. Tips about these pitfalls and the tricks that can help to

bridge them appear throughout this volume, and these practical recommendations—no longer collected in a separate appendix—are now highlighted in context by means of a new semantic tips icon that appears at the beginning of each such discussion in Parts I, II, and III.

Appendix A contains the preface and summary sections of a lengthy study by researchers at the RAND Corporation on the relative worth of mandatory minimum sentences for drug dealers. I include this material because many students and fellow teachers have voiced the wish for a specimen of real, high-quality policy analysis, along with some commentary to highlight its most effective characteristics. Institutionally, RAND is the oldest policy research organization in the country, if not the world. It has a deserved reputation for excellence. It also has a tradition of doing cost-effectiveness analysis, beginning with work for the military and, in the past two or three decades, branching into domestic policy. It is therefore particularly fitting to make use of a specimen produced by RAND.

Why this particular specimen? Not because its conclusions are necessarily correct; I do not know enough about the drug policy field to have an opinion. I do know that these are highly respected researchers in the field and that the work selected here highlights the fifth, "Project the Outcomes," step in policy analysis—which I pronounce "the hardest step," mostly because of the uncertainties involved in projecting the future. The chosen specimen wrestles in an interesting way with such uncertainties. It also takes a creative approach to defining alternatives. And it illustrates clearly how to integrate strictly analytical work into a larger policy discussion rife with the value disagreements that are inevitably present in a democratic, pluralistic society.

Appendix B, "Things Governments Do," is a condensed survey of eleven types of governmental instruments for intervening in society. This new edition also offers both a new Appendix C, "Understanding Public and Nonprofit Institutions: Asking the Right Questions," and an Appendix D, "Strategic Advice on the Dynamics of Political Support."

I have tried to keep the style simple and the text short. But the topics covered are numerous and complicated. The result is that the book is in some respects very dense. My students tell me that the book should be treated not just as a quick and pleasurable read, which of course it is, but as a reference volume to be experienced again and again for its delicious subtleties. No doubt they are right.

A Practical Guide for Policy Analysis

PART

I

THE EIGHTFOLD PATH

The analytic work in problem-solving generally proceeds in a certain direction, from defining the problem at the beginning all the way to making a decision and explaining it at the end. But remember, this is a process much given to reconsidering, reviewing, changing your mind—in other words, retracing your steps on the path before starting out once more. Also, in some cases, the client or, perhaps, the political situation has already narrowed and focused the analytical task to such a degree that you need not even bother thinking through some of the steps. The exposition that follows lays out a generic process that must be adapted to a particular context.

STEP ONE: DEFINE THE PROBLEM

Your first problem definition is a crucial step: it gives you both a reason for doing all the work necessary to complete the project and a sense of direction for your evidence-gathering activity. And in the last phases of the policy analysis, your final problem definition will probably help you structure how you *tell your story.*

Think of Deficit and Excess

Semantic Tip It often—but not always—helps to think in terms of deficit and excess. For instance:

- "There are too many homeless people in the United States."
- "The demand for agricultural water is growing faster than our ability to supply it at an acceptable financial and environmental cost."

- "California's population of school-age children is growing at 140,000 per year, and our ability to develop the physical facilities in which to educate them is not growing nearly as fast."

It often helps to include the word *too* in the definition—as in "too big," "too small," "growing too slowly," "growing too fast." These last two phrases (about "growing") remind us that problems deserving our attention don't necessarily exist today but are (at least potentially) in prospect for the future, whether near or distant.

However, it does not help to think in terms of deficit and excess when your problem is an already well-structured decision choice—for example, "Dump the dredging spoils either in the Bay or somewhere out in the Pacific Ocean." Nor does it help if your challenge is to invent *any* way to accomplish some defined objective—for example, "Find some grant funds to close the anticipated gap between revenues and expenditures." These decision- and invention-type challenges are problems *for* the policy analyst but are not the substantive sort of problems I am addressing in this section.

Make the Definition Evaluative

Remember that the idea of a "problem" usually means that people think there is something wrong with the world, but note that *wrong* is a very debatable term. Not everyone will agree that the facts you (or others) have defined as a problem really do constitute a problem, for each person may apply a different evaluative framework to these facts. Unfortunately, there are no obvious or accepted ways to resolve philosophical differences of this type.

A common philosophical as well as practical question is this: "What private troubles warrant definition as public problems and thereby legitimately raise claims for amelioration by public resources?" It is usually helpful to view the situation through the "market failure" lens (Weimer and Vining 2004, chap. 5).[1] In its simplest formulation, market failure

1. For an analysis of most traditional market failures in transaction cost terms, see Zerbe and McCurdy 1999, which also emphasizes the rich variety of interventions besides those undertaken by government to remedy traditionally conceived "market failures."

occurs when the technical properties of a good or service have one of the following effects:

- Making it hard to collect payment from all the potential beneficiaries—for instance, the large number of people who profit, albeit indirectly, from advances in basic science
- Making it hard to collect from the beneficiaries of consumption the true economic cost of making use of the good or service—such as the fresh air that vehicle owners use as a sink for their auto emissions
- Making it hard for consumers (and sometimes suppliers) to know the true qualities of the good or service they are acquiring—for instance, many repair-type services, including those performed by physicians as well as those performed by auto mechanics
- Making the cost of producing the marginal unit lower than the average cost within the relevant range of demand—such as a magazine article distributed via the Internet

It is impossible to overestimate the importance of this point, for in most—though not all—situations where no actual market failures can be identified, people's private troubles *cannot* typically be ameliorated by even the most well-intentioned governmental interventions. And even when some amelioration is possible, there are usually many adverse side effects. In some cases, it may nevertheless be worthwhile to pay the price of these side effects, but such calculations must be done carefully and scrupulously.

Besides market failures, the main situations in which private troubles can warrant definition as public problems are these:

- Breakdowns of systems, such as family relationships, that occur largely outside markets
- Low living standards that arise precisely because markets do function well and do not reward individuals very generously if they lack marketable talents or skills
- The existence of discrimination against racial and other minorities
- The failure of government to function well in areas where it is traditionally expected to act effectively (e.g., in providing public schools)

Using "issue rhetoric." Usually, the raw material for the evaluative aspect of your initial problem definition comes from your client and derives from the ordinary language of debate and discussion in the client's political environment—language that I call generically "issue rhetoric." Such rhetoric may be narrowly confined to a seemingly technical problem or broadly located in a controversy of wide social interest. In either case, you have to get beyond the rhetoric to define a problem that is analytically manageable and that makes sense in light of the political and institutional means available for mitigating it.

Use the raw material of issue rhetoric with care. It often points to some condition of the world that people don't like or consider "bad" in some sense, such as "teenage pregnancy," "media violence," or "global warming." These evaluations do not necessarily need to be taken at face value. You will sometimes wish to explore the philosophical and empirical grounds on which you, your client, or others in your eventual audience should or should not consider the alleged condition "bad." Furthermore, issue rhetoric may point to some alleged—but not necessarily real—cause of the troubling condition, such as "welfare" or "human wastefulness."

Issue rhetoric often has a partisan or ideological flavor. Although Americans cluster toward a mixed-ideology and pragmatic center, issue rhetoric is created by the more passionate and often more articulate individuals who gravitate closer to the extremes. The great ideological divide in most developed democracies concerns the role of government assistance and regulation in solving problems relative to reliance on self, kin, and neighbors. Self-reliance is generally presumed to be the ideal, but this is a rebuttable presumption. "Liberal" issue rhetoric typically offers many rebuttals, usually involving distrust of "the market," but only some of these rebuttals are grounded in realistic understanding of how markets do and do not work. "Conservative" issue rhetoric sometimes offers thoughtless defenses of "the market" but can also fall silent when favored business interests seek protectionist legislation. Because government as an institution is the chief alternative to private and community problem-solving, liberals and conservatives alike ideologize the question of just how competent and trustworthy it is. Selective perception abounds on both sides of this argument.

Generalities originating in issue rhetoric only sometimes suffice to settle concrete issues of policy choice and policy design, although economic theories of market failures and imperfections can often tell us when not to rely on the market, and Public Choice theories of government failure can often tell us when not to rely on the government (Weimer and Vining 2004; Glazer and Rothenberg 2001). Policy analysis typically bridges all political ideologies by reliance on the normative standard of "maximizing welfare" and on social science theorizing about the comparative advantages of different institutions for different purposes. Thus you want not simply to echo the issue rhetoric in your problem definition, but to use it as raw material for a provisional problem definition that you hope will prove analytically useful.

Note also that some issue labels may signify more than one problem. Depending on the audience, for example, "teenage pregnancy" may connote any or all of the following conditions: sexual immorality, the blighting of young people's and their children's life chances, exploitation of taxpayers, and social disintegration. Usually you will want to determine a primary problem focus, to ensure that the analysis does not get out of hand. But if the problems aren't too complicated, you may feel willing to define more than one.

Quantify If Possible

Your problem definition should, insofar as possible, include a quantitative feature. Assertions of deficit or excess should come with *magnitudes* attached. How big is "too big"? How small is "too small"? How about "too slowly" or "too fast"? With regard to homelessness, how many homeless people are there in the United States? Or in the case of agricultural water, how many acre-feet of water are used now, and how does that amount compare with the demand in some specified future year (given certain assumptions about water pricing)? Exactly what is "our ability to develop physical facilities," and how do we expect it to grow, or shrink, over time?

If necessary, gather information to help you calibrate the relevant magnitudes. (See the discussion under "Step Two: Assemble Some Evidence.")

In many or most cases, you will have to estimate—or, more likely, "guesstimate"—the magnitudes in question. Sometimes you should

furnish a *range* as well as a *point* estimate of magnitudes—for example, "Our best guess of the number of homeless persons in families is 250,000, although the truth could lie between 100,000 and 400,000."

Diagnose Conditions That Cause Problems

Some problematic conditions are not experienced as troublesome per se by citizens but are perceived by them, or by analysts working on their behalf, to be causes of trouble. It is sometimes useful to diagnose at least one alleged condition of this type and to define it as a problem to be mitigated or removed—as in, "One of the problems in the air pollution area is that states have not been willing to force motorists to keep their engines tuned up and their exhaust systems in proper order."

Semantic Tip Note that this sort of problem definition is not merely descriptive but also diagnostic. It implicitly asserts that some condition, which people may or may not find troubling in itself, is an important cause of some other condition that is indeed troubling. Problem definitions that pretend to such diagnostic power can be useful, but they can also be treacherous. Suppose, after all, that the causal diagnosis is mistaken or misleading—for example, that states' unwillingness to enforce engine maintenance routines is *not* in fact a very important cause of air pollution. Because "definition" in some contexts connotes legitimate arbitrariness ("I'll define *justice* to mean . . .") the causal claims implicit in diagnostic problem definitions can easily escape needed scrutiny. (See "Step Five: Project the Outcomes" for further discussion.)

Identify Latent Opportunities

A special kind of problem is an opportunity missed. Is it not rather small-minded to think of policy analysis as devoted merely to the amelioration of "problems"? May policy analysis not rise above the tedious and uninspiring business of patching and fixing? Can we not aspire to a world in which we can identify opportunities to do creative—not to say wonderful—things? "If it ain't broke, don't fix it" is a confining idea, and certainly policy analysts, policymakers, and public managers ought not to allow the "problem" focus to restrict the search for plausible

opportunities. Unfortunately, the working agenda of most policy professionals is set by complaints, threats, worries, and troubles—often leaving little time or energy to think about improvements that no one has identified as needful. Still, if latent opportunities are really lying around, it would be a pity to ignore them.

Where do we find opportunities for creative policy improvements that haven't first been identified by complaints, threats, and so on? Little academic or technical theory is available to answer this question. But Box I-1 (p. 8) contains a list that is suggestive.

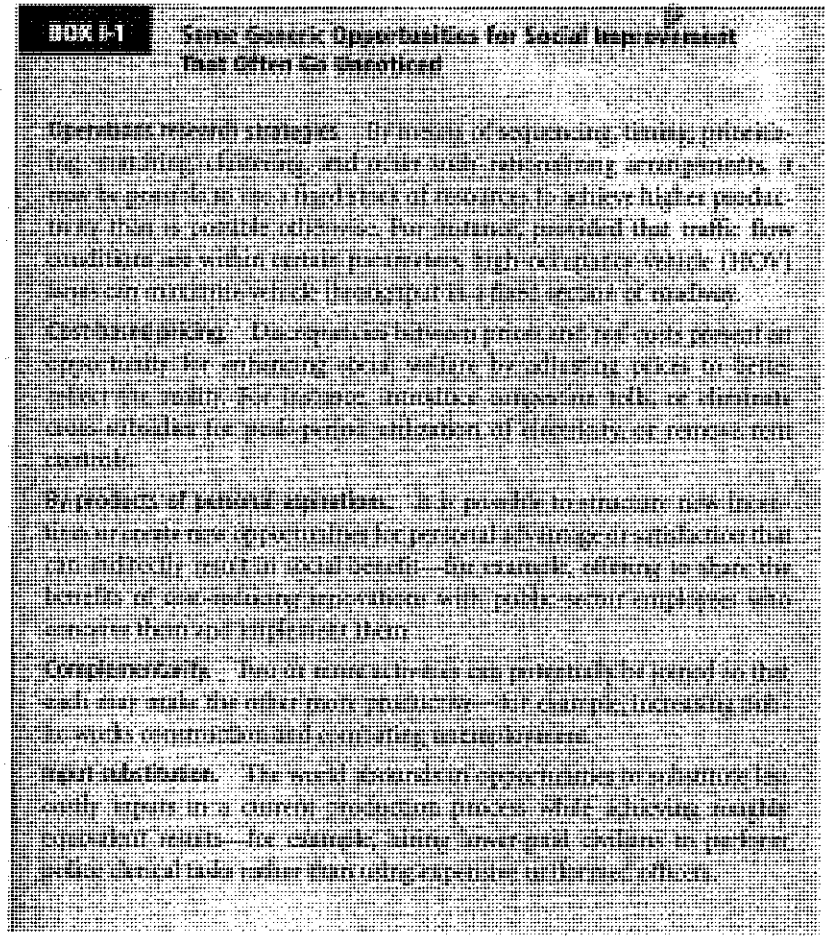
Avoid Common Pitfalls in Problem Definition

Problem definition is a step beset by at least two dangerous pitfalls.

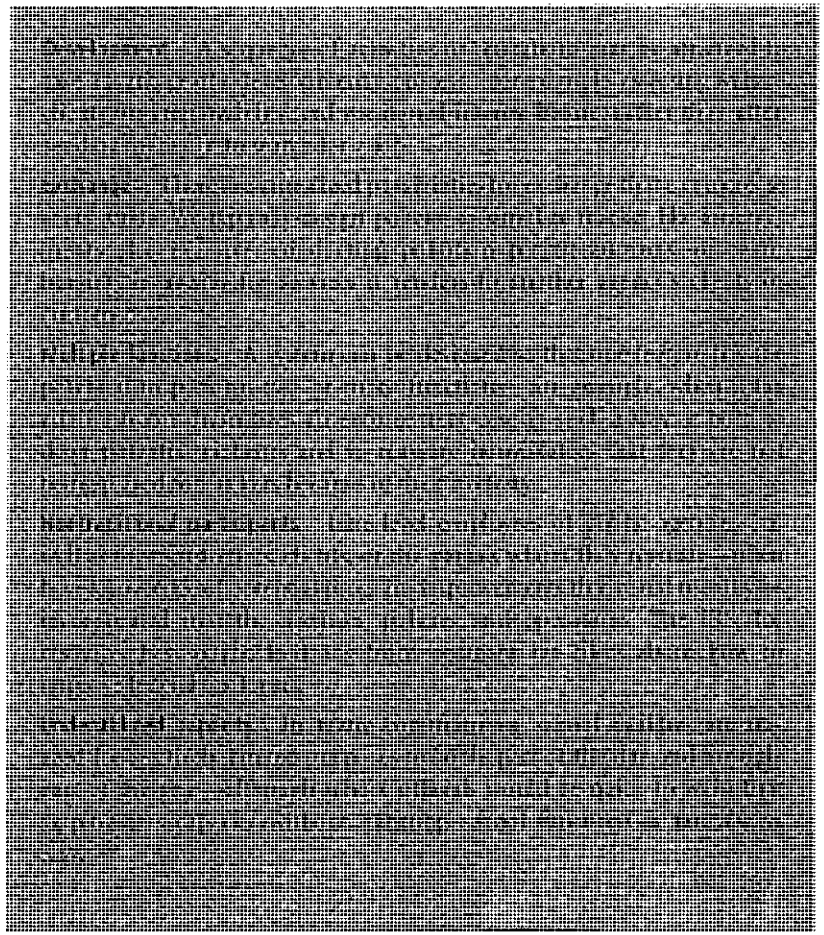
Semantic Tip ***Defining the solution into the "problem."*** Your problem definition should not include an implicit solution introduced by semantic carelessness. Projected solutions must be evaluated empirically and not legitimated merely by definition. Therefore, keep the problem definition stripped down to a mere description, and leave open where you will look for solutions.

- *Don't say:* "There is too little shelter for homeless families." Inadvertently implying that "more shelter" is the best solution may inhibit you from thinking about ways to prevent families from becoming homeless in the first place. *Try instead:* "Too many families are homeless."
- *Don't say:* "New schools are being built too slowly." Simply assuming that "more schools" is the solution may inhibit you from thinking about ways to use existing facilities more efficiently. *Try instead:* "There are too many schoolchildren relative to the currently available classroom space."

A tip-off that you're probably smuggling an implicit solution into the problem definition is to hear yourself saying, "Aha, but that's not the real problem; the real problem is . . ." While there are better and worse ways to conceptualize a problem—or to solve a problem—it stretches ordinary usage too much to say that one problem could be "more (or less) real" than another.



Accepting too easily the causal claims implicit in diagnostic problem definitions. I suggested earlier that conditions that cause problems may also be problems themselves. However, the causes must be real, not merely assumed. You have to evaluate the causal chain that goes from the situation itself to the bad effects it is alleged to cause, and to convince yourself that the causal relationship is real. For instance, for some people, "cocaine use" is not a problem in itself, but it may become a problem if it *leads to* crime, poor health, family disintegration, and so on. But does it lead to these outcomes, and to what degree? The evidence on this question should be evaluated very carefully before you decide that it's okay to work with a problem definition involving "too much cocaine use."



Iterate

Problem definition is a crucial step. But because it is hard to get it right, you may take that same step again and again. Also, over the course of your analytic work, your empirical and conceptual understanding will evolve. For instance, you may start out thinking that the main problem is "too many halfway houses for the mentally ill in our city" but end up

concluding that the main problem is how badly some of them are managed.[2] Also, as you begin to rule out alternative approaches to solving or mitigating your problem, you will probably want to sculpt the problem definition so that, in the end, you and the political system will have some chance of attacking the problem successfully. Finally, if you are working in an office or agency context, you will implicitly be negotiating a mutually acceptable problem definition with your analyst colleagues and your hierarchical superiors.[3]

STEP TWO: ASSEMBLE SOME EVIDENCE

All of your time doing a policy analysis is spent on two activities: thinking (sometimes aloud and sometimes with others) and hustling data that can be turned into evidence. Of these two activities, thinking is generally the more important, but hustling data takes much more time: reading documents, hunting in libraries, poring over studies and statistics, interviewing people, traveling to interviews, waiting for appointments, and so on.

The real-world settings in which policy analysis is done rarely afford the time for a research effort that would please a careful academic researcher. In fact, time pressure is probably almost as dangerous an enemy of high-quality policy analysis as politically motivated bias, if not more so. Therefore, it is essential to economize on your data collection activities. The key to economizing is this: try to collect only those data that can be turned into "information" that, in turn, can be converted into "evidence" that has some bearing on your problem.

2. This happened to a graduate student group at the Goldman School whose client was the Oakland Police Department. Members of the group struggled hard to escape the initial assumptions held by their client and eventually to refocus their work.
3. Some analysts also claim that it is simply not worthwhile to define as "problems" conditions that cannot be ameliorated: "Problems are better treated as opportunities for improvement; defined problems, as problems of choice between alternative means to realize a given opportunity. The process of problem definition would then be one of search, creation, and initial examination of ideas for solution until a problem of choice is reached." See Dery 1984, 27.

Semantic Tip For the logically minded, here are some definitions: *Data* are facts—or, some might say, representations of facts—about the world. Data include all sorts of statistics but go well beyond statistics, too. Data also include, for instance, facts about an agency manager's ability to deal constructively with the press. *Information* consists of data that have "meaning," in the sense that they can help you sort the world into different logical or empirical categories. The prevalence of cigarette smoking in five different countries constitutes data, but these data become information when you decide it is interesting to array the countries comparatively (e.g., from lowest to highest prevalence). *Evidence* is information that affects the existing beliefs of important people (including yourself) about significant features of the problem you are studying and how it might be solved or mitigated. Differential prevalence of smoking, for instance, can become evidence bearing on hypotheses concerning different levels of concern about personal health across countries.

You need evidence for three principal purposes, all of which are relevant to the goal of producing realistic projections of possible policy outcomes. One purpose is to assess the nature and extent of the problem(s) you are trying to define. A second is to assess the particular features of the concrete policy situation you are engaged in studying. For instance, you may need to know—or guess—about agency workloads, recent budget figures, demographic changes in a service area, the political ideology of the agency chief, the competency of the middle-level managers in the agency, and the current attitudes of some other agency that nominally cooperates with yours on some problem. The third purpose is to assess policies that have been thought, by at least some people, to have worked effectively in situations apparently similar to your own, in other jurisdictions, perhaps, or at other times. (Sometimes these situations will have been evaluated statistically and sometimes not: see Part III, " 'Smart (Best) Practices' Research: Understanding and Making Use of What Look Like Good Ideas from Somewhere Else.")

Because each of these purposes becomes salient in different phases of the policy analysis process, this second, "Assemble Some Evidence" step on the Eightfold Path will be taken more than once, but with a different focus each time.

Think Before You Collect

Thinking and collecting data are complementary activities: you can be a much more efficient collector of data if you think, and keep on thinking, about what you do and don't need (or want) to know, and why. The principal—and exceedingly common—mistake made by beginners and veterans alike is to spend time collecting data that have little or no potential to be developed into evidence concerning anything you actually care about. People often do this because running around collecting data looks and feels productive, whereas first-rate thinking is hard and frustrating. Also, when they see you busily collecting data, the people paying for your work tend to be reassured that somehow they are getting their money's worth.

The value of evidence. Since most evidence is costly to produce, you must weigh its likely cost against its likely value. How is its likely value to be estimated? The answer may be cast in a decision-analytic framework (decision trees), though you should remember that the process of making a decision involves a great many elements prior to the moment of actual choice, such as defining a useful problem, thinking up better candidate solutions, and selecting a useful model. In general, the value of any piece of evidence depends on these factors:

- The likelihood that it will cause you to substitute some better decision for whatever decision you would have made without it (which might have been an "acceptable" decision in and of itself)
- The likelihood that the substituted decision will, directly or indirectly, produce a better policy outcome than the outcome that would have been produced by the original decision
- The magnitude of the difference in value between the likely-to-be improved outcome and the original outcome

The utility of an educated guess. It is surprising how well you can do in many cases by gathering no evidence at all but simply sitting down and thinking something through and then making some serious educated guesses. There is nothing shameful about acting on such guesstimates and thereby conserving your data-collecting time and energies for answering questions for which good evidence is really necessary (see Part II, "Assembling Evidence").

A helpful check on your thinking, to avoid collecting useless data, is to ask yourself the following questions before embarking on some data collection venture:

- "Suppose the data turn out to look like so-and-so as opposed to thus-and-such. What implication would that have for my understanding of how to solve this problem?"
- "Compared to my best guess about how the data will look once I've got them, how different might they look if I actually took the trouble to get them?"
- "How much is it worth to me to confirm the actual difference between what I can guess and what I can learn about the world by really getting the data?"

It is this sort of critical attitude about the value of expensive data collection (especially adhoc surveys!) that often leads good and experienced policy analysts to make do with back-of-the-envelope estimates. However, none of this reasoning is meant to be an excuse for shirking the job of getting good data—and sometimes lots of them, at huge costs in time and money—when you've convinced yourself that the investment really will pay off. There's an obvious and critical difference between justifiable and unjustifiable guesstimates.

Review the Available Literature

There hardly exists a problem on whose causes and solutions some academic discipline or professional association is not doing research. It is easy to find journals and various professional publications disseminating research results, theories, case studies, the musings of experienced practitioners, and so on. The Internet brings much of this literature to your desktop.

Advocacy organizations often publish a great deal of interesting work and may take special pains to disseminate their findings on the Internet. However, because advocacy-based analyses are not, in general, as reliable

as more disinterested work, there is a danger of relying too much on such sources just because they are readily available.

Survey "Best Practices"

The chances are that the problem you are studying is not unique, and that policymakers and public managers in other jurisdictions, perhaps not very different from the one you are studying, have already dealt with it in some fashion. See if you can track down some of these past solutions and extrapolate them to the situation you are studying. Bear in mind, however, that the extrapolation process is complicated (see Part III, " 'Smart (Best) Practices' Research").

Use Analogies

Sometimes it pays to gather data about things that, on the surface, seem quite unlike the problem you are studying but, on a deeper level, show instructive similarities. For instance, your understanding of how a merit pay plan for compensating managers in the public sector might work could perhaps be improved by seeing how similar schemes work in the private sector. Or, if you are working on the problem of how a state can discipline, and perhaps disbar, incompetent attorneys, you might usefully spend a good deal of your time learning about how the medical profession handles problems of physician incompetence. If you are working on how to reduce neighborhoods' resistance to accepting low-income housing projects, you could usefully look into the literature on community resistance to accepting solid-waste incinerators.

As these examples suggest, some analogies are easier to perceive, and to make sense of, than others. It takes a little imagination to see an instructive analogy and, occasionally, a little daring to try to convince others to recognize both its usefulness and its inevitable limitations.

Start Early

You are often dependent on the very busy schedules of other people whom you ask to furnish information or opportunities for interviews. It is extremely important to submit requests for information—and especially for interviews—well in advance of when you want to have completed the data collection. (For a useful description of how to conduct literature reviews, library searches, phone interviews, and personal interviews, see Weimer and Vining 2004, chap. 13; see also Part II, "Assembling Evidence.")

Touch Base, Gain Credibility, Broker Consensus

The process of assembling evidence inevitably has a political as well as a purely analytical purpose. Sometimes it entails touching base with potential critics of your work so they will not be able to complain later that you have ignored their perspectives. Conversely, by making yourself known to potential supporters of your work, you may be able to create a cadre of defenders.

A more complex objective, where appropriate, might be to blend policy analysis with the process of improving a policy idea or decision during the course of implementation. (See the following discussion of "improvability" as a practical criterion.) This objective entails obtaining "feedback" from participants, usually in an iterative process, and sharing some of your own reactions with them. You thereby become more of a partner in the process than an outside observer and diagnostician. An even more complex and challenging role would be for you to become a particular type of "partner," a facilitator and broker, whether by acting as a conduit from one person to another or by convening meetings and other gatherings.

Free the Captive Mind

In exchange for access to data and a ready-made worldview, researchers sometimes uncritically accept problem definitions and preferred solutions from kindly informants (not to mention from paying clients or employers). To counter such temptations, be sure to make contact with individuals or factions whom you would expect to disagree—the more sharply the better—with those informants. A time-saving, but only partial, substitute is to ask your kindly informants, "Who might object strongly to your point of view about this, and why might they do so?"

STEP THREE: CONSTRUCT THE ALTERNATIVES

By *alternatives* I mean something like "policy options," or "alternative courses of action," or "alternative strategies of intervention to solve or mitigate the problem."

Beware a Linguistic Pitfall

Semantic Tip Specifying alternatives does not necessarily signify that the policy options are mutually exclusive. Policy analysts use "alternative" ambiguously: sometimes it means one choice that implies foregoing another, and sometimes it means simply one more policy action that might help to solve or mitigate a problem, perhaps in conjunction with other alternatives. You should be aware of the ambiguity in other people's usage, and in telling your story (Step Eight) you should be sure that no such ambiguity enters your own usage.

Sometimes you won't be entirely sure whether two alternatives are or are not mutually exclusive. For instance, although the mayor may have promised enough money to either fix potholes or provide homeless shelters (but not both), you may have made such a great case for both programs that the mayor may decide to increase the budgetary allocation.

Start Comprehensive, End Up Focused

In the last stages of your analysis, you won't want to be assessing more than two or three principal alternatives, but in the beginning, you should err on the side of comprehensiveness. Make a list of all the alternatives you might wish to consider in the course of your analysis. Later on, you will discard some obvious losers, combine others, and reorganize still others into a single "basic" alternative with one or more subsidiary "variants." For your initial list, though, where should you turn for ideas?

One starting point would be to note the alternatives that key political actors are actively proposing or seem to have on their minds. These may include prominent people's pet ideas, institutions' inventories of "off-the-shelf" proposals that simply await a window of opportunity, and prepackaged proposals that political ideologues are perennially advocating. Then you could try to *invent* alternatives that might prove to be superior to the alternatives currently being discussed by the key political actors. It's good to brainstorm, to try to be creative—but don't expect that you will necessarily produce much better ideas than those that other people have already advanced.

One way to coax your creativity is to refer to the checklist in Appendix B, "Things Governments Do." For each entry on the list, ask yourself: "Might it make sense to try some version of this generic strategy to help

mitigate this problem?" Because it is a comprehensive list, the answer with respect to any single strategy will usually be no. Going through the list systematically is worthwhile, however. Because the list is not very long, with experience you will need to spend only a few minutes to decide whether any ideas there might be worth considering further. (See also the very valuable discussion on generic policy instruments in Weimer and Vining 2004, chap. 10.)

Semantic Tip Always include in your first approach to the problem the alternative "Let present trends continue undisturbed." You need to do this because the world is full of naturally occurring, ongoing changes, some of which may mitigate the problem on which you are working. (Note that I am not characterizing this alternative as "Do nothing." It is not possible to do nothing or to "not decide." Most of the trends in motion will probably persist and alter the problem, whether for better or for worse.)

To see if "natural" change will affect the scope of the problem, inspect its most common sources in the public policy environment: (1) political changes following elections, as well as changes induced by the prospect of having to contest an election; (2) changes in unemployment and inflation rates that accompany the business cycle; (3) the changing "tightness" or "looseness" of agency budgets caused by overall taxing and spending policies; (4) demographic changes, such as population migration patterns and population "bulges" moving through certain age levels; and (5) changing technologies. In most cases, however, this "let-present-trends-continue" option will drop out of your final analysis. It follows that if you do your problem definition work well, you will end up with an important problem in your sights that in most cases can be mitigated to some degree by purposive action.

Model the System in Which the Problem Is Located

We often think about alternative approaches to the problem as possible *interventions* in the system that holds the problem in place or keeps it going. Logically, it is not necessary to model the causes of a problem in order to cure it—pharmaceutical manufacturers can testify that many of their successful products work by unknown causal routes on conditions whose causes are not at all understood. But a good causal model is often

quite useful for suggesting possible "intervention points." This is especially true when the problem is embedded in a complex system of interacting forces, incentives, and constraints—which is usually the case. Consider, for instance, a system that produces "too much traffic congestion" at some choke point such as a bridge or a tunnel. A sketch of the relevant causal model would include the demand for travel along the relevant route, the available alternative modes of travel, the amount of roadway capacity, and the price to users of roadway capacity. An efficient and simple—but usually politically unpopular—intervention might be to increase the price to users so as to reflect the degree to which each user contributes to congestion and increased travel times.

How self-conscious, elaborate, and rigorous should your causal model be? Many social scientists who devote themselves to policy analysis would hold, "The more so the better." I say, "Yes, but . . ." Self-consciousness is highly desirable. Elaborateness (or comprehensiveness—in this case a near synonym) is desirable because it decreases the risk of missing important causal connections, but it can blur the analytic focus and blunt creativity in designing intervention strategies. Rigor is desirable if it prevents you from relying on unarticulated and false assumptions; its downside is that it may persuade you to exclude factors that are important—for instance, the personalities of certain actors—because you don't know how to model their effect rigorously and/or because you have only hunches regarding the facts.

Many models are best thought of as elaborations of a fundamental metaphor. They can be mathematically precise or verbal and evocative. Some commonly used metaphors that are the bases for models of particular value in designing alternatives are discussed in the following sections.

Market models. The model of a market where disaggregated suppliers exchange goods or services with disaggregated demanders can apply to unpriced goods and services. The main idea behind the market model is really equilibration through exchange. Hence, the market model can be applied to many phenomena other than the production and allocation of textbook goods such as widgets or apples.

For instance, you might try to understand the flow of patients into a state mental hospital system in terms of supply and demand: there is a fixed short-run "supply" of available beds in state hospitals and a per diem charge for each, and a complex "demand" for their use generated by police departments, county psychiatric emergency units, judges, members of the public, and so on.

A standard intervention strategy for improving markets that are not working as well as they might is to find some way to raise or lower the prices faced by either suppliers or demanders.

Production models. Unfortunately, there is not much academic literature about the operating logics of the common types of production systems found in public policy—such as command-and-control regulation, the provision of information, and all the other "Things Governments Do" that are briefly described in Appendix B. (However, see Weimer and Vining 2004, chap. 10, on "generic policies"; Salamon 2002.) In any case, the main concern in understanding production systems should be to identify the parameters whose values, when they move out of a certain range, make the systems most vulnerable to breakdown, fraud and abuse, egregious diseconomies, and the distortion of intended purpose. It is also helpful to know about those parameters that matter most when we try to upgrade a production system from mere adequacy to performance levels we might think of as "excellent" (see Part III, " 'Smart (Best) Practices' Research").

Another way to look at production models is through optimization lenses. Operations research models—such as queuing, inventory management, Markov processes—are relevant here. (For a good, brief discussion, see Stokey and Zeckhauser 1978; and Victorio 1995; also see the models, particularly that of case management, in Rosenthal 1982.)

Evolutionary models. An evolutionary model describes a common process of change over time. It is constructed of three important subprocesses: variation among competitors, selection, and retention. Suppose, for instance, that in an agency enforcing health-related standards in the workplace, the complaints disproportionately concerned visible and annoying problems that were not, however, as hazardous to worker health as less visible and annoying problems. In this case, the evolutionary model suggests several plausible intervention points. The agency might try to educate workers to detect and complain about more

serious problems, contriving thereby to swamp the less serious problems—thus changing the pool of "competitors." It might start screening the complaints for their likelihood of being associated with more fruitful targets—thus changing the "selection mechanism." Or it might attempt to persuade workers, and perhaps their union representatives, to reduce their propensity to complain about matters the agency wishes to hear less about—thus changing the "retention mechanism," workers' attitudes. (For other ideas and an excellent discussion of the uses of models generally, see Lave and March 1975.)

Conceptualize and Simplify the List of Alternatives

The final list of alternatives—the one you include in your presentation to your client and other audiences—will almost certainly look quite different from the one you started with. Not only will you have thrown out some that just don't look very good, but you will also have done some work to *conceptualize* and *simplify* alternatives.

The key to conceptualization is to try to sum up the basic strategic thrust of an alternative in a simple sentence or even a phrase. This is difficult but usually worth the effort. It helps to use very plain, short phrases stripped of jargon. When the Environmental Protection Agency (EPA) was created, the first administrator confronted (a partial list of) alternatives that might have been described thus: "Let the states do the work; let the feds give them the money"; "Remove impediments to firms cooperating on antipollution research"; and "Sue the bastards" (meaning the large, visibly polluting firms and industries, the prosecution of which would help build political support for the new agency).

Semantic Tip The key to simplification is to distinguish between a basic alternative and its variants. The basic element in many policy alternatives is an intervention strategy—such as regulatory enforcement or a subsidy or a tax incentive—that causes people or institutions to change their conduct in some way.[4] But no intervention strategy can stand alone; it must

4. Often, though not always, the basic element is something like a smart practice—that is, an intervention strategy that attempts to take advantage of some qualitative opportunity to create valued change at relatively low cost and/or risk. See Part III, " 'Smart (Best) Practices' Research."

be implemented by some agency or constellation of agencies (perhaps including nonprofit organizations), and it must have a source of financing. Usually the variants on the basic strategy are defined by different methods of implementation and different methods of financing.

The distinction between a basic strategy and variants based on implementation details is especially helpful when you have a lot of possible solutions to consider and you need to reduce the complexity involved in comparing them. Making the distinction puts you in a position to break your analysis into successive steps. In the first step, you might compare three "basic" alternatives, say, while ignoring the details described by their "variants." Then, once you had decided on one of these "basic" alternatives, you could turn to comparing the variants.

For example: You want to decrease the prevalence of heroin use in your county by 50 percent over the next five years.[5] You consider three basic alternatives: methadone maintenance, law enforcement pressure, and drug education. Potential variants for each one have to do with the funding sources, in that state, federal, and county money can be used in different degrees (although not all mixes of funds available for one approach are also available for the other two). Variation is also possible according to who administers the program(s): nonprofit organizations, county employees, or state employees. Or, you might consider variants of scale and scope, such as two possible sizes for your methadone program.

Design Policy Alternatives

This handbook assumes throughout that you are working on a problem of policy choice. However, a special case of policy choice occurs when you wish to, or have to, *design* at least one policy alternative to add to the menu of possibilities. Perhaps you are just not satisfied with the menu of alternatives that people in the policy environment are already talking about.

Looking around. Perhaps the problem you are dealing with is so new or unique that you will be the first, or even the only, person to oversee the

5. Choosing a numerical target can help to focus energies and can force you to think about what effects are too small to be worth seeking. But when all increments are of equal value, choosing a target may be arbitrary and self-defeating.

needed design work. More likely, though, others have dealt with this problem already. It pays to see what they have done and to assess the degree of success or failure. Successful approaches are usually the most helpful, but sometimes you can learn a lot from evident failures as well.

Where to look? It may help to observe sister jurisdictions or institutions. If you are thinking about a problem at the state level, look to other states; at the city level, to other cities; at the community foundation level, to other community foundations. Professional associations linking government officials (such as chief state school officers, district attorneys, county welfare directors, etc.) often publish materials describing "best practice" in one or more of their member jurisdictions; even if they do not, a phone call to the executive offices of the association may produce useful leads.

However, it may be necessary to consider whether the problems in your "target" jurisdiction and the "source" jurisdiction are similar in nature and scale. A city that has nearly solved its homeless problem with a service-rich mix of supportive housing and solicitous outreach (e.g., Philadelphia) may or may not be a source of good ideas for a city with a problem that is four or five times as large per capita and a physical climate that is very mild and therefore attractive to homeless people (e.g., San Francisco). You may discover that although the source's ideas are very good indeed, they will need to be adapted to the target jurisdiction's particular context. (For more on how to deal with this "extrapolation problem," see Part III, " 'Smart (Best) Practices' Research.")

A little help from your friends—and enemies too. Consider what is involved in designing a house, an office building, a living room, a dance production, a theater set, a fund-raising event, a political campaign, a graduate public policy curriculum, a nonprofit environmental education organization that will operate on a national scale, or a profit-seeking organization that will manufacture and market cyberwidgets in ten to twenty national markets. Clearly, design is a complex process, requiring many iterations, in which you both explore different ways to accomplish a certain set of objectives and alter the set of objectives in light of what you learn about what is actually practicable.

In some cases, the policy analyst works on the design problem more or less alone, like some brooding master architect. More likely, she does her work in loose or tight conjunction with other policy professionals who bring different sorts of expertise (e.g., legal, engineering, fiscal) to the table, and who bring different viewpoints and priorities as well. In any case, sooner or later, the design work will be held out for much more public view. Interested stakeholders, and perhaps more diverse audiences, who have previously been unaware of the design work going on seemingly behind the scenes, will see what you're up to. And they will offer their reactions.

You will want to use such reactions for two purposes: to improve your design according to criteria that you and your client—and very likely your audiences—think are important, including the criterion of political feasibility; and to respond in such a way as to increase the political support (and decrease the opposition) that may come your way, now or later, on process grounds alone. I shall not discuss here the strategy and tactics involved in communicating effectively with different audiences or the sequence in which to do so. I limit discussion to the questions of just how rough or polished the design should be that you first subject to relatively public review and comment and how tentatively you should put it forward.

Not surprisingly, a middle ground is best. A very rough and admittedly tentative design may leave out important points, creating a sort of vacuum that outside interests will rush to fill on their own terms. You will then be forced onto the defensive, as you try to forestall the solution they have been first to suggest. Moreover, a very rough design may signal that the design work is at such a preliminary stage that it is not worth the trouble (or the risk of early-mover vulnerability) for any of the stakeholders to react at all. On the other hand, an overly polished and seemingly definitive design may signal to stakeholders that you are not interested in consulting them. In that case, they may feel that they have no choice but to oppose your design more vehemently than they otherwise might have done—unless, of course, they conclude that they have no choice but to get on board and negotiate for the best terms they can manage.

Assuming that you have put out a rough-but-not-too-rough design and elicited a range of fairly thoughtful opinions as a result, you will need ways to keep in touch with the variety of actors who now expect—and

whom you may wish—to be part of an ongoing, if rather diffuse, design process. Keeping in touch will require a communications infrastructure (telephone, fax machine, e-mail, chat room), of course. It will also require efforts on your part to develop the sort of network relationships that permit rapid and reasonably trustworthy interpersonal communications.

At a more analytical level—because any design must be anchored in working assumptions about its objectives, available resources, and constraints—you should choose your assumptions with an eye to their reasonableness as "a basis for further discussion." You may feel some discomfort at putting forward such assumptions because they are hypothetical or speculative, and because critics might therefore challenge them as "lacking in rigor." Policy analysis is not only an exercise in truth-telling, however, but a pragmatic and responsible effort to facilitate reasonable discourse about a policy future that is inherently uncertain.

Substantive issues in design. Design problems are generally of two types. One involves the management of "cases," by which I mean individuals or other entities (such as firms or communities or lower levels of government) that receive some kind of "treatment." The treatment may involve delivery of a subsidy, imposition of obligations, or application of some sort of person-changing regime (such as educating children or getting offenders to "go straight"). The second principal type of design problem involves operating on a collectivity of some kind rather than on individual cases—for example, improving traffic flow, eliminating corruption in the police department, preserving habitat, or launching a community clean-up campaign.

The second type is too varied to discuss here, but a program that manages cases fits a rough template. That is, we can lay out a general procedure and list questions that should be asked.

I use the term *program* deliberately, to refer to an organized ensemble of routines. For instance, a program to distribute subsidies has routines for determining eligibility, calculating the amount to be paid, and detecting and deterring fraud and abuse. A regulatory program has routines for enforcing compliance with its rules, including inspection procedures and formulas for applying sanctions. It may also have routines for adopting rules, giving technical assistance to regulated parties, and offering forbearance in exchange for more efforts to cooperate. In a person-changing program, the routines typically bring the subjects into a setting where change is to be rewarded, facilitated, induced, or demanded, and where professionals apply a whole kit of tools to the change process. Think of schoolchildren, classrooms, and teachers; or of patients, hospitals, and doctors; or of welfare recipients, training programs, and caseworkers and trainers.

Such routines operate at the level of the individual case—sometimes called the "street level." Design problems at this level usually are mild compared to those that emerge at the level of the aggregate of cases, the population level. At the street level, we normally apply performance criteria of effectiveness, efficiency, fairness, and helpfulness. At the population level, we discover that design trade-offs must normally be made among all these criteria. These trade-offs occur primarily because (1) agencies never seem to have enough resources to treat all cases as we would ideally like them to be treated, and (2) standard operating procedures of the sort that government employs in the name of consistency and non-arbitrariness can bend only so far in trying to cope with the diversity and heterogeneity of the real world.

In confronting the inevitable design trade-offs, it helps to look at any set of routines from two perspectives: that of the case manager in the agency and that of the citizen whose case is being "treated." It often happens that routines designed to make life easier for program staff only make life harder for citizens. ("Sorry, we don't give advice about that; send in the application and we'll respond . . . .")

It also helps to remember occasionally to go back to basics, to reiterate to yourself and others the main objective of the program. What social problem is supposed to be ameliorated? Or what existing program is to be redesigned to accomplish what objective better? Doing so presents an opportunity to think also about an often-neglected but very important design issue of a more instrumental kind: what evidence will you systematically collect in the course of normal program operations that can let program managers know whether they are succeeding? That is, what tracking and evaluation routines can be designed and put in place?

Another common set of design issues revolves around making adjustments—sometimes large, sometimes small—in an existing organization or inter-organizational network, so as to improve performance. Space

precludes discussion here of this vast set of topics, but Appendix C, "Understanding Public and Nonprofit Organizations," provides a menu of questions that any analyst of organizational performance issues ought in most cases to consider.

STEP FOUR: SELECT THE CRITERIA

It helps to think of any policy story (see Step Eight) as having two interconnected but separable plotlines, the analytical and the evaluative. The first is all about facts and disinterested projections of consequences, while the second is all about value judgments. Ideally, all analytically sophisticated and open-minded persons can agree, more or less, on the rights and wrongs in the analytical plotline and on the nature of its residual uncertainties. But this is not true with regard to the evaluative plotline—where we expect subjectivity and social philosophy to have freer play. The analytical plotline will reason about whether X, Y, or Z is likely to happen, but it is in the evaluative plotline that we learn whether we think X or Y or Z is good or bad for the world.

This fourth step in the Eightfold Path belongs primarily, though not exclusively, to the evaluative plotline. It is the most important step for introducing values and philosophy into the policy analysis, because some possible "criteria" are evaluative standards used to judge the goodness of the projected policy outcomes that are associated with each of the alternatives.

Of course, the most important evaluative criterion is whether or not the projected outcome will solve the policy problem to an acceptable degree. But this is only the beginning. After all, any course of action is likely to affect the world in many ways, some desired and some not. Each of those effects—or projected outcomes, to apply our Eightfold Path language—requires a judgment on our part as to whether and why it is thought desirable or not. Our set of criteria embodies such judgments. Because any significant impact cries out for such a judgment to be made, the greater the variety of significant impacts, the richer will be the set of evaluative criteria we will need to deal with them.

Semantic Tip Please note that evaluative criteria are *not* used to judge the alternatives, or at least not directly. They are to be applied to the

projected outcomes. It is easy to get confused about this point—and to get the analysis very tangled as a result. This confusion is encouraged by a commonsense way of speaking: "Alternative A looks to be the best; therefore let's proceed with it." But this phrasing ignores a very important step. The complete formulation is "Alternative A will very probably lead to Outcome O_A, which we judge to be the best of the possible outcomes; therefore, we judge Alternative A to be the best." Applying criteria to the evaluation of outcomes and not of alternatives makes it possible to remember that we might like O_A a great deal even if, because we lack sufficient confidence that A will actually lead to O_A, we decide not to choose Alternative A after all. With that judgment on the table, it will be possible to look for other alternatives with a greater likelihood of producing O_A.

Commonly Used Evaluative Criteria

Efficiency. Typically, the efficiency criterion is the most important evaluative consideration in cost-effectiveness and benefit-cost studies. I use *efficiency* more or less as the term is used in economics, for maximizing the aggregate of individuals' welfare as that welfare would be construed by the individuals themselves—in economic jargon, "Maximize the sum of individual utilities," or "Maximize net benefits." Another roughly equivalent formulation would be "Maximize the public interest."

Note that although *efficiency* has an antiseptic, technocratic, and elitist ring to it, the insistence here that "utilities" are to be assessed according to individual citizens' construction of their own welfare is thoroughly democratic. Indeed, siding with efficiency—on average, across most policy issues and policy decisions—is a way to produce more humanistic policy results, too. The reason is not that efficiency is so very humane a concept in itself, but that policy decisions failing to consider efficiency very often fail to take account of the welfare of the little guy at all. The little guy may be little, but in a proper efficiency analysis, he at least shows up to be counted. Efficiency analysis imposes a moral check (for whatever that is worth in the real world of politics) on political visionaries eager to relocate entire populations so as to make room for dams, and on special interests eager to impose seemingly small price increases on large

numbers of consumers through protectionist measures in order to maintain the incomes of a relatively small number of producers.

We should observe, though, that from the point of view of social justice, the efficiency criterion may be somewhat limited. First, because analysts typically estimate people's "utility" by inferring their willingness to pay for some benefit (or to be spared some deprivation), individuals with less money do not, in an analytical sense, have as much clout as those with more. Just how big a limitation this analytical antiegalitarianism turns out to be will depend on particular cases, however. Second, if the values at stake have few or no human defenders, and therefore no human pocketbooks to back an estimate of willingness to pay, the efficiency criterion may underestimate these values even if by some conception of justice they ought to be weighted heavily. In theory, ecological values are the main example, although in fact some ecological values do have human defenders who derive enormous utility from preserving them—a utility that would be accounted for in a proper efficiency analysis.

Although cost-effectiveness (CE) analysis and benefit-cost (BC) analysis sound alike and are frequent traveling companions, they are not the same, and their uses can be quite different. True, both construe the policy problem as involving some production relationship between resources and objective(s). And both entail thinking about the relationship by using an economizing lens. However, CE is usually satisfied to assess only the nature and quantity of the desired outputs, whereas BC goes a further step and tries to evaluate those outputs in some fashion, typically in terms of money or (rarely) actual utility. Because it is less ambitious, CE is more common in policy analysis than BC. Indeed, a surprisingly large number of policy issues can be simplified and stylized as CE problems, even though on the surface they may not appear to be likely candidates at all for this sort of treatment. Here are two examples:

- The Mudville mayor wishes to respond to business complaints that building permits "take forever" to obtain. Given that you can spend no more than $500 and are permitted to change the work flow in the city planning office but not personnel assignments, the CE framework might suggest minimizing delay (measured in days) arising from purely procedural and bureaucratic sources.

- Quake City must upgrade the seismic safety of several thousand buildings constructed of unreinforced masonry. You have a twenty-year time span and no immediate budget constraint, but you wish to accomplish the job with minimum disruption to the lives (and incomes) of the residents and small businesses that may be temporarily displaced by the building renovation process. In order to minimize such disruption, CE analysis might lead you to propose that the work be done in one season rather than another, or that not all grocery stores be closed at once, or that tenants be assisted in organizing mutual aid groups.

Relative to BC, CE typically simplifies policy analysis in another useful way as well: it assumes as *fixed* either resources or outputs, and focuses only on choices involving the other member of this pair. Fixed resources usually involve a money budget or a human or physical asset such as a work team or a set of hospital beds. A fixed output is generally a target of some kind, such as a minimal required pollution abatement level or a maximal acceptable proportion of children failing an achievement test. Analysis then involves finding the best means to manipulate the other member of the CE pair so as to improve productive efficiency. Colloquially, if resources are fixed, you are "getting the biggest bang for the buck"; or, if you have a fixed target, you may be "doing no worse with less."

But suppose that, once you have figured out some approach whereby you can do no worse with less, you want to broaden your inquiry to explore whether you can make use of this new and better approach to produce a little more than you had originally planned. That is, instead of assuming that either resources or outputs are fixed, you are prepared to allow the scale of the activity to increase. The analytical challenge is much more difficult now, because at this point you cannot avoid the question of whether the augmented output "is worth it," given the envisioned cost increment. And that question cannot be answered unless you undertake to compare the utilities of both the cost increment and the augmented output. That is, CE analysis must now rise to the level of BC analysis.

Here is an example of a RAND Corporation CE analysis concerning crime prevention strategies aimed at juveniles, which tried, rather convincingly, to stretch its way into a BC analysis without quite admitting it.

The study compared the cost-effectiveness of four "early intervention" strategies to that of incarceration under California's "three-strikes" law and found that at least two of them were very likely superior. It then reasoned:

> *It might be inferred from California's vote in favor of the three-strikes law that the public believes a 21 percent reduction in crime [RAND's estimate from an earlier study] is worth the measure's cost of $5.5 billion a year. For less than an additional billion dollars, graduation incentives and parent training could roughly double that crime reduction, if they are as effective as our analysis suggests.*[6]

Equality, equity, fairness, justice. There are, of course, a great many different, and often opposed, ideas about what these terms do, or should, mean. Not only ought you yourself to think hard about these ideas, but sometimes you should also take your audience through some of that thinking, as in the following examples:

- Drivers who do not carry liability insurance leave persons whom they injure in auto accidents at risk of being undercompensated. Many of those who "go bare" are relatively poor. Many other drivers purchase their own insurance against exactly this risk ("uninsured-motorist coverage"). A policy proposal to pay for all drivers' liability insurance out of a fund created by surcharges at the fuel pump was denounced by some observers as "inequitable" to the poor, who were going bare of insurance. Other observers said that those who go bare impose inequitable premium expenses or risks of undercompensation on the rest of society, including many individuals who are themselves poor or not very well off. Clearly, the analyst needs to include a discussion of the idea of equity.
- The current debate over whether to retain affirmative action preferences for African Americans and certain other minorities in university admissions is sometimes said to pit fairness to individuals against justice to social groups. This is odd, though, since some philosophers—and most ordinary folk, too—suppose that no system claiming to be just could contain any features deemed unfair. Again, the analyst has a job to do in sorting out ideas and language.

6. Peter H. Greenwood et al., "Diverting Children from a Life of Crime: Measuring Costs and Benefits" (Santa Monica, Calif.: RAND Corporation, 1995).

Freedom, community, and other ideas. To stimulate thought, here is a (far from complete) list of more ideas of possible relevance as evaluative criteria: free markets, economic freedom, capitalism, "freedom from government control," equality before the law, equality of opportunity, equality of result, free speech, religious freedom, privacy, safety (especially from chemicals, various environmental hazards, etc.), neighborliness, community, sense of belonging, order, security, absence of fear, traditional family structure, egalitarian family structure, empowerment of workers, maintenance of a viable nonprofit sector, voluntarism, trust in others.

Process values. American democracy values process and procedure—that is, having a say in policy issues that affect you, rationality, openness and accessibility, transparency, fairness, non-arbitrariness—as well as substance. These considerations probably apply to the very design or decision process for which you are doing your present analytic work. Therefore, remember to consult broadly and equitably. In addition to building up legitimacy for your work, you may be surprised at how much you can learn, especially from people who are very unlike yourself socially or ideologically. This does not, of course, mean that you should in the end give equal deference to all opinions or desires, or keep the consultative process open forever. Some opinions are more creditable than others, and at some point consultation must give way to decision.

Do not make the mistake of thinking that "more participation" or "greater access to the process" necessarily equates to "more democratic" or "more rational." Greater opportunities for participation may be exploited more heavily by those with more time to participate or by those with special interests to protect or by ideological zealots. Ordinary people and their ordinary concerns can come out as relative losers.

Weighting Conflicting Evaluative Criteria

As we saw in the case of defining the problem, when values are at issue—as they are in regard to criterion selection as well—we must reckon how to weight opposing values. There are two general approaches to this problem.

The political process takes care of it. One approach is simply to allow existing governmental and political processes to determine the weighting. Typically, this approach will accord primacy to the analyst's employer or client, as well as allowing derivative influence to be exercised by those parties in the relevant arena who are in turn important to the employer or client.

The analyst imposes a solution. A second approach is for the analyst herself to modify—though not replace—the weighting assigned by the employer or client by reference to some overarching philosophical or political conception. The justification usually offered for this approach is that because certain interests, and perhaps philosophies, are typically "underrepresented" in government and politics, and because the analyst is in a better position than most other participants in the process to see or understand or appreciate this problem of underrepresentation, the analyst is duty-bound, or at least permitted, in the name of fairness and democracy, to right the balance.

For instance, some would argue that were it not for policy analysts, efficiency-related criteria would rarely be heeded, and that as a consequence, analysts should in effect speak up for the taxpayers whose interests may be squeezed out by better-organized advocacy groups. A related argument is sometimes made that certain conceptions of equity—in particular those having to do with the idea that the beneficiaries of publicly provided goods or services should pay for them—are underrepresented except among policy analysts. (These conceptions of equity normally exclude public expenditures deliberately intended to redistribute wealth among citizens.) Other interests that people sometimes claim are underrepresented and therefore need representation by analysts are future generations, children, people who live outside the jurisdiction making the decisions, ethnic and racial minorities, women, the poor, consumers, and animals and plants (ecological entities).

A variant of this approach introduces the idea of an educational process. Depending on circumstances, the analyst might encourage influential political actors—perhaps including the analyst's boss or principal client—to rethink their existing criteria in the light of facts or arguments the analyst can draw to their attention. In this case, the analyst takes responsibility for opening up a dialogue, and perhaps for trying to infuse it with reason and insight, but then allows the political process to take over.

Commonly Used Practical Criteria

Not all criteria that come into play in an analysis are part of the evaluative plotline. Some are purely practical and are part of the analytical plotline. These criteria have to do with what happens to an alternative as it moves through the policy adoption and policy implementation processes.[7] The main ones are legality, political acceptability, robustness under conditions of administrative implementation, and improvability.

Legality. A feasible policy must not violate constitutional, statutory, or common law rights. Remember, however, that legal rights are constantly changing and are often ambiguous. It is sometimes worth taking a gamble on a policy that might—or might not—be adjudged illegal when tested in court. (In such cases, advice of counsel is clearly in order to help craft the policy so that its survival chances are enhanced.)

Semantic Tip Note, however, that rights alleged to be "natural" or "human" are conceptually quite different from legal rights, despite the semantic similarity—examples are the conflicting abortion stances predicated on right-to-life values or a woman's right to control her own body. Alleged natural or human "rights" are sometimes controversial in that some people would like to have them recognized as legal prescriptions while others would oppose such recognition.

7. I said earlier that criteria apply to outcomes and not to alternatives. However, this statement needs a slight amendment in the case of practical criteria, which apply not to outcomes but to the *prospects* an alternative faces as it goes through the policy adoption and implementation process.

Political acceptability. A feasible policy must be politically acceptable, or at least not unacceptable. Political unacceptability is a combination of two conditions: too much opposition (which may be wide or intense or both) and/or too little support (which may be insufficiently broad or insufficiently intense or both).

Do not take a static view of unacceptability, however. Always ask yourself the question "If my favorite policy solution doesn't look acceptable under current conditions, what would it take to change those conditions?" You may discover that creative political strategizing can open up options that haven't been seriously considered before. (Discussion of techniques for building coalitions and launching successful campaigns is far beyond the scope of this book, but Appendix D, "Strategic Advice on the Dynamics of Political Support," sketches some of the basics.)

In assessing strategic limitations and possibilities, it will help to make use of various models of the political process. As I observed earlier, models are based on metaphors, and the ones that are likely to be most valuable in this case are these:

- A complex game in which well-organized and well-positioned minorities enjoy special advantages
- A theater, in which the actors are elected officials who strive, with or without a basis in reality, to create a good appearance—to themselves, to each other, to the critics, and to the audience (whose approval, ultimately, is all-important)
- A marketplace of slogans, symbols, and ideas, with a mix of honorable merchants and hucksters as sellers and a mix of sophisticates and innocents as buyers
- A school in which elected officials learn how to do good policy design work and sometimes share their results and their methods with their classmates

How exactly is one to "make use" of such models? Think of them as conceptual lenses. Observe the relevant political process through each of them in turn, and identify the probable pitfalls and opportunities brought into focus by each.[8]

8. An analogous procedure was first given prominence by Graham Allison (1971).

Robustness and improvability. Policy ideas that sound great in theory often fail under conditions of actual field implementation. The implementation process has a life of its own. It is acted out through large and inflexible administrative systems and is distorted by bureaucratic interests. Policies that emerge in practice can diverge, even substantially, from policies as designed and adopted. A policy alternative, therefore, should be robust enough that even if the implementation process does not go very smoothly, the policy outcomes will still prove to be satisfactory.[9]

Some adverse implementation outcomes usually worth worrying about are long delays; capture of program or policy benefits by a relatively undeserving and unintended constituency; excessive budgetary or administrative costs; scandal from fraud, waste, and abuse that undermines political support and embarrasses supporters; and administrative complexities that leave citizens (and program managers) uncertain as to what benefits are available or what regulations must be complied with.

Even the best policy planners cannot get all the details right at the design stage. They should therefore allow room for policy implementers to improve on the original design. The most common vehicle for such improvement is participation in the implementation process by individuals and groups whose expertise or point of view was not included in the design phase. However, note that the openness that makes for improvability can also, by opening the door to hostile political interests, diminish robustness. Hence, a very careful evaluation of the current factual situation—personalities, institutional demands and incentives, political vulnerabilities, and so on—is usually in order.

In estimating robustness and improvability, models of bureaucracy can serve as useful conceptual lenses, as suggested earlier with regard to carrying out political analysis. I find the most useful metaphors for bureaucracy to be these, listed in no particular order:

- An automaton enacting preprogrammed routines ("standard operating procedures," or "SOPs")

9. Robustness under conditions of "deep uncertainty" is sometimes a preeminently important criterion—e.g., for long-term and very risky problems such as global climate change or shifts in the technical and organizational capacity of terrorist movements and cells (Lempert, Popper, and Bankes 2003).

- A person in an environment, driven by survival needs, self-enhancement interests, and, under some conditions, a desire for self-actualization
- A political arena wherein individuals and factions jockey for influence over the organization's mission, access to its decision systems, and its prerequisites
- A tribe with its own rituals and an array of safeguards against contamination by "outsiders"
- A society of individuals cooperating toward a more-or-less common set of goals
- A structure of roles and interrelationships that are intended to complement one another in a rational division of labor
- An instrument used by "society" for "society's" own objectives

"Criteria" as Logical Constructs

Criteria such as efficiency, equity, political acceptability, and robustness are substantive. But we can think of criteria of a purely formal sort as well. For instance, we can distinguish among criterion values that we wish to maximize, those that must be minimally satisfied, and those of a generally lesser priority for which "more is better."

It is helpful to focus initially on one primary criterion, a *principal objective to be maximized* (or minimized). Typically, this principal objective will be the obverse of your problem definition. For instance, if your problem is that too many families are homeless, then your principal objective will probably be to minimize the number of homeless families. If the problem is that global temperatures are rising too rapidly, a good statement of a principal objective might be, "Minimize or reverse the increase of global temperatures." Naturally, there are other criteria to judge outcomes by, such as costliness, political acceptability, and economic justice, and these should all enter into the final evaluation. However, it is very likely that unless you focus—initially, at least—on a single primary criterion and array others around it, you will find yourself getting very confused. As you get deeper into the analysis and feel more comfortable with a multiplicity of important objectives, you may wish to drop your emphasis on a primary criterion and work on a more complex "objective function," in the language of mathematical programming.

Linear programming. A mathematical (and now computer-accessible) technique for optimizing choice when you have a principal objective or an objective function and a scarce stock of resources for maximizing it is called "linear programming" (Stokey and Zeckhauser 1978, chap. 11). Often, at least some of the resources—such as the agency budget and the available physical facilities promised by a nonprofit agency—are constrained. Even if the problem is not subject to simple quantitative assessment, analysts often find it useful to take advantage of the logical structure of linear programming to conceptualize their task. The conventional formulation then sounds like this: Maximize this objective (or objective function) subject to such-and-such resource constraints.

Here is an example from the homelessness problem: "Maximize the number of homeless individuals housed on any given night, subject to the constraints of not exceeding $50,000 per night total budgetary cost to Agency X, not putting shelters into Neighborhoods A and B for political reasons, and trying to give 'more' choice to the beneficiary population as to where they will take shelter."

Semantic Tip ***Linguistic clarity.*** If it is possible to sort your criteria according to whether they refer to values to be maximized, values that stand as constraints, or values that have a more-is-better quality, keep the different statuses of the criteria in mind. Be conscious of them. You can do this with a simple verbal trick: as appropriate, define your criteria as "Maximize such-and-such value"; "Satisfy such-and-such value constraint"; and "Get more of such-and-such value."

Avoid Confusing Alternatives and Criteria

Semantic Tip *Alternatives* are courses of action, while *criteria* are mental standards for evaluating the results of action. How could you ever mistake an alternative for a criterion, or vice versa? As with many confusions in policy analysis, the source of such a mistake is likely to be semantic. Consider, for example, a senior manager in a state regulatory agency dealing with worker safety. She wishes to incorporate worker complaints into the agency's strategy for targeting inspections across work sites in the state. Her assistant presents her with a number of alternatives for doing so, one of which is called "Rapid-response (24-hour maximum)

hotline." Not surprisingly, one of the criteria for assessing outcomes is "Responsiveness." The alternative seems a lot like the criterion. But this is an illusion. The alternative (course of action) is really the hotline. The main reason it looks like a criterion is that the *intention* of "rapid-response" has crept into the definition.[10] This is a dangerous mistake, because one should not assume through definition that an intention will actually be realized.

This sort of confusion is most likely to arise in cases of organizational redesign, since proposals to create or modify organizational units resonate with intentionality—for instance, create: a performance measurement office, a strategic planning team, a customer service department. But remember, the performance measurement office may end up, for whatever reasons, using meaningless measures collected by unreliable agents; the strategic planning team may be deliberately ignored by savvy or possibly unsavvy managers; and the customer service department may unintentionally end up as an instrument of customer alienation.

STEP FIVE: PROJECT THE OUTCOMES

For each of the alternatives on your current list, project all the outcomes (or impacts) that you or other interested parties might reasonably care about. This is the hardest step in the Eightfold Path. Even veteran policy analysts do not usually do it very well. Not surprisingly, analysts often duck it entirely, disguising their omission by a variety of subterfuges. Hence, the most important advice about this step is simple: Do it.

At least three great practical as well as psychological difficulties must be confronted here. First, "policy" is about the future, not about the past or the present, but we can never be certain about how the future will unfold, even if we engage it with the best of intentions and the most thoughtful of policy designs.

Second, "Project the outcomes" is another way of saying "Be realistic." Yet realism is often uncomfortable. Most people prefer optimism. Policy can actually affect people's lives, fortunes, and sacred honor, for better or for worse. Making policy, therefore, imposes a moral burden heavier than many people care to acknowledge. Understandably, we would rather

10. Also, in this case, the stem *respons-* appears in both alternative and criterion.

believe that our preferred or recommended policy alternative will actually accomplish what we hope and that it will impose fewer costs than we might realistically fear.

Third, there is what is sometimes called "the 51–49 principle." That is, in the thick of the policy fray, we are driven out of pure self-defense to treat 51 percent confidence in our projection as though it deserved 100 percent confidence, so that we sometimes mislead not only others but ourselves as well. The first difficulty—namely, that we can never have wholly convincing evidence about the future—compounds the second and third, inasmuch as our wishful thinking is not readily disciplined by reference to empirical demonstrations and proofs.

These psychological difficulties notwithstanding, systematic efforts to project outcomes are essential. For policy makers in a modern democracy, neither following "gut instincts" nor reading pigeon entrails are responsible alternatives.

Extend the Logic of Projection

In this section I discuss, in a very general way, the logic of combining models and evidence to produce usable projections of policy outcomes from the various alternatives being considered. The logic is largely that of common sense, but with some important additions.

The first addition is that of metaphor. Policy analysis, as we have seen, makes use of the metaphors behind the models—metaphors such as "bureaucracy as automaton" and "politics as theater" and "this piece of the world as production system"—to yield qualitative insights about important causal relationships. The especially important relationships are those that may afford useful intervention points in complex systems or that present potential pitfalls in the policy adoption or implementation processes.

Second, policy analysis uses social science to the degree that it can. A great deal of social science is directed toward answering the question "Is Model X of this piece of the world realistic?" Social scientific studies of this type can often be useful for diagnosing the existence of problems, mapping trends, and deciding whether some seemingly "smart" practice (see Part III) is worth trying to replicate. You should be careful, however, to avoid using the social scientific standard of adequacy for judgments

about the realism of a model, for it is quite conservative. In policy analysis the looser, but more appropriate, standard should be whether reliance on a model can lead to better results and avoid worse results than less disciplined guesswork.

Third, policy analysis, as we have seen, uses multiple models. Most social science, in imitation of the hard sciences, looks for "the best" model (or, in the case of some practitioners, "the true" model). Because all models abstract from reality, however, even the best models are never complete. While such abstraction may advance the progress of science, in the world of policy, where real consequences of policy choices are to be experienced by real people, no facet of a problem or the possible alternatives to be adopted can be exempted from analysis. Whatever models *can* be employed to illuminate some important facet of the problem or of the possible outcomes *should* be employed—even if doing so results in an inelegant and ad hoc multiplication of subanalyses.

Finally, even when you have adopted adequately realistic models of sufficient number and variety, these models still need to be used in conjunction with evidence about "initial conditions," or the facts on the ground as they currently exist. For instance, "Deputy Director Smith is as incompetent as they come. The need to work around her will raise the risks of failure by at least 25 percent." Or: "The community appears very angry about the drug scene right now, and they'll almost certainly help the police in the planned crackdown." Although the projections of many models are not particularly sensitive to initial conditions, some are. These are the models that bear on projections of political acceptability and on the robustness of an alternative to the stresses of the implementation process.

Magnitude Estimates

Projecting outcomes often requires you to think not just about the general direction of an outcome but about its magnitude as well. Typically it's not enough to say, "We expect this program to have a very positive effect on reducing unwanted teenage pregnancies." Instead, you'd want to say, "We expect this program to reduce by one hundred to three hundred the number of unwanted teenage pregnancies per year in this community over the next five years."

Sometimes a single-point estimate of your best guess about the degree of magnitude will suffice. But in other cases you should provide a range.

Break-Even Estimates and the Problem of Uncertainty

"You have no evidence this will work," carp your critics. You—quite correctly—respond, "You have no evidence it won't." You are both right, because "evidence" about events that have not yet occurred is a contradiction in terms. Nevertheless, your critics make the valid point that you probably can't be very certain that your recommended policy option will work and that the *burden of justification* (not, of course, a burden of literal "proof") falls on you.[11] You will want to take up this burden using whatever strategic leverage you can muster.

This means that you will set the bar of justification as low as is reasonable. Typically, you will want to claim only that the recommended course of action is "sufficiently likely" to produce results that are good enough to justify the known costs and risks. This approach is known as "break-even" or "threshold" analysis. It is an astonishingly powerful—yet simple, intuitive, and commonsensical—conceptual lens.[12] It builds a decision framework out of what is known or reasonably assumed and handles the residual uncertainties by comparing them to elements in this more secure frame.

Suppose, for instance, that some youth-guidance-oriented policy meant to reduce incarceration of juveniles is under consideration and has known costs of $1 million, but the level of effectiveness is speculative. You build a decision frame out of (1) a decision-rule that says, "If the benefits exceed the costs, do it," and (2) a known fact about the costs, $1 million. You then evaluate the remaining uncertainty in these four steps:

1. Locate the point of minimum acceptable effectiveness given the costs. Ask: "What is the minimum level of effectiveness this policy would have to achieve in order to justify our spending $1 million?" Your answer: "Different observers have different opinions about

11. This assumes that you do make a recommendation. But even if you only lay out options and attach projected outcomes to them, you still cannot escape justifying the projections.
12. It is also, I believe, a lens that is inadequately appreciated and utilized.

how much avoiding an incarceration is worth, but leaving that aside and going with my own values, I'd say that a 15 percent reduction is the minimum I would accept given the expenditure of $1 million." [13]

2. Referring back to your model of the processes that create the problem and hold it in place, ask: "What new processes, or changes in old ones, could conceivably produce this level of effectiveness?" This is largely a qualitative analysis. The answer might be: "Based on previous documentation of how the guidance process works, we can safely say that it works in different ways with different sorts of kids—when it works at all, that is. It can provide about half the kids more constructive life choices; in about a quarter of the cases it works through heightening the (realistic) perception of punishment; and in about a quarter of cases we are just crossing our fingers."
3. Assess how likely (or unlikely) it is that the processes for improvement thus identified will actually produce the required—that is, the break-even—level of effectiveness. It is particularly helpful to ask whether the break-even level (15 percent in this case) looks like a plausible number given what is known or assumed about the effectiveness in similar circumstances of similar sorts of interventions. If the number is implausibly high, you might then go on to ask whether special circumstances of some sort might be at work in this case to help achieve it. Note that in this and the previous step you must rely on what we might think of as "theory," or self-conscious and evidence-based reasoning about the way causal processes work. Typically, these are the weakest links in the chain of policy-analytic reasoning. That is why it is particularly important—and particularly difficult—to take this step as thoughtfully, self-critically, and responsibly as possible.

13. Some people speak of "switchpoint analysis" and would refer to the 15 percent here as the switchpoint at which a decision maker would switch from a favorable view of this policy to an unfavorable view or vice versa. Others refer to "threshold analysis" and would call the 15 percent figure the threshold level of effectiveness we would need to assume in order to justify choosing this alternative.

4. Estimate the probability of failure and the political and other costs of having to accept failure—asking yourself whether they would be tolerable should they be incurred.

In the hope that it may be helpful to encourage readers to use break-even analysis (where appropriate, of course), I offer two more examples:

- Policy X for establishing a chain of wildlife refuges looks like an excellent choice to implement a broader conservation agenda, provided that the funding really comes through as planned. But it might not, because federal grant-in-aid resources may not be forthcoming, or the governor may give the policy lower priority than she now promises, or some development interests that have their eye on two of the designated sites may find a way to block it. You interview your client, a state environmental agency director, and determine that she likes the program so much that she is willing to go for it if it has at least a 50–50 chance of working out. Your analysis can then focus her attention on why, after considerable research, you have concluded that it has a somewhat better (or somewhat worse) chance than 50–50, even though you may find it impossible to specify exactly how much better (or worse).
- Building a new stadium for the Hometown Heroes looks like a good idea, given the nature of the costs and benefits, if average daily attendance turns out to be no less than 10,000. That's the break-even attendance figure for you and the relevant decision makers. It's up to them to decide, first, how confident they are that this break-even level will be reached, and then, whether that degree of confidence is enough to warrant making an affirmative decision. You can thus organize your presentation of facts and opinions to focus on these two key issues.[14]

14. A special case of break-even estimation is a fortiori estimation. If you hypothesize worst-case estimates of all important parameters that are still uncertain and the policy alternative still satisfies your decision criterion, the alternative would, a fortiori, prove satisfactory even if more careful estimates were to be more favorable. In that case, the more careful estimates are unnecessary. See MacRae and Whittington 1997 on a fortiori analysis (218–219) and, more generally, on the question of precision versus approximation in projecting outcomes (209–224).

Semantic Tip Assuming for the moment that benefits are uncertain while costs are not, ask yourself these two questions: (1) "Given what I know for sure about the costs of this alternative, what is the minimum help we need to get from Condition X to ensure adequately offsetting benefits?" and (2) "How reasonable is it to believe that Condition X will actually produce that minimum?"

Try Sensitivity Analysis

Which uncertainties are the most important, in the sense that relatively small changes in what you believe would cause you to change your mind about how desirable some alternative might be? By a process known as "sensitivity analysis," you can discover these most important uncertainties. The procedures are somewhat technical (Morgan and Henrion 1990, chap. 8), but the intuition behind them is simple. Consider the several assumptions you have made on the way to your conclusion and suppose that each of them is somewhat mistaken. Now ask yourself: "How big a mistake can I afford in this assumption before this analysis is in really big trouble?" The smaller the affordable mistake, the more "sensitive" is your analysis to the particular assumption.[15] (For a good example of sensitivity analysis, see Appendix A.)

It is not hard to examine these assumptions one at a time. But what if they pile up in such a way that you are "somewhat" wrong on two or three or four assumptions all at once? This situation is dealt with by a technique called "Monte Carlo simulation," which begins by recognizing that each assumption is in itself probabilistic and then combines the probabilities behind the assumptions to create a new set of probabilities about how the combination of assumptions will turn out. You can then say something like this: "Given the many possible scenarios that might occur, there is an 82 percent chance that the actual scenario would exceed our break-even requirement."[16]

15. Of course you could be wrong in ways that protect your results as well as defeat them.

16. For further details, see Morgan and Henrion 1990, chap. 8. You can use the commercially available (and very user-friendly) Crystal Ball program to run Monte Carlo simulations.

Confront the Optimism Problem

Great ventures require optimism. Because even small ventures by government can affect so many lives, they are in their own way great. Hence, some "realistic" optimism is beneficial. But how do you guard against excessive optimism?

Scenario writing. What scenarios might cause the proposal to fail to produce the desired outcome—that is, solving or sufficiently mitigating the policy problems? Do not create such scenarios from whole cloth; be realistic. And yet, let your imagination run a little, so that you have a good chance of thinking of the most dangerous possibilities. In particular, think about the dangers of the implementation process, political and otherwise. Scenario writing also benefits from thinking about possible failures from a vantage point in the future looking backward. Consider the following scenarios:

- In a health or safety regulatory program, the scientific or technical knowledge necessary to produce rational and legally defensible standards may prove to be lacking. As a result, five years from now, symbolic politics, corruption, industry capture, or excessive regulatory zeal will have filled the vacuum.
- Time passes, and budgetary resources and political support that were once available slip away under the impact of electoral change and shifts in the economy. A terrorist-identification program, begun under nurturant leaders and accompanied by editorialists' applause, will have become consolidated with another program, then taken over by a different bureaucratic unit, and eventually will have disappeared.
- A successful state program designed to furnish technical assistance to extremely poor rural counties will have added a mandate to aid many not-so-poor urban counties, with the result that scarce program resources will have been dissipated and squandered. (I call this scenario "piling on"; see Bardach 1977).
- A program that subsidizes research and development of "fish protein concentrate," intended as a cheap and nutritious food additive, is launched with great fanfare. Five years from now it will have been stalled, permanently, by the Food and Drug Administration, which

will not have been able to assimilate this product into its standard operating procedures for regulatory review.

Semantic Tip Notice that these scenarios are written in the future perfect tense. Use of this verb tense encourages concreteness, which is a helpful stimulant to the imagination (Weick 1979, 195–200). It often helps your scenario writing to start with a list of adverse implementation outcomes, conjuring up one or more scenarios about how each of them might occur. Remember the list of such outcomes embodied in the scenarios just described: long delays; "capture" of program or policy benefits by a relatively undeserving and unintended constituency; excessive budgetary or administrative costs; scandal arising from fraud, waste, and abuse that undermines political support and embarrasses supporters; and administrative complexities that leave citizens (and program managers) uncertain as to what benefits are available or what regulations must be complied with.

Semantic Tip ***Undesirable side effects.*** Analysts are often cautioned to think about "unanticipated consequences." But this term is not appropriate, for it is often used to refer to perfectly anticipatable, though undesirable, side effects. Here are some common undesirable but foreseeable side effects in public programs:

- *Moral hazard* increases. That is, your policy has the effect of insulating people from the consequences of their actions. For example, increasing the size of unemployment benefits has the side effect of blunting the incentives to search for a replacement job.
- Reasonable regulation drifts towards *overregulation*, especially if the costs of overregulation are not perceptible to those who bear them. One possible adverse result of setting health or safety standards "too high" and enforcing them "too uniformly" is that you increase private-sector costs beyond some optimal level. For instance, given most people's preferences for safety, imposing auto bumper standards that cost some $25 per vehicle but have only trivial effects on improving vehicle crashworthiness would not pass a conventional benefit-cost test.

A second adverse result of overregulation might be that you inadvertently cause a shift away from the regulated activity into some other activity that—perversely—is less safe or less healthful. For instance, some observers argue that overregulating the safety features of nuclear power production has caused a shift toward coal, which they argue is much more hazardous than nuclear power.

- *Rent-seekers*—that is, interests looking out for profitable niches protected from full competition—distort the program to serve their own interests. It is not inevitable that suppliers of goods and services to the government, including civil servants, will find ways to capture "rents," but it often happens (e.g., with many defense contractors). Rent-seeking also occurs in less obvious ways—as when some regulated firms successfully lobby for regulations that impose much higher compliance costs on their competitors than on themselves.

The ethical costs of optimism. It is hard to overstate the importance of worrying about the possible adverse side effects of otherwise "good" policies, not to mention the possibility that even intended main benefits may fail to materialize under many circumstances (see the chapter on "Assessing Your Ignorance" in Behn and Vaupel 1982). The ethical policy analyst always poses the question, "If people actually were to follow my advice, what might be the costs of my having been wrong, and who would have to bear them?" And keep in mind that the analyst typically is *not* one of the parties who have to bear the costs of her mistakes.

The Emergent-Features Problem

Policy often intervenes in systems of some complexity, systems populated by actors who adapt to your interventions in surprising ways and whose adaptations lead other actors to create still further adaptations. Surprising behavior may emerge from such dynamics. How can you take such possibilities into account when you make your projections?

In many cases, you cannot, for the systems are too complex and too little understood. The macro-economy is an extreme case—the hypothetical responses of producer interests to "supply-side" tax cuts are a major

source of contention between those who think the taxes generated by a growing economy will substantially offset the direct effects of the cuts and those who are deeply skeptical of this scenario. Few cases are that extreme, however, and you might make some progress with what might be called "the other-guy's-shoes" heuristic.

Imagine yourself in the other guy's shoes. Say to yourself: "If I were X, how would I act?" And then proceed to crawl into X's mind and play out, in your own mind, what X might do. Do this systematically for each of the important stakeholders or other affected parties. The value of this exercise is that you will discover them to be adapting in surprising ways to the new policy situation you may be creating.

For example, under chemical right-to-know laws, workers must be told what substances they have been exposed to, and they may examine health records maintained by employers. If you were a worker, how might you use this law? Might you use the information to quit your present job? To demand a higher wage or more protective equipment? To sue your employer or put pressure on your union representative?

And how would your union representative react to such pressure? Might this pressure make the representative's job harder—or perhaps easier in some way?

Now, suppose that you were an employer. Given what you expect your workers to do, you would face incentives to make adaptations or countermoves. Might you stop keeping all health records not explicitly required by law? Or continue keeping records but permit doctors to perform only selected lab tests? And if you were a worker and saw your employer doing these things, what countermoves would you make?

Not all the moves and countermoves of players wearing the other guy's shoes will necessarily lead to trouble for the policy alternative you are evaluating. Many such adaptation sequences may prove to be helpful, in the sense that they may help society to adjust to the changes set in motion by the new policy. At some point in the 1970s, the Federal Trade Commission (FTC) attacked the problem of retailers evading implied warranty obligations for defective products by selling installment debts to banks and other collectors that had no duty, under the so-called holder-in-due-course doctrine, to fix the product or to refrain from collecting on the installment debt. The FTC solution was, in effect, to abolish

the protections of the holder-in-due-course doctrine. Banks complained that they did not want to go into the toaster repair business. But if you put yourself in the shoes of a bank manager suddenly obliged to become a toaster repairer, might you not have thought of contracting out your repair obligations to repair specialists, or perhaps arranging not to buy installment debts from retailers who you believed could not be relied upon to make good on their implied warranties?

Construct an Outcomes Matrix

The step of projecting outcomes leads you into a dense thicket of information. At some point along the way, you will probably need to stand back and assess complex and uncertain scenarios for perhaps two to five basic alternatives, combined with their principal variants. A convenient way to get an overview of all this information is to display it in an *outcomes matrix*. The typical outcomes matrix format arrays your policy alternatives down the rows and your evaluative criteria across the columns. Each cell contains the projected outcome of the row alternative as assessed by reference to the column criterion.

Table I-1 is an example. I created this matrix a few years ago in order to compare projected outcomes of three alternative systems for periodically inspecting California's 10 million automobiles for smog-control compliance. In this example, Baker, Smith, and Jones—analysts working for three different government agencies and holding somewhat opposed policy views—are making rather different projections of outcomes for each of these alternatives. I record their rival projections in the cells where they differ.[17]

An outcomes matrix is a scratch-pad affair, useful for you and your team members and perhaps a friendly outsider or two. Its main function is to help you see what you have in hand and what you still need to learn about. If it looks to you large and complicated, it may also serve to encourage you to shrink it: conceptualize some alternatives as mere variants of more or less "the same thing"; get rid of alternatives that are

17. For other examples, see Tables 9-4, 9-5, 9-8, and 9-9 in Stokey and Zeckhauser 1978. See also the discussion in Weimer and Vining 2004, 282–289, and their sample matrices on 285–313.

TABLE I-1 Outcomes Projected by Three Different Analysts for Three Alternative Fleet Inspection Systems

	CRITERIA			
ALTERNATIVES	Maximize needed cleanup (percentage attained)	Minimize cost per ton of pollution reduced ($)	Minimize consumer time (minutes)	Reduce test cost to vehicle owner ($)
IM 240[a]	Baker: 100 Smith: 0	Baker:<SC Smith: Millions	Jones: 60 Smith: >60	Jones:<SC Baker:>SC
Modified Smog Check[b]	Baker: 50 Smith: 0	Baker: Thousands Smith: Millions	Jones: 75 Smith: 75	Smith: 35
Remote Sensing[c]	Baker: 0 Smith: 100	Baker: Millions Smith: 200	Consensus: 0 for most drivers	Consensus: 0 for most owners

Note: The Smog Check (SC) system involved biennial inspections at the time of vehicle re-registration in any one of several thousand approved service stations.

a. Would have required biennial inspections using more sophisticated testing machinery at any one of many fewer centralized and specialized testing facilities.

b. Would have added additional tests and strengthened enforcement procedures in selected areas of the Central Valley and the South Coast air basin.

c. An emerging technology that would simply monitor cars from roadside vans and initiate enforcement measures against those determined to be out of compliance.

obvious losers; omit criteria that don't differentiate among alternatives (that is, all the alternatives appear to do about as well or as poorly with respect to these criteria).

You may find it useful to go through this exercise more than once, as your analysis evolves over time.

A later version of such a matrix may also prove useful when you Tell Your Story. However, be aware that unless it is very well designed and explained, it can impede the flow of your story rather than assist it.

You have some choices as to how to characterize the projected outcomes in a way that is technically feasible and also meaningful to the user. The most straightforward approach is to enter a number or verbal descriptor that directly describes the world, such as Smith's projection

that it will cost "millions" of dollars per ton of pollution reduced by means of IM 240. Another approach is to state a comparison between the alternative being considered and some "base case" outcomes, such as Baker's projection that the cost per ton would be less than that of Smog Check, the current system. The base case need not simply reflect current trends, however; it may offer a forecast such as this: "What we fear the Governor and the Legislature will do absent a better idea."

Semantic Tip A common error that occurs in labeling the criteria columns in such a matrix is to fail to indicate what value is at stake and in what dimensions the measurement is being done. For instance, if you are assessing a rental subsidy program and you enter a plus sign in a column labeled "Landlord/tenant relations," the reader may not know whether you think relations will become more harmonious, more confrontational, less dominated by landlords, less dominated by tenants, or something else. It is not sufficient that your surrounding text makes your intention clear; the matrix label itself must be informative. In my illustrative matrix, I did not simply write "Cleanup" or "Cost" or "Time" at the tops of the criteria columns. Within the space constraints, I tried to indicate the metric and the desired direction it should move in. In many cases it helps to insert "maximize" or "minimize" in the criterion label.

If you cannot fill in the cell with a quantitatively expressed description of the projected outcome, you may have to settle for a verbal descriptor such as "very good" or a symbolic descriptor such as + or –. The operative word here, though, is *cannot.* Quantification goes a long way toward making an analysis useful, and rough yet adequate quantification is easier than you might suppose.

How Projecting Outcomes Connects to Design Problems

Semantic Tip The Eightfold Path language of choice—problems, alternatives, criteria, projections, trade-offs—does not fit design problems (see the earlier section on designing policy alternatives) without a little translation. The object of design is usually an organization or program that is, more generally, a system of interrelated parts. The object of design is to make the system *perform* in a certain way. You can translate "the problem" to be solved as "the performance objective" to be achieved. Meeting

this objective is the primary "criterion" of success. Meeting a variety of other performance requirements means satisfying other criteria of the "constraint" type (see the earlier discussion of linear programming).

In the choice framework, we typically find ourselves working on a single problem. That problem can have more than one aspect, though probably not too many. But because design problems encompass a system of interrelated parts, it is possible that you have to treat each part separately—that is, as a separate problem. For instance, consider redesigning a state educational system's approach to delivering the full menu of college-preparatory courses to all high school students. This task involves a set of related but differentiable "problems" or "performance objectives" involving, among other things:

- The level of discretion allowed school districts in imposing college-preparatory graduation requirements
- How districts might provide student support, and how the state might support the districts in their efforts to do so
- The rapidity with which the new requirements might be implemented
- The nature and adequacy of the procedures for monitoring high school course content
- The proficiency level expected of students in the relevant high school courses[18]

STEP SIX: CONFRONT THE TRADE-OFFS

It sometimes happens that one of the policy alternatives under consideration is expected to produce a better outcome than any of the other alternatives with regard to every single evaluative criterion. In that case—called "dominance"—there are no trade-offs among the alternatives. Usually, though, you are less fortunate, and you must clarify the trade-offs between outcomes associated with different policy options for the sake of your client and/or audience.

18. Michele Sutton, "Graduating with Options: Recommendations for Designing and Implementing the American Diploma Project in California" (University of California, 2008).

The most common trade-off is between money and a good or service received by some proportion of the citizenry, such as extending library hours from 8 p.m. till 10 p.m., weighed against a cost of $200,000 annually. Another common trade-off, especially in regulatory policies, involves weighing privately borne costs (a company's installing pollution abatement equipment) against social benefits (improved health of the affected population and the protection of forests).

Semantic Tip As economics teaches us, trade-offs occur at the margin. Trade-off analysis tells us something like this: "If we spend an extra X dollars for an extra unit of Service Y, we can get an extra Z units of good outcome." This kind of analysis puts the decision maker in the position to answer the question "Does society (or do you) value Z more or less than X?" and then to follow the obvious implication of the answer: if yes, decide for another unit of Y; if no, don't.

A linguistic device to help you stay focused on the margin is frequent use of the word *extra*. Note that this word appears three times in the example analysis in the preceding paragraph.

Some units of Service Y can be purchased only in "lumps" larger than one—sometimes much larger. Consider transportation services provided by highways and bridges. Y might be one passenger trip from A to B, but most transportation construction projects (highway enlargements, new bridge crossings) can be undertaken only for minimum bundles of Y that run into the thousands of trips. Or suppose that a police chief must choose one of two "lumpy" alternatives, such as $1 million per year for more overtime on the night shift or $250,000 per year for more rapid replacement of police cars. The first alternative is lumpy because the police union insists on a minimum overtime rate for all 150 officers on the shift, and the second is lumpy because the auto supplier charges much less per vehicle after some threshold number of vehicles. If, say, the projected decrease in burglaries from increased overtime were 200 per year and that from newer vehicles were 50, the trade-off confronting the decision maker at the margin is an extra $5,000 per extra burglary prevented. In this case the "margin" is a lumpy 150 burglaries and $750,000. (Criteria other than burglary prevention and cost efficiency would, of course, be relevant to this problem.)

Establish Commensurability

Suppose some Alternative A_1 stacks up very well on Criterion C_1, moderately well on C_2, and poorly on C_3. And suppose that A_2 stacks up in the opposite way. We can choose between the two alternatives only if we can weight the importance of the criteria and if we can express their relative weights in units that are commensurable across the criteria. As you may have heard, money is everybody's favorite candidate for the commensurable metric. Using money as the metric is a very good idea, and it often works much better than you might imagine. For instance, even the "value" of life can sometimes be reasonably well described in the metric "willingness to pay X dollars for a reduction in the risk of death by Y percent a year," or something like it.

However, there are limits to the money metric and to commensurability as well. In order to reach a summary judgment as to how much political equality to give up in a political redistricting case, for instance, in exchange for how much more African American voter power, it seems impossible even to state the trade-off in meaningful terms. In general, this problem is known as the "multiattribute problem." In some deep sense it is logically insoluble, although some heuristics are available to help trim it down to its irreducible size (Stokey and Zeckhauser 1978, 117–133; MacRae and Whittington 1997, 201–203).[19]

Break-even analysis revisited. We have seen how break-even analysis can help you both to focus on which residual uncertainties you will have to estimate and to frame the terms in which those estimates must be given (e.g., "We have to believe Alternative A_1 will produce at least X results in order to justify choosing it."). We turn now to how break-even analysis can also help to solve commensurability problems.

Consider those policy areas, such as safety regulation, where we are often implicitly trading off dollars against risks to life. It might be supposed that in order to assess these proposals, you would have to decide

19. One potentially misleading heuristic has the analyst creating a score for each alternative with respect to each criterion and then manipulating the scores arithmetically. It is easy to get the arithmetic right, but it is often hard to come up with scoring procedures that are not at some level arbitrary (e.g., anchored against some arbitrarily defined level of excellence or its opposite).

what a human life is *really worth*—a task many of us, quite understandably, are unwilling to perform. The task is made somewhat more tractable, however, if you work with quantitative estimates and apply break-even analysis. Suppose, for instance, that you are considering whether or not to impose on the auto industry a new design standard that will improve safety and save an estimated twenty-five lives every year into the indefinite future. The cost of meeting the standard is estimated at $50 million per year indefinitely. The trade-off at the margin appears to be, therefore, "$2 million per life." But you don't have to answer the question "What's a human life really worth?" in order to make at least some sense of this decision. You do have to answer the question "Is a statistical life (that is, the life of an unknown individual 'drawn' in a random manner from some population, rather than a named person's life) worth at least $2 million?" That is a break-even analysis sort of question. For reasons best known to yourself, it may be obvious to you that a statistical life surely is—or isn't. And while it's very difficult to decide whether the worth of a statistical life falls on one or the other side of some monetary boundary, it's a lot less difficult than coming up with a point value.

Even this sort of trade-off calculation is troubling to many people, and some find it morally repugnant. Unfortunately, repugnant or not, it is in a sense inevitable. Whatever position you take on the auto safety design standard described, you are by implication also taking a position on the dollars/risk-to-life trade-off: if you favor the standard, you implicitly believe the trade-off is worthwhile, whereas if you oppose it, you don't. Fortunately, this logical implication has its uses. You may in many circumstances quite sensibly prefer to rely on your intuition rather than on some complicated systematic method. Once you have reached your conclusion on that basis, though, you should "check" your intuition by asking yourself: "Since the implication of my policy choice is that I value X as being worth at least (or at most) thus-and-such, do I really believe that?"

Focus on Outcomes

Semantic Tip A common pitfall in confronting trade-offs is to think and speak of the trade-offs as being across *alternatives* rather than across projected *outcomes*—for example, "trading off twenty foot-patrol police

officers in the late night hours against a lower-maintenance-cost fleet of police vehicles." Although there is such a trade-off, you'll see, with a second's thought, that you can't do anything at all with it. Both alternatives must first be converted into outcomes before genuine trade-offs can be confronted. Thus, the competing outcomes might be fifty (plus or minus) burglaries per year prevented by the foot-patrol officers versus a savings of $300,000 in fleet maintenance.

Stop! Focus, Narrow, Deepen!

Up to this point, progress on the Eightfold Path has mainly bred expansion: of problem elements, alternatives, and criteria. It may also have bred an undesirable formalism, such that lists of these items may have come to have a life of their own. The outcomes matrix, which ideally would have served as a sort of "rough draft with attitude," may have displaced the problem with which the project began. But the object of all your analytical effort should not be merely to present the client with a list of well-worked-out options. It should be to ensure that at least one of them—and more than one if possible—would be an excellent choice to take aim at solving, or mitigating, the problem.

At a minimum, this need to focus, narrow, and deepen your analysis of the most promising alternative(s) means that you must think very seriously about (1) the politics of getting this alternative legitimated and adopted, and (2) the design of the ongoing institutional features that will have the power and resources to implement the policy or program in the long run. (For reasons of space, I do not discuss the first of these matters here, but see Appendix C for a very brief survey of pertinent institutional issues.)

STEP SEVEN: DECIDE!

This step appears in the Eightfold Path as a check on how well you have done your work up to this point. Even though you personally may not be the decision maker, you should at this point pretend that you are. Then, decide what to do based on your own analysis. If you find this decision difficult or troublesome, the reason may be that you have not clarified the trade-offs sufficiently, or that you have not thought quite enough about the probability of serious implementation problems emerging (or

not emerging), or that a crucial cost estimate is still too fuzzy and uncertain, or that you have not approximated carefully enough the elasticity of some important demand curve, and so on.

Think of it this way: Unless you can convince *yourself* of the plausibility of some course of action, you probably won't be able to convince your client—and rightly so.

Of course, when you tell your story to your client or any other audience, you may not think it appropriate to make reference to your own decision. You may choose, instead, to simply limit your story to a clarification of the relevant trade-offs and leave the decision completely up to the audience.

Apply the Twenty-Dollar-Bill Test

You should at this point subject your favored policy alternative to the "twenty-dollar-bill test." The name of this test is based on an old joke making fun of economists. Two friends are walking down the street when one stops to pick something up. "What about that—a twenty-dollar bill!" he says. "Couldn't be," says the other, an economist. "If it were, somebody would have picked it up already." The analogy is this: *If your favorite policy alternative is such a great idea, how come it's not happening already?* The most common sources of failure on this test are neglecting to consider the resistance of bureaucratic and other stakeholders in the status quo, and the lack of an entrepreneur in the relevant policy environment who has the incentive to pick up what seems like a great idea and see it through. Failure on this test is not fatal, of course. Just keep fiddling until you invent a variant of your basic idea that will pass.

STEP EIGHT: TELL YOUR STORY

After many iterations of some or all of the steps recommended here—principally, redefining your problem, reconceptualizing your alternatives, reconsidering your criteria, reassessing your projections, re-evaluating the trade-offs—you are ready to tell your story to some audience. The audience may be your client, or it may include a broader aggregation of stakeholders and interested parties. It may be hostile, or it may be friendly. Your presentation may be a one-time-only telling, or it may be merely the first effort in a planned long-term campaign to gather support

behind a legislative or executive change. (For a discussion of the issues likely to be involved in such a campaign, see Appendix D, "Strategic Advice on the Dynamics of Political Support.")

Apply the Grandma Bessie Test

Before proceeding further, however, you need another little reality check. Suppose your Grandma Bessie, who is intelligent but not very sophisticated politically, asks you about your work. You say you are a "policy analyst working for . . ." She says, "What's that?" You explain that you've been working on "the problem of . . ." She says, "So, what's the answer?" You have one minute to offer a coherent, down-to-earth explanation before her eyes glaze over. If you feel yourself starting to hem and haw, you haven't really understood your own conclusions at a deep enough level to make sense to others, and probably not to yourself either. Back to the drawing board until you get it straight.

Now consider the possibility that someone might actually wish to base a real decision or a policy proposal on your analysis. (It's been known to happen.) Even if you, as an analyst, would not have to deal directly with such a tough audience as Grandma Bessie and her kin (including, of course, Grandpa Max), it's likely that someone will have to do so. At the very least, therefore, you'll have to be able to explain your basic story to someone in sufficiently simple and down-to-earth terms that that someone will be able to carry on with the task of public, democratic education.

Gauge Your Audience(s)

Assuming that you've passed the Grandma Bessie test, identify and assess the likely audience(s) that are more sophisticated and involved than Grandma Bessie.

First comes your client, the person or persons whose approval you need most—your hierarchical superior(s), perhaps, or those who are funding your work. What is the relationship between you and your client? What you say and how you say it should depend a great deal on whether your relationship is long-term and on whether it is carried on face-to-face. In particular, how easy will it be for you to correct any misunderstandings that may arise?

Next, think about the larger political environment. Who do you think will "use" the analysis and for what purpose(s)? Will anyone pick up your results for use in an advocacy context? Would you regard this use of your results as desirable? Desirable if certain advocates use your work and undesirable if others do so? Do you want to do anything to "segregate" the elements of your analysis by the type of audience you might want it to reach—or not reach? Are you, perhaps inadvertently, using scare words that will alienate certain audiences?

If you are making a clear recommendation, make sure that you raise and rebut possible objections to it that might occur to various important audiences. Also make sure that you compare it to what you or others might regard as the next best course of action, so as to be ready to show why yours is better.

Consider What Medium to Use

You can tell your story in written or in oral form. In either case, communicate simply and clearly. The guiding principle is that, other things being equal, shorter is always better. In written presentations, good subheadings and graphics can make reading and comprehension easier. Visual aids such as flip charts, overhead transparencies, and computer-based slide projections often help in oral presentations.

Oral presentations require practice, self-discipline, and a little knowledge of some basic principles. The most basic of the basic principles are these: speak *very slowly and distinctly*; speak loudly enough to be heard throughout the room, even over distracting noises; speak in a lower register, which tends to increase perceived trustworthiness and credibility; do not fidget, but don't stand like a stick either; make lots of eye contact with audience members and, in doing so, don't favor one side of the room over another. Speaking slowly and distinctly is probably harder than you think—and more important, too.

Give Your Story a Logical Narrative Flow

Your story's flow should be designed with the reader's (or listener's) needs and interests and abilities in mind. In both written and oral presentations, it should be evident to the audience what motivates the entire

analysis. Therefore, it is best to open with a statement of the problem your analysis addresses.[20]

It is also important to *motivate* the more detailed steps in the flow of the analysis, that is, the sections, paragraphs, and sentences. Most readers will look for the motivation of any element in what immediately precedes it, which makes it important to avoid lengthy digressions. For these reasons, be wary of sections that you are tempted to label "Background." Similarly, the phrases "Before turning to . . ." and "It is first necessary to explain/understand the history of . . ." are usually signs of undigested material. Many readers will be alert to these danger signs, so you should be, too. Policy analysis, remember, is about the future. Perhaps surprisingly—it is often not obvious how, or whether—history affects the future, but the burden should be on the writer or speaker to show exactly how this effect will come about.

A common, though not uniformly applicable, organizing framework is to begin with a good problem definition and then to treat each alternative you consider as a major section. Within each such section, you project the probable outcome(s) of implementing the alternative and assess how likely such outcome(s) are in the light of some causal model and associated evidence. Following these discussions, you review and summarize the alternative outcomes and discuss their trade-offs. Note that in this framework there is no special discussion of criteria. However, sometimes an explicit discussion of criteria is important; it might appear either just before or just after the presentation of the alternatives and their associated outcomes.

Some Common Pitfalls

Following the Eightfold Path too closely. Sometimes it helps to structure your narrative flow as though you were leading the reader by the hand down the Eightfold Path. But usually this approach is a mistake. The purpose of the Eightfold Path, remember, is to help you *think through* a complicated problem. It is not at all necessary to use it in telling the story, though some aspects of it sometimes help.

20. An unusually fine manual on how to give slide-based oral briefings is published by the RAND Corporation (1994).

Compulsive qualifying. Don't interrupt the flow of an argument in order to display all the qualifications and uncertainties about some particular element in the argument. A linguistic way around this pitfall is to use adjectives or adjective phrases such as *most, on average,* and *more often than not* to state the generality, and then to return to the exceptions in the next section. (Or, if the exceptions and qualifications really can't wait, try a parenthetical sentence or a footnote.)

Showing off all your work. Don't include every fact you ever learned in the course of your research. Even if you've done a good and thorough job of research and analysis, most of what you have learned will prove to be irrelevant by the time you're finished. That is, you will have succeeded in focusing your own attention on what is really important and in downplaying what only appeared important at the beginning. You don't usually need to take your reader on the same wandering course you were obliged to follow.

Listing without explaining. Should you list every alternative policy that you intend to analyze in the report before you actually get around to providing the analysis? Such a list is a good thing when the alternatives are not numerous, when they are all taken seriously either by you or by your audience, and when they will prepare the reader's mind for the detailed assessment that will follow. However, if you have many alternatives to consider, the reader will forget what's on the list, and if some of the alternatives turn out to be easily dismissed upon closer scrutiny, you'll simply have been setting up straw men and wasting the reader's mental energy.

Similarly, be cautious about listing every evaluative criterion of interest before coming to the assessment of the alternatives being considered. Usually—though not always—there is not much to be said in a separate section about criteria that can't be better said when you're actually writing the assessment sections.

Spinning a mystery yarn. Start with the conclusion, the bottom line, the absolutely most interesting point you intend to make. Then present all the reasoning and evidence that you have to make your audience reach the same conclusions you have reached. In short, follow the opposite strategy from that which a novelist would follow.

Inflating the style. Avoid the pomposity and circumlocutions of the bureaucratic and the academic styles. (Essential reading: George Orwell, *Politics and the English Language.*) Also to be avoided: a chatty, insider's style—such as, "We all understand what creeps our opponents are, don't we?"

Structure Your Report

Unless the report is short, begin with an executive summary.

If your report is over fifteen to twenty pages long, say, a table of contents may well be helpful. If there are many tables and figures, either in the text or in the appendixes, a list of these items can be helpful as well. Detailed technical information or calculations should appear in appendixes rather than in the text. However, enough technical information, and reasoning, should appear in the text itself to persuade the reader that you really do know what you're talking about and that your argument is at least credible.

Use headings and subheadings to keep the reader oriented and to break up large bodies of text; make sure your formatting (capital letters, italics, boldface, indentation) is compatible with, and indeed supports, the logical hierarchy of your argument.

Table format. Current professional practice is very poor with respect to the formatting of tables. Do not imitate it but strive to improve it. Every table (or figure) should have a number (Table 1, for instance, or Figure 3-A) and a title. The title should be intelligible; it is often useful to have the title describe the main point to be learned from the table (e.g., "Actual Risks of Drinking and Driving Rise Rapidly with Number of Drinks—but Are Greatly Underestimated by College Students"). Each row and column in a table must be labeled, and the label should be interpretable without too much difficulty.

Normally, a table either is purely descriptive or is designed to demonstrate some causal relationship. In the latter case, it is usually desirable to create a table that makes a single point (or at most two) and that can stand alone without need of much explanation in the surrounding text. It is usually better to use two or three small tables to make two or three points than to construct one massive table and then try to explain its contents by means of the text that surrounds it.

Tables usually require footnotes, and there should almost always be a source note at the bottom. Sometimes these notes refer to data sources used to make the table, and sometimes they attempt to clarify the meaning of the row or column labels, which are necessarily abbreviated.

References and sources. Include a listing of references and sources at the end of the presentation. Books and articles should be cited in academic style (alphabetical order by author). The main point is to provide bibliographic help to curious and/or skeptical readers who want to track down references for themselves. There are several acceptable styles, but a good model is the one used in the book review section of the *Journal of Policy Analysis and Management*, which is simple and direct.

The current trend is toward "scientific citation" in lieu of footnote references in the text. That is, cite the author's last name and year of publication in parentheses in the text; the reader then consults the references section at the end for the full citation. If you follow this practice, the reference section should list the author(s) and year *before* the title of the work and other publication details. Sometimes you will want to include a page number in the parenthetical citation as well.

Legal citation style is quite different. If most of the references are legal, then it is advisable to cite all references in bottom-of-page footnotes. However, you can keep the scientific citation format within the footnote.

Notes are easier to read if they appear on the same page as the referenced text—that is, if you display them as footnotes rather than as endnotes.

Using a Memo Format

If your analysis is to be delivered in a memo, you should present it within a standard memo format, as follows:

[Date]
To: [Recipient name(s), official position(s)]
From: [Your name, position. Sign or initial next to or above your name.]
Subject: [Brief and grammatically correct description of the subject]

[First sentence or two should remind recipient of the fact that she or he asked you for a memo on this subject, and why. Alternatively, you could

explain why you are submitting this memo on this subject to the recipient at this time.]
[If memo is long, you might open and close with a summary paragraph or two. If you open with a long summary, the closing summary can be short.]
[If memo is long, consider breaking it up with subheads.]

Develop a Press Release

Most policy analyses do not become the subjects of press releases or of radio or television sound bites, but some do. Others become candidates for such treatment, and all can profit, even in their extended form, from the analyst's reflecting on how to condense the essential message. Hence, it will probably serve an analytical purpose—and sometimes a political one—if you sketch out a press release and/or a few ideas for sound bites. You may also want to think strategically and defensively to see how an opponent might characterize your work in a press release or sound bite.

PART II

ASSEMBLING EVIDENCE

Consider the problems confronting you as a researcher preparing an analysis of water pollution control programs for Blue Lake. You know that there is a dirty lake; that there is federal, state, and local legislation directed toward the end of cleaning up the lake (or preventing it from getting much dirtier); and that there is a state environmental protection office in the area that has something to do with administering some or all of the relevant antipollution policies or programs. But you need to know more. You need to map the present policies and programs, their political environment, the ways in which the bureaucracies function to implement them, and the criteria by which experts and nonprofessionals evaluate them. You also need to make some decisions about how you yourself will evaluate them. Then you need to learn what data are relevant to these criteria and figure out how to obtain these data. If you are planning to recommend changes in existing programs, you must develop the evidence that will permit you to make reasonable projections of the likely outcomes. In addition, you must learn what sort of changes the present set of relevant actors may be prepared to make or are capable of making.

These are large challenges, but your resources in time, energy, money, and the goodwill of potential informants and interviewers are probably not at all large. Moreover, you would like to finish the study in no more than six months, let us say, and you do not want to waste the first five months simply getting your bearings. Where are you to begin? And having begun, how are you to proceed efficiently?