



Risky Business - Part 3

Is the precautionary principle the answer?

Food safety regulators cope every day with applying science-based standards to complex fact situations. The task is tough enough when the science is relatively certain but when the science is not so clear – and this is far more common than is generally recognized – then the regulator faces a truly daunting challenge. In recent years, the precautionary principle has emerged as a recommended approach to deal with uncertain science in a range of public health areas, including food safety. What is this controversial principle and does it provide a helpful guide for risk management decision making in the context of food safety?

The Gage Canadian Dictionary defines precaution as “taking care beforehand.” This sounds like the simple common sense aphorism of “better safe than sorry.” But the concept has proven to be more complicated than that: the Swedish philosopher Sandin has recently documented no less than 19 definitions of the precautionary principle in various treaties, laws and academic writings. While similar in some respects, the various versions differ in the interpretation of how uncertain science is evaluated, how the severity of consequences is considered, how the costs and risks are to be balanced and, most importantly from a legal point of view, how the onus shifts to the proponent to prove that the process or product is safe before it is permitted. The most widely accepted definition is contained in Article 15 of the United Nations document issued following the 1992 RIO Conference on Environment and Development: “lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” Applying this definition to food safety regulation brings many problems.

Beyond the definitional difficulties, the precautionary principle has another fundamental flaw: it can be used to support any side of an issue because it’s all in how you define the hazard. If the hazard of DDT, for example, is a possible threat to the environment, then the application of the precautionary principle would be to ban the product until the science is clearer; if the hazard is malaria-causing mosquitoes and the million persons killed by malaria each year (and the 300 million made seriously ill every year) then wouldn’t the principle support taking the action to continue to use the product until the science is more certain? A principle that is this malleable cannot be a reliable guide to decision making.

Beyond its lack of practical utility, the concept creates its own dangers: it could, for example, undermine innovation. A leading British scientist, professor Sir Colin Berry has pointed out that all of the great scientific advances of the past 200 years have come from a process of “learning as we went along”; if the precautionary principle had been the guiding maxim, our society would have been denied, for example, life-saving technologies such as x-rays and blood transfusions. The danger of the precautionary principle being used for trade protectionist purposes is now well recognized. Even without it yet being a general principle of international law, it has already been explicitly used by Europe to prevent the importation of Canadian and American beef and GM corn and by the U.S. (less explicitly) to prevent the importation of Canadian live cattle.

In spite of these dangers and the many problems of definition, the precautionary principle continues to receive a lot of academic attention because its development is partly a response to the same central issue that the three Risky Business articles have been struggling with: the increasingly obvious shortcomings of the classical science-based approach to the regulatory appraisal of risk. It is not that science is not important; indeed it is absolutely essential. But science is not sufficient, especially when we are so often dealing not just with mere risk but ambiguity and deep uncertainty. Even many academics now accept that science-based quantitative expert risk assessments, with precise numbers and Greek letters, often disguise the underlying subjective framework of assumptions and understate the high degree of uncertainty. The classical model of risk analysis falls short both in describing what regulators actually do and in providing much useful guidance on how they should practice their regulatory craft.

The purpose of regulations is to establish tolerability and acceptability for technological risk but it’s a risky business setting standards and enforcing them when the science is uncertain. The precautionary principle is not the answer. Society needs to take a precautionary approach to adopting the precautionary principle or we run the risk of being more sorry than safe.

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