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Appendix A

LESSONS FROM WINGSPREAD

Margaret Mead once said that we shouldn't underestimate the power of a small group of people because nothing else has ever changed the world. On January 23, 1998, in the snowy woods of Wisconsin, a small group of people gathered to discuss the Precautionary Principle. We had invited this group because each person had thought deeply about the Precautionary Principle (or similar principles with different names) and was exceptionally creative. The group collectively could cast a wide-angled lens on the enormous environmental and public health problems we face in the world and possible ways of solving them. We wanted to break out of old molds and find new ways to think about thorny issues. So we brought a farmer, doctors, an artist, community and labor activists, and a fair number of lawyers and scientists to the Frank Lloyd Wright–designed Wingspread Conference Center in Racine.

We offer the following observations and thoughts of the Wingspread participants at the conference. They capture the large and elegant contours of the Precautionary Principle. We invite you to listen in and participate vicariously through these notes. We end with the Wingspread Statement.

The Meaning of Precaution

Precaution challenges the historical assumptions of limitlessness by bounding human hubris. The core of precaution can be articulated with the Greek verb "prosecho"—meaning to take care and to take notice—suggesting that humans have two roles, those of stewards and watchdogs. Precaution is about a functionally respectful relationship with nature. It is about affirmative, anticipatory action to protect public and ecosystem health. Precaution is one of many principles guiding human activities; but it incorporates parts of others such as justice, equity, respect, common sense, and prevention.

Precaution is culturally framed, so its meaning will differ depending on who uses it. For some, precaution means considering and fostering a responsibility to future generations in all decisions. For others, precaution is consistent with Rawl's notion of fairness and justice and should promote empowerment of those least empowered. Still, for others, precaution means avoiding regrets and holding back when there is some uncertainty about the possible impacts of an activity. Finally, some feel that precaution should be more than avoiding harm ("what we can get away with") but about how we restore the integrity of ecosystems and human health. However, Wingspread participants agreed that precaution is a simple concept rooted in common sense and the primacy of environmental and public health. According to the group, there are four major components of a precautionary approach: decision making in the face of uncertainty; shifting burdens of proof; a full analysis of alternatives to potentially harmful activities; and democratic decision-making structures.

Scientific Uncertainty—The Heart of Precaution

Scientific uncertainty and ignorance about the effects of anthropogenic stress on ecological systems are the underlying rationale behind a Precautionary Principle. Precaution demands that we are open and honest about uncertainty. We must define uncertainty in broader terms than what we know and do not know. There is uncertainty about exposure, but there is also uncertainty about the models used to relate exposure to disease. Finally, as each individual is unique, variability poses another form of uncertainty. Wingspread participants discussed another type of uncertainty that may have far greater implications than knowledge uncertainty: politically imposed uncertainty. Unless we begin to expose uncertainty as an unavoidable component of decisions involving environmental and public health harm, we run the risk of making truly ignorant decisions. As discussed by Wingspread participants, uncertainty becomes the reason for taking action to prevent harm and for shifting the benefit of the doubt to those beings and systems that might suffer harm.

Wingspread participants agreed that precaution challenges science in fundamental ways. The traditional model of academic or laboratory science uses a high standard for establishing conclusive knowledge. However, for problems relating to environmental hazards, the ideals of laboratory science often cannot be achieved or are only achieved at the expense of prevention-oriented actions. The traditional model of science also suppresses speculation and cross-discipline studies. Thus, some fundamental changes in science will be needed if precaution is to be embedded in research design and public policy. These changes include a change in the incentives awarded to scientists that allow them to examine problems and hypotheses outside the boundaries of "normal" science; a need to encourage scientists to make policy conclusions not only on the basis of what they know statistically and scientifically, but also based on what they believe; minimization of Type II errors in decision making; and the augmentation of other types of legitimation other than pure science.

Precaution, Democracy, and Human Rights

Precaution was viewed by many at the Wingspread Conference as an issue of ethics, morality, and truth. For those affected by environmental harms, taking precaution is a simple issue of right and wrong. Precaution is about protecting future generations, who have no power over the decisions made today, and protecting those who are most vulnerable or with the least power in society. For example, decisions about toxic chemicals should ask the basic question of whether exposure is safe for a six-week-old embryo; if not, then the activity should not occur. Decisions about harm to human health are public decisions and thus require the maximum feasible participation of people affected by decisions.

Precaution is also about human rights. For example, there is a disconnect between those who benefit from harmful activities and those who suffer. There is also a lack of consent among those who suffer the burden of "acceptable risks." This differs widely from medical ethics, where testing should only occur with the express permission of those involved and only when there is no other alternative. Is there a difference between the types of experiments conducted to test drugs and the experimentation that occurs everyday on humans and ecosystems from exposure to untested, synthetic chemicals?

Sandra Steingraber outlined two violations of human rights involved in the way toxic chemicals are currently used and released into the environment: (1) toxic tresspass, where toxic chemicals enter our bodies without our permission; a deliberate introduction of toxic chemicals into the environment, especially when that risk is not accepted or known to those affected

can be considered a crime against those who suffer the consequences; and (2) a violation of the human right to enjoy the environment and not fear adverse consequences; for example, a father coming home from work should be able to hug his children without the fear that his children are exposed to the chemicals to which he was exposed in the workplace, or Native Americans should be able to achieve subsistence livelihoods without fear that fish will not be available or contaminated with PCBs. The human rights approach focuses on basic rights that have been removed by environmental contamination and other ecosystem harm and places the onus back on those who create hazards.

Integrating precaution into public health and environmental decision making will require large-scale changes in power structures, a reinvigoration of democracy and structures for allowing greater public participation in decisions affecting their lives. Those who are at risk of suffering from environmental degradation are much more likely to employ a commonsense, precautionary approach than the government, which must defend its decisions in the courts or those who stand to gain (either in the short term or long term) from an activity. While Wingspread participants discussed some of the methods available to promote more democratic decision making, such as community research networks, consensus conferences, and campaign finance reform, they realized that these methods will take a long period to become institutionalized.

Moving Forward with Precaution

More research and outreach will be needed to ensure that the principle is used not only to guide decisions but also in the decision-making process itself. Perhaps of greatest importance to the implementation of the Precautionary Principle is shifting of questions on which we base our environmental protection efforts. Given our uncertainty and ignorance and the vast complexity of ecological systems, we can no longer ask what level of harm is safe. We need to question basic human activities (consumption and materialism, resource exploitation) and ask questions about how we can avoid harm and live in sync with our environment, learning from millions of years of ecological self-regulation.

We will also need to set broad goals as a society and strive toward them, rather than trying to predict the consequences of our actions. Simple goals, such as "no children shall be born with persistent toxic chemicals in their bodies by the year 2005," provide a clear milestone and basis for efforts to protect human health and the environment. There is little room for debating quantitative predictions when such straightforward goals are set. Goals

and targets also challenge human ingenuity and innovation and enable us to focus our efforts on restoration and prevention rather than on justifying actions that might cause harm. Humans (and the environment) do not have to accept risk in order to live a prosperous, healthy life.

Precaution must become a moral imperative, of equal or greater importance than economic growth or military security. The elevation of precaution will drive science toward solving problems for the public good. However, to achieve this elevation, our government agencies will need to shift their focus from protector and mediator of interests to public (and environmental) trustee. In the long run, growth (in a more holistic sense of the word), sustainability, and prosperity will be a reflection of the extent to which we are precautious.

At the end of the Wingspread Conference, participants drafted the following statement. We include it here in full with all the names of the signers.

Wingspread Statement on the Precautionary Principle

January 25, 1998

The release and use of toxic substances, the exploitation of resources, and physical alterations of the environment have had substantial unintended consequences affecting human health and the environment. Some of these concerns are high rates of learning deficiencies, asthma, cancer, birth defects and species extinctions; along with global climate change, stratospheric ozone depletion and worldwide contamination with toxic substances and nuclear materials.

We believe existing environmental regulations and other decisions, particularly those based on risk assessment, have failed to protect adequately human health and the environment—the larger system of which humans are but a part.

We believe there is compelling evidence that damage to humans and the worldwide environment is of such magnitude and seriousness that new principles for conducting human activities are necessary.

While we realize that human activities may involve hazards, people must proceed more carefully than has been the case in recent history. Corporations, government entities, organizations, communities, scientists, and other individuals must adopt a precautionary approach to all human endeavors.

Therefore, it is necessary to implement the Precautionary Principle: When an activity raises threats of harm to human health or the environ-

ment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically.

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.

Wingspread Participants:

(Affiliations are noted for identification purposes only.)

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