The Precautionary Principle

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Wingspread (1998)

When an activity raises threats of harm to human health or the environment, 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 European Commission (2000)

The Precautionary Principle applies “where preliminary objective scientific evaluation indicates that there are reasonable grounds for concern …”

Common criticisms

Anti-scientific – mostly about unscientific prejudice

Vacuous: Does not lead to definite decisions

Too weak – contributes nothing that is not already there, eg in risk assessment

Too strong – will stop progress dead in its tracks

Merely a cover for protectionism

The issues are better dealt with in the courts

Doesn’t yield decisions?

The precautionary principle is not an algorithm for taking decisions. It is a principle used in taking decisions.

It is like the legal principle that the burden of proof in a criminal trial is on the prosecution. Both introduce a deliberate bias into decision making. “It is better than 100 guilty men go free than that one innocent man is convicted.”

The jury still has to decide when a case is proven beyond reasonable doubt – and also what they consider to be “reasonable doubt”.

Even with the burden of proof on the prosecution, lots of people do get convicted

Similarly, the proponents of a new technology have to prove that it is safe beyond reasonable doubt. Society, like the jury, must judge if they have done this.

In many cases, society will judge that they have, and the new technology will go forward.

Too strong? Too weak?

The principle would not have prevented the introduction of tobacco by Sir Walter Raleigh

But it would have made a big difference after Sir Richard Doll's work

Many lives would have been saved if we had put the burden of proof on the tobacco manufacturers.

Example: Asbestos

First mined in Canada in 1879

In 1898, Lucy Deane, one of the first Women Inspectors of Factories, included asbestos work as one of the four dusty occupations to come under observation that year “on account of their easily demonstrated danger to the health of workers and because of ascertained cases of injury to bronchial tubes and lungs medically attributed to the employment of the sufferer.”

She continued:

“the evil effects of asbestos dust have also instigated a microscopic examination of the mineral dust by HM Medical Inspector. Clearly revealed was the sharp glass-like jagged nature of the particles, and where they are allowed to rise and so to remain suspended in the air of the room in any quantity, the effects have been found to be injurious, as might have been expected.”

1917: UK Factory Department finds insufficient evidence to justify action.

1918: US and Canadian insurance companies decline insurance cover for asbestos workers “due to the assumed injurious conditions in the industry.”

1930: UK report finds 66% of long term workers in Rochdale factory with asbestosis. In 1931 regulations specify dust control in manufacturing

1960: Mesothelioma cancer in workers and public identified in South Africa

1962/4: Also identified in workers, relatives and “bystanders” in many countries

1969: UK regulations improve controls but ignore users

1982-9: tightening of controls in UK on producers and users and moves to find substitutes

1998-9: UK and France ban all forms of asbestos

2000-1: WTO rejects Canada’s appeal against this ban

2003- : It is estimated that some 250,000 more people in the EU will die of mesothelioma or asbestosis. (The time from first exposure to the onset of mesothelioma is about 40 years; for lung cancer 20-25.)

Some current examples

- GM crops
- BST
- Nuclear energy
- Climate change – will it be abrupt?
- Nanotechnology

The precautionary principle is not an algorithm for taking decisions, but a statement that the burden of proof lies with the innovator, not the rest of society.

It requires more sound science, not less, because an innovator must provide solid evidence of safety, not vague assurances.

It is neither so weak as to be vacuous, nor so strong that it would halt progress. It is not an alternative to legal proceedings; it should be a part of them.

It may impose a cost, but the cost of putting things right afterwards can be orders of magnitude greater.

The cost is often overestimated because alternatives may exist or can be developed if resources are allocated for the purpose.