The Uses and Abuses of the Precautionary Principle

By Ronald L. Doering

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. Famously enshrined in the preamble to the Canadian Environmental Protection Act and incorporated into the Cabinet Directive on Streamlining Regulations (CDSR), the precautionary principle continues to be cited by public servants to justify decisions: they are told in the CDSR that "the application of precaution may be necessary when there is an absence of full scientific certainty and a risk of serious or irreversible harm."

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.

Beyond the definitional difficulties, the precautionary principle has another fundamental flaw: it can be used to support any side of an issue because it is 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 but it is still often used as a justification for a decision taken for other reasons.

I was reminded of this on reading recent articles reporting an Irish study that reviewed the growing body of research that has found a link between high intakes of folic acid and a possible increased risk for colon cancer.

I was a food regulator in the mid-1990s when research began to show that neural tube defects (NTDs), such as spina bifida and anencephaly, could be significantly reduced if pregnant women took folic acid supplements. Before resorting to mandatory food fortification, Health Canada, concerned about the health hazard to the general population, applied the precautionary principle and sensibly began a pilot project to determine if there were any adverse effects associated with food fortification especially for the vast majority of Canadians who would receive no benefit. Concerned about the children with NTDs, the U.S. decided they could not wait, applied the precautionary principle and made fortification of white flour with folates mandatory. For trade and political reasons, Health Canada rushed through a similar regulation, effective November 1, 1998. This is our law today. Applying the same precautionary principle, Britain and Ireland declined to require mandatory fortification.

Beyond its lack of practical utility, the concept creates its own dangers: it could, for example, undermine innovation. A leading British scientist, 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.

There is another danger. The principle has been widely abused to support trade protectionism: the European Union continues to use it to prevent the importation of Canadian and American beef and genetically modified corn. The United States used it to prevent the importation of live cattle from Canada after the discovery of Bovine Spongiform Encephalopathy (BSE) in Canada until Japan used it against them.

The practice of using it as a cover continues. Canada's current proposed action to ban some phthalates hides behind the precautionary principle to disguise a decision taken for political and economic, rather than science reasons.

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 can help by posing useful questions. It does not provide answers. And if we aren't cautious and don't watch for when it is used and abused to provide cover for decisions made for other than science reasons, we run the risk of being more sorry than safe. ACCN

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