Keywords: precautionary principle, risk assessment, standards of proof, burdens of proof, presumptions

ABSTRACT: Environmentalists have advocated the Precautionary Principle (PP) to help guide public and private decisions about the environment. By contrast, industry and its spokesmen have opposed this. There is not one principle, but many that have been recommended for this purpose. Despite the attractiveness of a core idea in all versions of the principle—that decision-makers should take some precautionary steps to ensure that threats of serious and irreversible damage to the environment and public health do not materialize into harm—even one of the most widely endorsed principles needs considerable specification and refinement before it can be used. Moreover, the PP is an approach or guide to utilizing scientific evidence in social or legal decision-making contexts. In this it does not differ in kind from other approaches to using factual information such as in the law. The law provides some models for different strategies to guide decision-making under uncertainty when factual issues cannot be resolved with certainty. These in turn can help guide the formulation of different versions of PP and help clarify some presuppositions of the principle. Once some plausible versions of PP are articulated, I suggest some applications to existing environmental problems.

I. Introduction

Environmentalists have advocated the Precautionary Principle (PP) to help guide public and private decisions about the environment. By contrast, industry and its spokesmen have opposed this. There is not one principle, but many that have been recommended for this purpose. Despite the attractiveness of a core idea in all versions of the principle—that decision-makers should take some precautionary steps to ensure...
that threats of serious and irreversible damage to the environment and public health do not materialize into harm—even one of the most widely endorsed principles needs considerable specification and refinement before it can be used. Moreover, the PP is not itself a scientific principle or result, but rather an approach or guide to utilizing scientific evidence in social or legal decision-making contexts. Thus, it does not differ in kind from other approaches to using factual information such as in the law. The law provides some models for different strategies to guide decision making under uncertainty when factual issues cannot be resolved with certainty. These models can help guide the formulation of different versions of PP and help clarify some presuppositions of the principle. Once some plausible versions of PP are articulated, I suggest some applications to existing environmental problems.

II. Specifying the Principle

There have been a number of statements of PP, some more plausible than others and some appropriate for different circumstances. In discussing the PP, I begin with a principle that has received widespread discussion, but one that is quite different from some straw positions that have been attacked by opponents of PP.a

The starting point is the principle that was adopted by the United Nations for its Agenda 21.

Where there are threats of serious or irreversible damage, lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.4

While this is a more defensible version than some straw positions, it is vague and in need of considerable specification, but largely ineffectual as it stands. It, along with other statements of the principle, needs considerable specification in order to be fully applicable in practical circumstances.5 This version of the PP is ineffectual because it is not difficult to comply with (and it is not clear who would disagree with it). In what follows, I provide only partial specification of the PP, focusing on some legal strategies that might be incorporated into its statement for addressing scientific uncertainty. Thus, for now, I explicitly refrain from addressing other aspects of the principle. After considering some issues that help frame our understanding the principle, I propose two different variations of the following principle:

Where there is scientifically credible evidence of threats of serious or irreversible damage, failure to establish the threat of damage beyond a reasonable doubt (or by a preponderance of the evidence) shall not be used as a

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a. For example, one author suggests that the appropriate principle for consideration is “that government should take precautions to protect public health and the environment, even in the absence of clear evidence of harm and notwithstanding the costs of such action.”2 While some may have advocated such a principle, this version is much too easy a target, because it abjures evidence of harm and all costs of action.

Another argues that “While there is no universally accepted definition for the doctrine, it’s generally taken to mean that . . . ‘we need new policies based on what might cause harm, even if there’s no scientific evidence that a hazard exists.’ ”3