ills—fever, gastroenteritis, tuberculosis, leprosy, ulcers, barrenness, and pneumonia. In this world of disease, they focused mainly on being struck by lightning, the affliction of barrenness, and one disease, bronchitis; they mainly attributed these troubles to specific types of immorality in which the victim would generally be seen as innocent and some powerful leader or village elder would be blamed. In other countries the prevailing culture promotes a different selection from a similar range of hazards. Sometimes, instead of pinning the blame on the village elders, it rather enhances self-blame: in those cases a disaster is the victim's own fault. Whether blaming the elders or blaming the victim, the type of society generates the type of accountability and focuses concern on particular dangers. Much as in biology, the cultural theory of risk perception which will be developed in these pages sees the social environment, the selection principles, and the perceiving subject as all one system. It does not ignore the reality of the dangers around. Plenty of real dangers are always present. No doubt the water in fourteenth century Europe was a persistent health hazard, but a cultural theory of perception would point out that it became a public preoccupation only when it seemed plausible to accuse Jews of poisoning the wells.

A cultural approach can make us see how community consensus relates some natural dangers to moral defects. According to this argument, dangers are selected for public concern according to the strength and direction of social criticism. Death and disease statistics are mobilized for justifying the criticism. Why is asbestos poisoning seen to be more fearsome than fire? Asbestos was developed to save people from burning; asbestos poisoning is a form of industrial pollution whose toll of deaths by cancer justifies a particular anti-industrial criticism more strongly than does loss of life by fire. Similarly, there is no obvious way in which the incidence of skin cancer caused by leisure-time sunburn can be mobilized for criticism of industry, and so we hear less of it. We shall show that this connection between perceived risk and moral blame does not reduce the selection of dangers to political analysis. At the

same time politics must not be avoided. A cultural theory of risk perception would be trivial if it shirked considering the distribution of power in relation to the pattern of risks incurred by Americans. Our guiding assumptions are that any form of society produces its own selected view of the natural environment, a view which influences its choice of dangers worth attention. Attribution of responsibility for natural disasters is a normal strategy for protecting a particular set of values belonging to a particular way of life. Consequently, research into risk perception based on a cultural model would try to discover what different characteristics of social life elicit different responses to danger.

This book is about how particular kinds of danger come to be selected for attention. We could have chosen to discuss perception of the risks of poverty or of war, but it is not an encyclopedia. Our book is about why, at this time, pollution has been singled out for special concern. Our answer will be that the choice of risks to worry about depends on the social forms selected. The choice of risks and the choice of how to live are taken together. Each form of social life has its own typical risk portfolio. Common values lead to common fears (and, by implication, to a common agreement not to fear other things). There is no gap between perception and reality and no correct description of the right behavior, at least not in advance. The real dangers are not known until afterward (there always being alternative hypotheses). In the meantime, acting in the present to ward off future dangers, each social arrangement elevates some risks to a high peak and depresses others below sight. This cultural bias[7] is integral to social organization. Risk taking and risk aversion, shared confidence and shared fears, are part of the dialogue on how best to organize social relations. For to organize means to organize some things *in* and other things *out*. When we say, therefore, that a certain kind of society is biased toward stressing the risk of pollution, we are not saying that other kinds of social organization are objective and unbiased but rather that they are biased toward finding different kinds of dangers.

How do we choose which risks to face? We choose the risks in the same package as we choose our social institutions. Since an individual cannot look in all directions at once, social life demands organization of bias. People order their universe through social bias. By bringing these biases out into the open, we will understand better which policy differences can be reconciled and which cannot.

Each side in the current risk debate is thought by the other to be serving interests of preferred social institutions. Whether the reference is to the industrial establishment or the "danger establishment" that lobbies against it, each takes the arguments of the other to be self-serving and therefore false. Cultural bias is much more complicated. What to do about it depends, first and foremost, on learning to recognize it.

To ask which is the correct description of rational behavior (that is, to ask what the real risks are) leads to an answer which finds irrational bias and misperceptions of real interest in the viewpoint of anyone who disagrees. Instead, cultural analysis shows how a given cluster of values and beliefs makes sense out of the various positions people take and the practices they employ. To what beliefs and values would members of society most readily refer in order for that kind of society to have credible, coherent institutions?

Once the idea is accepted that people select their awareness of certain dangers to conform with a specific way of life, it follows that people who adhere to different forms of social organization are disposed to take (and avoid) different kinds of risk. To alter risk selection and risk perception, then, would depend on changing the social organization.

Questions about acceptable levels of risk can never be answered just by explaining how nature and technology interact. What needs to be explained is how people agree to ignore most of the potential dangers that surround them and interact so as to concentrate only on selected aspects.

Let us try it another way: the key terms in the debate over technology are risk and acceptability. In calculating the probability of danger from technology, one concentrates on the risk

that is physically "out there," in man's intervention in the natural world. In determining what is acceptable, one concentrates on the uncertainty that is "in here," within a person's mind. Going from "out there" to "in here" requires a connection between the dangers of technology and people's perception of those risks. Neither the one approach (that the perils of technology are objectively self-evident) nor the other (that all perceptions are subjective) can connect the two. Only a cultural approach can integrate moral judgments about how to live with empirical judgments about what the world is like.

To develop the argument, we turn to a cultural change that has taken place in our own generation. We begin with a sense of wonder. Try to read a newspaper or news magazine, listen to radio, or watch television; on any day some alarm bells will be ringing. What are Americans afraid of? Nothing much, really, except the food they eat, the water they drink, the air they breathe, the land they live on, and the energy they use. In the amazingly short space of fifteen to twenty years, confidence about the physical world has turned into doubt. Once the source of safety, science and technology have become the source of risk. What could have happened in so short a time to bring forth so severe a reaction? How can we explain the sudden, widespread, across-the-board concern about environmental pollution and personal contamination that has arisen in the Western world in general and with particular force in the United States?

Our argument is that a complex historical pattern of social changes has led to values that we identify as sectarian being more widely espoused. The sectarian outlook has three positive commitments: to human goodness, to equality, to purity of heart and mind. The dangers to the sectarian ideal are worldliness and conspiracy. Put into secular terms, worldliness appears in big organization, big money, and market values—all deny equality and attack goodness and purity; conspiracy includes factions plotting secret attack, transporting evil into an essentially good world. Infiltration from the evil world appears as Satanism, witchcraft, or their modern equivalent—

hidden technological contamination that invades the body of nature and of man. We shall argue that these ideals and these dangers respond to the problems of voluntary organization: they are the daily coinage of debate in groups that are trying to hold their members together without coercion or overt leadership. The remedies most easily proposed in such organizations are to refuse to compromise with evil and to root it out, accompanied by a tendency toward intolerance and drastic solutions. These organizations depending on the voluntary principle also tend to reject wealth. Nature in the wild, uncorrupted by social artifice, equivalent to a society without social distinction, is their preferred emblem of godliness and symbol of unworldliness. Before developing this cultural explanation of the current directions of risk aversion, we should consider some rival theories.

A favorite explanation for the intense new interest in risk is that the United States is richer and Americans can now afford to be more cautious. Lester Lave writes:

> Although no evidence exists that Americans have become sated with the products of the U.S. industrial economy, it is natural that they should want a more pleasant environment, lower risks associated with their products and work places, and general health improvements to accompany their increases in real income. What appears to be a paradox ["that Americans are safer now than ever before, but at the same time they are more concerned about health and safety than ever before"] is resolved by recognizing the rapidly increasing desire for lower risk.[8]

After all, this argument runs, the more people have, the more they can lose. Once people have satisfied their main material wants, from cars to television, they can concern themselves with safety. So far as it goes, this explanation is plausible. We do more for self-protection because we are able to do it. Safety is presented as another consumer good, part of general material advance. But is it true that richer people are more averse to risk? If that is so, why are they not risk averse to economic disaster, crime, and war? Why do they select technological

rather than other kinds of risks? Even more fundamentally, why should the success of a way of life generate self-doubt among its adherents? Success could more likely be expected to generate confidence in more of the same. The problem is not merely a rise in the value of safety. There is the proposition that affluence has bred distrust of the culture that created it. Where does this idea come from?

The proliferation of research on risk has called forth various sociological theories about the sources of public concern. Divisions among the general public are scanned to see whether changes in income, education, or rural and urban dwelling patterns can account for changing public judgments. It is reported that public-interest groups tend to be run by individuals in the professional and managerial occupations with higher-than-average income and education. More to the point —this is true of leaders everywhere—their rank and file are more educated than is the general public.[9] Such observations lead to a variant of this explanation: education itself has bred a social conscience.

It is plausible that the most alert watchdogs on behalf of society should come from the most educated classes. But this in itself does not explain why the last twenty years should have seen the change and why concern should take this particular direction. For education to explain the new attitudes toward risk, one would need to indicate some threshold at which the educated elite tips over from unconcern to concern. This is provided by Maslow's theory of stages of wants.[10] When struggling for bare survival, according to Maslow, the individual has a narrow perspective; his political demands are material, for food and shelter. With industrial wealth guaranteeing economic well-being, the individual looks around for forms of personal expression and personal freedom. At a more developed stage of the economy, the individual can afford the luxury of a social conscience; at this point altruistic concerns come to the surface. Hence the growth of public interest lobbies, and so on. Still this does not explain the selection of

risks. Why is social conscience concerned with environment and not with the education of the poor or relief of the indigent?

Since they no longer need to worry about the safety or sustenance of their bodies, the educated public can presumably satisfy what Ronald Inglehart calls nonmaterial needs for group identification and for self-realization.[11] Their aims are not for more income, but for a high quality of life, including democratization of work. At this stage what people most want is a sense of individual control over social forces. This want is so imperious that their demands tend to be "non-negotiable."[12] Thus Inglehart uses Maslow's stages to explain a new era of public sensitivity to oppression and of concern for fellow men on an international scale of comparison. The idea is pleasing. It supposes that the social classes least motivated by concern for public welfare are only those less prosperous. All people would be speaking for the public interest if they were fortunate enough to have solved their material and money needs. One might naturally expect public-interest groups to concentrate on spreading prosperity. Psychology, however, seems to be against the theory; so does history. It is easy to think of extravagantly affluent civilizations where the elites were not at all public-spirited.

Maslow's argument supposes that a mood of public altruism is generated by the sheer material successes of industrial development. The empirical difficulty is that altruism is not a post-industrial monopoly. Most nonindustrialized cultures have their equivalent of public-interest watchdogs, however low their level of poverty. It is hard to name a time in the last 100 years, moreover, when Western industrialized society was not rich enough to qualify for the last altruistic phase, whose predominance among us now needs to be explained. What is it about affluence now and security now that is different? According to our argument, advanced technology is not the explanation. There is no unequivocal body of evidence that life is (or is becoming) less safe; on the contrary, such tentative evidence as there is leads in the opposite direction—life is

growing longer not shorter; health is better not worse. We get more insight from asking why certain risks get selected from the range of dangers that always threaten. This question points to the growth of sectarianism as a more convincing answer.

The organization of this book reflects the kind of question we ask: What sort of people would use risks to nature to get other people to change their ways? If we asked, "What has modern technology done to nature to cause so much concern?", we would concentrate on evaluating the scientific evidence about environmental damage. Instead we begin by analyzing the arguments connecting technology to environmental decline—risks are hidden, involuntary, and irreversible—in order to show that the judgments are essentially social rather than scientific. One response to this thesis is that we modern people see things differently precisely because we share an empirical, evidential, scientific ethos. In order to show that risks are socially selected, in our second chapter we compare "advanced" views with those of "primitive" peoples. Readers are welcome to see if they can discern differences between "us" and "them" in the way that dangers are selected for public concern. Even if we were all scientists, the third chapter shows, we would be no nearer agreement because scientists themselves are as divided on risk as are the rest of us. Nor will the procedures of risk assessment help in this regard, the fourth chapter asserts, because all modes of assessment are biased by the social assumptions they make. Having done our best to dispose of the contention that selection of dangers could be determined by direct assessment of the physical evidence, we begin to develop the case for social selection of risk. Chapters five through seven argue that each culture, each set of shared values and supporting social institutions, is biased toward highlighting certain risks and downplaying others. Along the way, we mix examples of risk selection among people like ourselves and people such as the Amish and the Hutterites, contemporaries who have a strange appearance to the modern eye. One reason for doing this is that these peoples and their cultures have a pronounced identity, so they can be readily described. A more important

reason lies at the heart of our position: If risk and culture are related in the ways we claim, then these relationships should stand out among the most diverse people way back when and not only among us moderns here and now. Since this is a book that explicitly aims to explain us to ourselves by making explicable heretofore puzzling phenomena—the rise of alarm over risk to life at the same time as health is better than ever before—we go on to apply our cultural theory to American conditions. We end by considering the policy implications of the cultural selection of dangers, denying that it forces us to adopt an unscientific posture and affirming our capacity to cope resiliently with risk.