

Rachel's Environment & Health News
#789 -- Answering the Critics of Precaution, Part 1
April 15, 2004

The precautionary principle is a new way of making decisions about environment and health. The purpose of the precautionary approach is to make decisions today that we will not regret in 50 years. As the precautionary approach becomes better known, it is being studied and criticized, which is normal for new ideas. Here we present common criticisms of the precautionary approach, and then offer some responses to the critics. Naturally, ours are not the only possible responses.

Before proceeding, we should distinguish the precautionary approach from the old way of making decisions. (I call it the "old way" because it is being replaced by the newer precautionary approach in many parts of the world -- but in most parts of the U.S. the "old way" is still being used.)

The old way of making decisions assumed that we could do a "risk assessment" on any activity (such as adding the chemical MTBE to gasoline, or burying radioactive waste in the ground, or cutting new logging roads into a forest). The risk assessment would tell us the likelihood and amount of harm from the activity, and we would then enforce limits on the activity to prevent the harm from growing beyond "acceptable" levels. In the case of harms that are rare or unknown, the old way assumes that we will learn about these hidden dangers in ways that may be unpleasant and traumatic but which will not be unacceptably costly or painful.

The old way assumed that people and corporations have the right to do anything they choose (so long as it is legal) until some third party can prove that harm has occurred, at which point a lengthy process of dispute resolution can begin, often requiring decades of effort and millions of dollars. This system requires that harm must occur and must be proven to occur before alternative actions will be considered. The great harms from leaded paint, from leaded gasoline and from asbestos come to mind.

In sum, the old way asked the question, "How much harm is acceptable" or "How much harm can we get away with?" and then tried to limit activities to keep the harm within those boundaries. And the burden of proof of harm was placed on those being harmed -- it was up to them to prove they were being harmed before alternative actions would be considered.

The precautionary principle is a different way of making decisions -- one focused more on preventing harm.

In one form or another, the precautionary principle has been widely adopted in international treaties and agreements[1], and it has even been formally adopted by the U.S. government, which signed the Rio Declaration on Environment and Development in 1992.[2] (Unfortunately, the U.S. has not yet acted on that commitment.)

Criticism #1: There are many ways of stating the precautionary principle, so it is meaningless.

Response #1:

In all formulations of the precautionary principle, we find three common elements:

- 1) If we have reasonable suspicion of harm
- 2) accompanied by scientific uncertainty, then
- 3) we all have a duty to take action to prevent harm.

The precautionary principle does not tell us what kinds of action to take. It does not tell us to ban anything or stop anything or regulate anything. However, it assumes that our aim is to prevent harm, and a consensus is developing that several kinds of action may be helpful[3]:

** set goals;

** examine all reasonable alternatives for achieving those goals with the expectation that the least-harmful approach will be preferred;

** shift the burden of proof to the proponents of new activities or technologies -- they bear the burden of producing information about the expected consequences of their proposed activities, monitoring and reporting as the activity unfolds, agreeing to pay for any harm that ensues, and taking responsibility for remediation as needed; and

** those who will be affected by the decision should help make the decision.

Therefore the precautionary principle is sufficiently well-defined for people to use it in the real world.

Criticism #2: Precaution is not needed. The current regulatory system is working well and there is no need to change it.

Response #2. There are many well-documented cases in which the "old way" has handed us a legacy of very expensive problems that we are now paying for (and struggling to solve), including: depleted fisheries; harm from radioactivity; exposures to benzene, asbestos, and PCBs [polychlorinated biphenyls]; damage to the Earth's ozone shield; exposure to the artificial hormone, diethylstilbestrol (DES); the excessive use of antimicrobials and growth promoters; lead in gasoline, and MTBE as a substitute for lead in gasoline; tributyl tin as an anti-fouling paint on ships and boats; chemical contamination of the Great Lakes; and more. This list could be readily extended -- contamination and depletion of salmon, low levels of many exotic chemicals in typical drinking water supplies; loss of species at 100 to 1000 times historical rates of extinction; water shortages in many parts of the globe including the American west; increasing occurrences of asthma, diabetes, nervous system disorders, childhood cancers, and so on.[4]

Criticism #3: The precautionary approach aims to achieve zero risk, which is impossible.

Response #3: Advocates of the precautionary principle understand that modern technologies will always entail risks,

and that zero risk is not achievable. The goal of precaution is less risk, not zero risk.

However, the precautionary approach responds in a new way to risks. As we saw above, the "old way" asks "How much harm is acceptable?" The precautionary approach asks, "How much harm is avoidable?"

The precautionary principle is needed when something that we value greatly is threatened and requires preventive and protective action, to avoid threats to it, or to prevent threats from materializing into harm.[5]

The precautionary principle is especially needed to avoid harms that could become widespread, serious, or irreversible. Precaution also favors avoiding any harms that are easily avoidable. In sum, "Better safe than sorry" and "A stitch in time saves nine."

Criticism #4: The precautionary principle is anti-science.

Response #4: The precautionary principle embraces and uses all available science. There is nothing anti-science about it.

A key distinction between the "old way" and precaution is their different responses to scientific uncertainty. The old way takes scientific uncertainty as a green light -- until science can prove harm, press ahead.

The precautionary principle takes scientific uncertainty as a yellow light or even in some cases a red light. The precautionary principle assumes that scientific uncertainty is itself a reason to be concerned. When scientific uncertainty is combined with reasonable suspicion of harm, then precautionary action is warranted.

When we see smoke billowing out of a building, do we passively study the situation until we are 100% sure of the cause of the smoke, or do we call the fire department (preventive action) while we simultaneously try to learn more?

Some critics seem to feel that the precautionary approach is anti-science simply because it pays attention to scientific uncertainty. But science always makes a careful distinction between what is known and what is not known -- so paying attention to uncertainty is a normal part of science. As citizens, paying attention to uncertainty is only common sense -- if we're not sure what we're doing, we should proceed cautiously.

Criticism #5: The precautionary principle will stop progress. If we had used precaution as our guide in 1890, we'd never have developed the automobile.

Response #5: In 1890, people needed better means of transportation to replace the horse. If a precautionary approach had been taken in 1890-1900, the alternatives available at that time would have been considered (trains, omnibuses, electric trolleys, cable cars, plus electric automobiles, steam-powered automobiles, and automobiles using the gasoline-powered internal-combustion engine). Unfortunately, a small number of people dominated the decisions in 1900 and they chose to develop the gasoline-powered internal combustion engine, and later to buy up and dismantle competing trolley and train lines. Today, we are all

struggling with the consequences of those decisions (global warming, cities clogged with highways and cars, the deaths of 60,000 people per year from air pollution and another 40,000 killed in accidents, and so on). People needed new forms of transportation in 1900 but the decisions made at that time did not follow a precautionary approach, and they turned out badly. A precautionary approach would at least have forced an open consideration of the risks and benefits of each alternative, and would have given preference to the least harmful. Such a process would not have left us all riding horses, but it might very well have produced a different transportation system than the one we are struggling to replace today because it has proven to be so expensive and so harmful.

Criticism #6: Precaution will stifle innovation and destroy jobs. (This is similar to Criticism #5.)

Response #6: On the contrary, the precautionary principle is already stimulating technical innovation, as we search for new ways to fulfill our needs while minimizing harm to the environment and human health. Much modern technology is incompatible with living things, and it needs to be replaced by newer technologies based on principles learned from nature. Precaution creates incentives for "green chemistry," "green engineering," and "green design." We need transportation -- but the best answer probably isn't gas-guzzling cars. We need energy -- but probably the best answer isn't burning more coal or creating more unmanageable radioactive wastes in nuclear power plants. We need food -- but farms heavily dependent on synthetic fertilizers, chemical pesticides, and genetically engineered crops may not be the best answer because they are so costly.

Human needs have not changed, and they will be fulfilled one way or another. The question is, will we harm the planet and diminish our children's future as we fulfill our needs, or can we find ways to live in harmony with nature? In developing advanced technologies that are compatible with nature, entrepreneurs will find (and create) wonderful opportunities for themselves and others. Transportation, manufacturing, agriculture and energy systems all need to be re-invented, based on cooperating with nature rather than subduing it. The opportunities for job creation are obviously substantial.[6] [To be continued.] --Peter Montague

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[1] The language of precaution has now been adopted in many international treaties and conventions, such as the North Sea Declaration (1987), The Ozone Layer Protocol (1987), the Ministerial Declaration of the 2nd World Climate Conference (1990), the Maastricht Treaty that created the European Union (1994), The United Nations Law of the Sea (2001), and the Cartagena Protocol on Biosafety (2000), among others.

[2] Rio Declaration on Environment and Development (1992); Principle 15 of the Declaration says, "In order to protect the environment, the precautionary approach shall be widely applied by States [nations] 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." Cost-effective means lowest-

cost. Available at

<http://www.rachel.org/library/getfile.cfm?ID=377>

[3] Carolyn Raffensperger and Joel Tickner, eds. *Protecting Public Health and the Environment; Implementing the Precautionary Principle*. Washington, D.C.: Island Press, 1999.

[4] Poul Harremoes and others, *Late lessons from early warnings: the precautionary principle 1896-2000*

[Environmental Issue Report No. 22] (Copenhagen, Denmark: European Environment Agency, 2001). Available at (3-megabyte file):

<http://www.rachel.org/library/getfile.cfm?ID=301>

[5] Carl Cranor, "Some Legal Implications of the Precautionary principle: improving information-generation and legal protections," *European Journal of Oncology* (2003; Supplement 2), pgs. 31-51.

<http://www.rachel.org/library/getfile.cfm?ID=373>

[6] Frank Ackerman and Rachel Massey, *Prospering with Precaution; Employment, Economics, and the Precautionary Principle* (Medford, Mass.: Global Development and Environment Institute, Tufts University, 2002). Available at

<http://www.rachel.org/library/getfile.cfm?ID=218>

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