

The Precautionary Principle Puts Values First

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The precautionary principle is an emerging principle of international law but has only recently been proposed in North America as a new basis for environmental policy. On the surface it is a simple, common-sense proposition: in the face of possible harm, exercise precaution. But the enthusiasm the principle has stirred among public advocates suggests it has a deeper appeal. It is, in fact, based on values related to "forecaring for life" and the natural world. The principle cannot effectively be invoked without stating these values up front. The principle makes it clear that decisions and developments in science and technology are based first of all on values and only secondarily on scientific and technological fact and process. Moreover, a precautionary approach is best carried out in the context of goals that embody the values of communities and societies.

Key words: *Precautionary principle, environmental ethics*

Since September 11, 2001, the notion of precaution has taken a prominent place in the consciousness of Americans. That tragedy has stirred dread of further tragedies, great and small; it has exposed our ignorance of the complex processes that are behind such unthinkable actions; and it has left us far more wary of many things than we were before. Along with the grief and anger stirred by the attacks has come a renewed impulse for prudence. Americans have received a large dose of unwelcome lessons in becoming more careful, more attentive to their surroundings.

In such a situation, precautionary action represents the normal human instinct for self-preservation. Some of the actions in the wake of the disaster have been extreme and somewhat less than rational: buying gas masks and antibiotics that may or may not offer protec-

tion when and if people need them, and then only against the smallest fraction of the unlikeliest forms of attack. Other actions have made more sense. Greyhound bus service was stopped nationwide for 6 hours on October 3 after an attack on a driver precipitated a fatal accident. When it became clear that the attack was a case of random rather than organized derangement, service was resumed.

In all cases, we have had to think about how to act in the face of the unknown. Americans have become less carefree and careless. When we recognize a course of action that might offer some protection or represent prudence, we consider it seriously, even if it requires giving up something we cherish or take for granted, such as our freedom of movement.

All this has some parallels to the precautionary principle, that is, to precaution applied to environmental policy. Both proponents and critics of the precautionary principle, in fact, have often assumed that the principle represents simply a statement of this normal human instinct to act with caution, or take precautions, in the face of poorly understood danger. Proponents have pointed out that it only makes sense to act with prudence to keep from harming ourselves and the Earth through our own technologies. Critics have pointed to all the cherished things, such as free-ranging technical creativity, that would presumably be given up by such prudence, and they have claimed that prudence taken to the extreme leads to paralysis (Myers, 2000).

Both points of view have their place, and the precautionary principle certainly has to do with taking precautions. But it is about something more as well. That "something more" is behind both the enthusiasm with which the principle has been embraced in certain quarters and the vehemence of the opposition to it in others. It has to do with values. When set in the context

of the values it represents and requires, the precautionary principle becomes something other than a cautious shrinking from danger. It becomes a powerful agent of change.

What Is the Precautionary Principle?

The precautionary principle¹ originated in Germany more than 20 years ago, when private landowners noticed that their treasured forests were dying. They appealed to the government to do something about the tragedy. Germany began an all-out effort to cut back power plant emissions that were producing acid rain, in an effort to save the Black Forest. Later, that urge to protect and prevent was translated into a formal principle of German law, the *Vorsorgeprinzip*. In the years that followed, it was enshrined in international law as the precautionary principle (Raffensperger & Tickner, 1999).

Each version of the precautionary principle is based on three core elements: potential harm, scientific uncertainty, and precautionary action. The most influential statement of the principle is no doubt the one contained in the 1992 Rio Declaration on Environment and Development:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. (SEHN, 2002)

Until recently, the United States officially supported most of the international accords that include the precautionary principle. However, in the past several years, strong opposition has developed to the principle in U.S. industry and in government agencies supporting commerce. In January 1998, SEHN convened a small gathering of activists, scientists, and policy makers to discuss using the precautionary principle as a basis for reforming environmental policy in the United States. The statement produced by this gathering, the Wingspread Statement, included this now widely cited definition of the precautionary principle: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect rela-

tionships are not fully established scientifically." (SEHN, 2002)

The Wingspread Statement went on to define three additional components of the principle's application:

In this context the proponent of an activity, rather than the public, should bear the burden of proof. The process of applying the Precautionary Principle must be open, informed, and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action. (SEHN, 2002)

These components—shifting the burden of proof; assessing alternatives; and transparent, democratic action—had often appeared as part of or alongside the precautionary principle in international treaties and various national policy statements. The Wingspread Statement brought them together and thus defined not only the principle itself but something of the way in which it was to be applied.

The Wingspread conference and its aftermath introduced the precautionary principle for the first time to, among others, those members of the U.S. activist community who had been less involved with international affairs. The idea quickly took on a momentum of its own. Discussions, statements, and implementation efforts on the principle began springing up across the country. For example, a statewide precautionary principle project was launched in Massachusetts; Marin County, California, and other localities debated precautionary principle resolutions; Harvard University held forums; the United Methodist Church issued a statement; Canada considered clamping down on lawn chemicals on the basis of the principle; and Minnesota conducted inquiries on incorporating it into public health planning.

The spread of the precautionary principle in the United States is not coordinated in a single campaign and is therefore difficult to quantify and track. It is clear, however, that the demand for information about the principle and how to use it has grown exponentially in the past 4 years. In a recent 12-month period, for example, the small staff of SEHN, which has continued precautionary principle work, gave about 100 presentations and media interviews related to the precautionary principle. Most of these were by invitation and reached audiences that included activists who were eager to take the idea and run with it, and did so.

Books, articles, and fact sheets published on the principle continue to be in high demand and generate enthusiastic response.

Meanwhile, widening support for the precautionary principle led to its inclusion in the body of two more environmental treaties, both completed in 2000: the Biosafety Protocol, dealing with the spread of living modified organisms, and the Treaty on Persistent Organic Pollutants. Opposition to including the precautionary principle, led by the United States, was strong. Nevertheless, the principle appears in these treaties as an enforceable measure for the first time. In previous agreements, it has appeared only as an instruction or guideline.

Why the Principle Appeals

Activists' and advocates' responses to the principle and their explanations of why it has become important and useful to them vary. Almost universally, however, they see it as an exercise in something beyond caution, or even precaution. It is not just a matter of buying up gas masks, so to speak, or reinforcing cockpit doors. They nearly always describe it instead in positive terms. Activists who have become discouraged by the Sisyphean task of trying to protect the Earth and the health of communities in the face of out-of-control technologies and damage often say that the precautionary principle gives them hope. They say it is something positive to work for and that it embodies common sense. Organizers and policy advocates alike express gratitude for a unifying idea that makes sense of everything they are trying to work for and that removes some important barriers to that work, at least in their own minds. Inevitably, values creep into these discussions.

A typical range of responses came from a group of ecosystem scientists and advocates assembled by SEHN in May 2001 in Leavenworth, Washington, to discuss how the principle might apply to decisions related to ecosystems. After more than a day of discussion that went straight to the principle's practical implications, the group was asked, Is the precautionary principle indeed of use to you? Some of their answers had an equally practical tone:

By using precaution you articulate uncertainties that are already there. It is better to think out consequences. It is important science, but it is also an important public education tool.

It helps people understand what to do with uncertainty.

It is an organizing principle in theory—it takes our ideas and make sense of them—and in practice: it can galvanize a movement.

A community organizer who works on forestry issues said that the principle is ideal for those who deal with federal agencies as long as it is presented as a useful way of making decisions, not a regulatory requirement.

But the Leavenworth participants also spoke of the principle's deeper appeal. The leader of an urban ecosystem restoration campaign spoke first of the practical importance of articulating principles and plans to stir research; bring in money; give managers guidance; and produce the influential books, articles, and conferences needed for a successful campaign. But, he added, the precautionary principle "inspires people with hope. . . . This is a positive approach."

A marine biologist mentioned values: "We value that which we've lost or are about to, or is in short supply. We are willing to take more extreme measures to protect it."

A community organizer said that the principle is the "articulation of an ethic that implies responsibility. We have our Bill of Rights but we haven't focused on our responsibilities—and our reciprocal obligations to the universe."

After some discussion, the group insisted on inserting a new item into the meeting agenda, which had been geared toward practical considerations and outcomes. The participants wanted to make a statement that expressed their deep reasons for espousing the precautionary principle and the place the principle held in the constellation of values by which they lived and worked. The participants wanted to say, for public record, what they believed and held dear.

The Icicle Creek Statement drafted at Leavenworth (SEHN 2002) is similar to another statement issued in November 2000 by a group convened to articulate an environmental ethic: the set of values served by the precautionary principle and out of which it arises (see the Appendix).

Putting Values up Front

What is the significance of this impulse to talk about values, and what does the precautionary principle have

to do with it? Talking openly about values is a relatively recent development in the established environmental movement, which has long been accustomed to “leaving values at the door,” often under explicit instruction from agency officials and industry representatives, and confining discussions to “the facts” or “science” or “sound science.”

One of the scientists at the Leavenworth gathering said that although the precautionary principle is seen by some as antisience, in his view, it is not about science at all. “The judgments we make are value laden. It gives us a framework in which to interpret science.”

This response is similar to a refrain that has appeared in some recent writing on science and advocacy: State your values up front, because decisions and developments in science and technology are based first of all on values and only secondarily on scientific and technological fact and process per se.

With regard to decisions about public issues, expertise in terms of skill, knowledge, or experience is often less important than basic questions of values. Is abortion wrong? Is it moral to deny medical care to a child whose parents have no health insurance? Should murderers be put to death? Is it acceptable to perform medical experiments on human beings without their consent? There are no scientific answers to these questions, or thousands more like them. They can only be answered by asking ourselves what we believe and what we value. In addressing these questions, finding knowledgeable experts is actually less important than finding experts who share our values. (Rampton & Stauber, 2001, p. 297-8)

In the preface to *Pandora's Poison: Chlorine, Health, and a New Environmental Strategy*, Joe Thornton (2000) made this declaration:

No analyst of policy can be truly objective, because the process of weighing options for social action always filters the findings of science through a set of political and ethical assumptions and values. With that in mind, I have tried to do two things: to make explicit the ethical and political views that undergird my own evaluation of the science and to be as fair as possible in my presentation of the scientific evidence. I cover what I believe to be the most

important information relevant to the case I am making and evaluate its strengths and weaknesses, but I do not claim balance or objectivity, because these are neither appropriate nor possible in this kind of effort. (p. ix)

Hugo Alroe and Erik Kristensen (in press) described the need for scientists to recognize the value system within which they work and to observe and describe it as objectively as, and alongside, the research itself:

An overall distinction between the system and its environment needs to be made—the system has to be identified as an object of observation. This first movement also involves the determination, or at least presumption, of certain goals and values upon which the choices and delimitations that need to be made in planning and initiating research, can be made. The ensuing observations are thus based on these value-laden choices.

The precautionary principle has many practical uses and applications. But both its instinctive appeal and the sharp criticism it evokes have less to do with practicalities and more to do with the fact that it brings values to the forefront of discussion. Invoking the precautionary principle is an acknowledgement that policy choices are value laden, and it is an explicit endorsement of certain values.

The precautionary principle embodies certain values; it exposes the contradictory values that currently govern decision-making processes; it can be effective only if certain values are allowed to enter into the decision-making process. Moreover, the principle may be most effective if specific values, in the form of goals, are allowed to guide the entire process from beginning to end.

What the Precautionary Principle Is up Against

Activists understand the principle and how it should work almost instinctively, and they find it easy to explain to fellow citizens, partly because precautionary action is a normal human response (as following the September 11 attacks). The biggest difficulty in that regard, a recent exercise by the Massachusetts Precautionary Principle Project revealed, is that many of the activists' fellow citizens believe that something

like the precautionary principle already governs environmental policy in the United States.

It does not, of course. Although that may have been the original intent, the systems that have evolved in the United States and elsewhere to protect humans and the environment have not been doing their job. Humans have been routinely leaping without looking, and right into dire messes. How big these messes have become was outlined by the zoologist Jane Lubchenco in her parting speech as president of the American Association for the Advancement of Science (Lubchenco et al., 1998). Her eloquent litany, which has been widely quoted since, sums up the case against “assimilative capacity”: the notion that the Earth has a certain capacity to assimilate damage and that humans have not yet pressed those limits:

Between one-third and one-half of the land surface has been transformed by human action; the carbon dioxide concentration in the atmosphere has increased by nearly 30% since the beginning of the Industrial Revolution; more atmospheric nitrogen is fixed by humanity than by all natural terrestrial sources combined; more than half of all accessible surface fresh water is put to use by humanity; about one-quarter of the bird species on Earth have been driven to extinction; and approximately two-thirds of major marine fisheries are fully exploited, over exploited, or depleted. (p. 491)

How have we gotten to this state? Part of the explanation is that neither international environmental agreements nor national regulatory systems seem capable of keeping up with the increasing pace and cumulative effects of environmental damage. It is not enough to focus on cleaning up messes after the fact, what environmentalists call “end-of-pipe” solutions. Scrubbers on power plant stacks, catalytic converters on tailpipes, recycling, and supersized funds dedicated to detoxifying the worst dumps are not enough, nor is it enough to address problems only after they have become so obvious that they cannot be ignored; often, literally waiting for the dead bodies to appear.

Another important part of the explanation, however, is that after responding to the initial burst of concern for the environment in the 1960s and 1970s, the U.S. regulatory system and others like it have been subverted by commercial interests, with the encouragement of political leaders and, increasingly, the com-

plexity of the court system. Economic interests have fought for and regained ascendancy. Environmental laws were subjected to an onslaught of challenges throughout the 1980s and 1990s; many were modified or gutted, and all were enforced by regulators who were chastened by increasing challenges to their authority.

Moreover, commercial interests were reinforced and expanded globally in the last years of the century, culminating in sweeping, enforceable agreements that give unprecedented leeway to international commerce. The World Trade Organization, established in 1995, and the 1997 North American Free Trade Agreement institutionalized, on a multinational scale, the ascendancy of commerce over environmental and public health concerns (Wallach & Sforza, 2000).

One tool that has proved highly effective in the battle against environmental regulations is quantitative risk assessment, which became standard practice in the United States in the mid-1980s and was institutionalized in the global trade agreements of the 1990s. Risk assessment presents numbers that purport to state definitively how much harm might occur. It then becomes incumbent on laws and those who enforce them to decide how much harm is acceptable. Risk assessment not only provides the answers; it dictates the questions (O’Brien, 2000).

Commercial and industrial interests have been increasingly able to insist that harm must be proved “scientifically,” in the form of a quantitative risk assessment demonstrating harm in excess of acceptable limits, before action is taken to stop a process or product. These exercises have often been linked with cost-benefit assessments, which give much weight to immediate monetary losses from regulations and little, if any, weight to costs to the environment or future generations.

This process—determining acceptable limits of harm, putting numbers to possible harm, and quantifying the costs of taking action to prevent harm—is called sound science by those who use it. It is indeed based on important scientific tools, but it has placed a heavy burden on those tools, requiring sure answers from an inherently inexact process. Consequently, quantitative risk assessment is subject to manipulation and riddled with disguised uncertainties.

The effect has been to give the benefit of the doubt to products and technologies and their proponents. Thus, a process that is promoted as objective and value free is actually based on a specific value system: one that places economics above other considerations.

A Contest of Values

The precautionary principle serves a different set of values, more or less along the lines of those articulated in the Blue Mountain statement: what Joe Thornton (2000) called the ecosystem paradigm, in contrast to the risk paradigm. People who hold these values are likely to have little difficulty accepting the principle, whether as a practical tool to be applied in specific instances or as an overarching guide to human behavior in relation to the environment. Those who have a strong stake in putting economics first, on the other hand—whether in regard to a specific product, technology, or activity in which they have a stake or in the interest of protecting an entire economic system—are likely to find the precautionary principle threatening.

This plays out on one level as a challenge to cherished norms and taboos that govern U.S. policy: the injunction to “leave values at the door” and “restrict discussions to science,” the priority given to free trade and technological development of any kind, the prejudice against social planning. A precautionary approach exposes and stands in contrast to the values that have implicitly, but seldom explicitly, governed decision making.

It is little wonder, then, that the Chlorine Chemistry Council identified the precautionary principle as the greatest emerging threat to that industry as early as 1994 (Rampton & Stauber, 2001) or that precautionary principle advocates are attacked regularly and vehemently. In one recent month, for example, these warnings appeared:

The precautionary principle is a lethal weapon aimed at today’s most innovative products and most promising scientific breakthroughs. (Cohen, 2001).

Radical environmental groups brandishing the precautionary principle have prevailed upon governments in recent decades to assail and intimidate the chemical industry and, more recently, the food industry. (Miller & Conko, 2001).

The headline of a memo to public relations firms after Hudson, Quebec, banned lawn pesticides on the basis of the precautionary principle read, “One small town destroys major portion of a national pesticide

market: seven lessons for PR, marketing and branding folks” (ePublic Relations, 2001).

Besides challenging the sensibilities of the chemical industry, a precautionary process or approach does embody certain values that run counter to the economics-first paradigm. In the precautionary process outlined in the Wingspread Statement, the most explicit embodiment of value or ethics lies in “burden shifting.” Who or what gets the benefit of the doubt: products or the people they might harm? Perpetrators or possible victims? The advance of technology or the survival of ecosystems? Burden shifting, sometimes called burden of proof, burden of safety, or burden of responsibility (Tickner, 2000), is one of the least defined aspects of a precautionary approach. But the aim of including it is clear: to give the benefit of the doubt to life over technology when the latter is likely to harm the former.

Democracy and transparency in the decision-making process also represent an ethical component: the right to know, the right to be included in decisions that affect one, the duty to include all who are affected. Including such ethical considerations is a statement of values. But this kind of process also has a practical aspect. The more information gathered from varied sources, the more satisfactory a decision is likely to be.

So too is the assessment of alternatives (O’Brien, 2000). It makes practical sense to look at alternatives, to seek better ways of doing things, to be able to choose among different possible methods and outcomes rather than being locked into the dictates of things as they are or some inevitable march of progress and technology. However, deciding what is “better” depends on the values that guide the process.

The precautionary principle and the process of applying it by no means eliminate the value of economics from the equation. Any “democratic and transparent” process must include economic considerations. However, deliberately and consistently putting economics first leads to a different kind of precaution, a kind that is routinely exercised at the expense of the life and health of humans and ecosystems. This is a value judgment. It makes a difference which values guide a decision.

Forecaring

Precaution is perhaps too generic a term. Precaution can indeed be applied at opposite ends of the spectrum, guided by entirely different goals. In fact, some-

thing was lost in the translation from the German term *Vorsorgeprinzip* to “precautionary principle” that might have reduced such confusion. The term *Vorsorge* is more value laden than the term *precautionary*. *Vorsorge* means, literally, “forecaring.” *Vorsorge* carries the notion of preparing for a difficult future, like buying extra food and candles before a blizzard. It is proactive, whereas precaution seems to be a reactive stance. Thinking, worrying, and caring about the future call not only for taking protective and preventive measures but also for active planning, a commitment to the future of the Earth and the beings that live on it. On the basis of this notion, Germany, Sweden, Denmark, and other countries have begun to set goals for the kind of life they want to make available for future as well as present generations.

The precautionary principle, or forecaring, gives us a way to change our behavior, personally and collectively. It reminds us to acknowledge our mistakes, admit our ignorance, and act with foresight and caution to prevent damage. It also removes the barriers to that kind of precautionary action.

The precautionary principle singles out scientific uncertainty because it so happens that scientific uncertainty has often been the key argument against protective action: Let’s wait until we know for sure how much human activity is influencing the climate before we make any changes. Let’s find out exactly what levels of arsenic in drinking water are unsafe before we set stricter standards (Myers & Raffensperger, 2001).

The precautionary principle calls for the humble recognition that the world is full of scientific uncertainties. The Earth is made of complex, interrelated systems, vulnerable to harm from human activities and resistant to comprehensive understanding. Precaution is an expression of values that give priority to these vulnerable systems, including human bodies.

Putting the Precautionary Principle to Work

All this would seem to pose a daunting challenge for communities and concerned citizens. Applying the precautionary principle means translating those values into policy, practices, laws, and lifestyles. Implementing the precautionary principle has indeed proved challenging. However, the greatest difficulties may be the result of a failure to recognize the extent to which the principle runs counter to the current value system, especially that operating in the United States. Recognizing and building from the primacy of values may offer a better solution.

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The European Union’s (EU) effort to use the precautionary principle in the international trade arena is a cautionary tale (Wallach & Sforza, 2000). The caution is that taking the principle out of its value context makes it extremely difficult to apply.

Within the EU, the precautionary principle has been a useful tool for dealing with a narrow range of circumstances. It is not so much a rigid rule as a rule of thumb: When there is reason for concern, go slow, take some kind of preventive action until you have better information, and give consumers a say. This is consonant with a value system in which economics figure large but not always supreme. Throughout the EU, a social consensus has arisen around quality of life that includes many factors: culture, environment, health, aesthetics, and so forth, as well as economic prosperity. The precautionary principle has been a minor pillar buttressing this consensus. Governments have become accustomed to gauging decisions to political as well as scientific and economic realities, taking into account this consensus on the broad range of social goals. The precautionary principle is one policy instrument in this approach.

However, in the international trade arena, economics are the first and nearly the only consideration. There is little room for either rules of thumb or the accommodation of a particular society’s political will. As many analyses have made clear, the rules are rigid, and they are geared to removing obstacles to trade. As a result, the EU has had to accept trade sanctions and pay fines rather than import hormone-fed beef, which European consumers clearly do not want because they do not believe it is safe. Invoking the precautionary principle did not help. And the EU has had to engage in years of negotiations to gain any freedom at all to choose whether or not to import genetically modified organisms, for similar reasons.

In these controversies, the arguments have boiled down to what is safe and unsafe, who decides, how much scientific evidence is needed to prove safety or harm, and whether all these arguments are really about something else: economic competition, for example. And they have gone on for years.

Beginning With Harm . . .

Activists in the United States may face similar difficulties if they choose to use the precautionary princi-

ple primarily as a way to set different—that is, more conservative, more protective—standards of harm, without considering the value system in which they operate. In a recent speech to a conference on science and the precautionary principle, Mary O’Brien outlined the differences between beginning with harm and beginning with goals that embody values.

The first approach, a “harm-driven process,” examines a proposed or ongoing activity for some evidence of potential harm. If there is some likelihood of harm, the precautionary principle comes into play; alternatives are examined, responsibility is allotted (burden of proof), and the voices of all concerned are heard. A logical consensus is reached, a decision is implemented, and its consequences are monitored.

Although this all seems quite logical, imagine how this process works in a given community or around a given issue. Who decides what is harmful, whether harm is likely, and how likely? Who decides to invoke the precautionary principle? Who examines the alternatives and allots responsibility, especially if moral responsibility may differ from legal responsibility? At every step of the way, the usual resistance will be encountered and the customary confrontations are likely to take place: city fathers versus citizens, factory owners versus residents, environmentalists versus labor, and so on. In all of these, the “concerned citizen” bears most of the burden of building a case and bringing about needed change. The role of science is relegated to demonstrating harm, actual or possible.

There is nothing wrong with this approach. It is not much different from the hard-fought campaigns that have addressed known harms such as radioactive waste and dioxin. The difference is that using the precautionary principle is a way to build such a campaign against a potential harm, before the bodies pile up, so to speak: for instance, in the early stages of the development of a technology such as genetic modification; before the siting of a particular factory that will use and may emit toxins; when considering whether roads should be built in a wilderness area; or on early warnings of harm from a substance previously thought safe, such as phthalates used in plastic equipment in hospitals.

... or Setting Goals?

What if, instead, activists began by developing consensus—among themselves, in communities or regions, nationally, or even globally—around particular values? The most direct way to do this is to develop

consensus around goals. Although this may seem even more challenging to those of us who live in a nation where social planning is frowned on, it may not be in all cases.

We look enviously at Sweden, whose government some time ago set the goal of eliminating toxins from mothers’ milk. Period. This in turn meant developing plans for how that was to be done, step by step, on many fronts, with intermediate goals to mark progress. We might wish our government worked so benignly and with such foresight.

If national governments do not act that way, local ones may, prompted by citizens. More important, the possibility of developing social consensus and the processes for doing so are among the greatest strengths and gifts conferred by a free democratic system. Governments play a role in developing consensus and setting goals but may not be the primary moving force. Events may be, or popular opinion, or organized campaigns, or some combination of these. And consensus need not imply full agreement or a united, lock-step effort.

A vivid current example is the consensus that has emerged, at least in industrialized nations, around eliminating terrorism. This goal emerged suddenly because of events. It requires action of many kinds on many fronts. Governments have to do something, but they also have to listen to public opinion. That opinion varies more than it seemed to in the first days after the attacks on New York and Washington, DC. A genuine debate has emerged on violence and responses to violence, the difference between retaliation and justice, between understanding the roots of violence and justifying it, and so on. It has become clear that terrorism cannot be eliminated simply by eliminating known terrorists. Many things must change, and many people must participate in instigating and carrying out these changes.

The goal of eliminating terrorism, despite the monstrous deeds that prompted it and despite the war rhetoric, has positive aspects. The United States is united, even though we may disagree on exactly what it is that unites us and disagree very strongly on the paths to reaching this particular goal. The fact that at least one goal is shared means that differences are likely to get a better, more cooperative airing.

In the context of this shared goal, precautionary action and attitudes take their proper place. Instead of cowering in fear, some of us see the value in taking certain risks—getting on planes—but acting prudently

when it makes sense to do so—insisting on beefed-up airport security. We see that certain behavior, such as where U.S. troops are stationed, has been far riskier than we realized. We now must decide what to do about that and about a host of other things such as how we display and share our wealth, spread culture and influence, form and carry out foreign policy, and so forth. All of this is a legitimate area for debate and change in the name of the broad goal of eliminating terrorism, or as we might put it positively and even more broadly, making the world a safer place. That is a highly precautionary goal, in the forecaring sense.

Communities do this all the time. In the name of local pride and identity, or simple goals such as “clean and green,” “safe schools,” or “zero discharge,” or even an apparent oxymoron such as “Chicago Wilderness,” communities have reduced air and water pollution, laid down bike paths, stopped using lawn chemicals, cajoled industries into exceeding regulatory requirements, and restored struggling ecosystems.

Precaution applies at all stages of such campaigns, but values, in the form of the goal, come first. The goal will reflect some form of forecaring. Democracy and transparency are built in because shared goals invite and require cooperation on many fronts. The relative value of different paths to the goal must be assessed—this is alternatives assessment—but these multiple paths may not be mutually exclusive. Scientists help assess these alternatives as well as the evidence of harm or the possibility of harm that may have prompted the original goal. Even making the case that something will cause harm becomes a different kind of exercise. Instead of concentrating on building a case for why an industry, for example, should take an action or be forced to do so, a goal-oriented approach calls for acting appropriately on the basis of reasonable information and how a particular activity serves or does not serve the goal. Instead of asking how much harm will be done, the question becomes, How much harm can we avoid?

Once a goal is set, it is no longer so difficult to imagine who does what. Government, citizens, scientists, industry, and organizations may all have their roles, and these may shift and vary. It may or may not be necessary or advantageous to create new organizations or new forums for making decisions, for arriving at consensus. Surprising coalitions may form, and former adversaries may find room for agreement.

Is this the precautionary principle? It is something much larger, perhaps even simpler, than the emerging principle of international law now being written into

treaties. Nevertheless, that principle has opened a door on a way of thinking, discussing, making decisions, and taking action that has seemed closed to the U.S. environmental community for several decades. The door opens to our values, what we believe and what we want with all our hearts. Let’s start there.

Appendix

The Blue Mountain Lake Statement of Essential Values

Values become actions. Too many of our actions are killing our planet, our communities, and our spirit. Our actions are killing our loved ones. We are diminishing the future for everyone and everything.

Particular values form the basis of our survival. When practiced, they help us live in reciprocity with nature and with each other. We are the relationships we share, and we are permeable—physically, emotionally, spiritually—to our surroundings. Therefore, we hold these values as essential:

<i>gratitude,</i>	because our lives depend on air, water, soil, plants, humans, and other animals;
<i>empathy,</i>	because we are connected with all of creation;
<i>sympathy,</i>	both necessarily in the course of life and unnecessarily when these values are not practiced;
<i>compassion,</i>	because it moves us to attend to suffering and injustice; and
<i>humility,</i>	because we cannot know all of the consequences of our actions.

We belong to the community of the Earth. It is the source of our own life, and our actions affect its well-being. Therefore, we practice:

<i>respect,</i>	because it is fundamental to good relationships;
<i>restraint,</i>	because the Earth is finite, and we must honor its limits;
<i>simplicity,</i>	because we are only one species sharing Earth with many others;
<i>humor,</i>	because life is good, and humor disrobes tyranny and absurdity.

Human beings need sustaining social and natural environments. No one by law or habit is entitled to rob others or future generations of a diverse world vibrant with hope and possibilities. We have an obligation to restore social and ecological fabrics that have been torn by violence or exploitation.

We affirm that all being is sacred and has intrinsic value that is not monetary.

People who hold these values outnumber those who do not. We draw strength from each other. As we abandon harmful activities, we take nature as our guide. We explicitly consider the effects of actions on individuals, families, communities, species, landscapes, regions, and future generations.

It is through love for the particular—a child, a neighborhood, a family of otters, a meandering river—that we find our way to a sustaining relationship with the Earth and our communities.

*Blue Mountain Center,
Blue Mountain Lake, NY, November 12, 2000*

Blue Mountain Participants

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 Craig Holdrege, Ghent, New York
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 Harriet Barlow, Minneapolis, Minnesota
 Jennifer Sahn, Great Barrington, Massachusetts
 Katherine Barrett, Victoria, British Columbia
 Maria Pellerano, Annapolis, Maryland
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 Mark Ritchie, Minneapolis, Minnesota
 Nancy J. Myers, Oak Park Illinois
 Peter deFur, Richmond, Virginia
 Peter Montague, Annapolis, Maryland
 Peter Sauer, Salem, New York
 Sheila Kinney, Blue Mountain Lake, New York
 Steve Light, Minneapolis, Minnesota
 Ted Schettler, Boston, Massachusetts
 Tracey Easthope, Ann Arbor Michigan
 Wes Jackson, Salina, Kansas

Note

1. See the Web site of the Science and Environmental Health Network (SEHN) (2002) for documents related to the precautionary principle.

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