

Epistemology and Precautionary Policy

Climate change, genetic engineering, nuclear waste and similar topics have in recent times brought so-called precautionary principles to prominence. These precautionary principles come in many varieties but what unites them is the commitment to a prescription of the following structure:

If we are in epistemic conditions of type E and
If the policies under consideration have consequences of type C
Then choose a policy which is precautionary in sense P

I claim that what has driven the construction of such principles is a vague "precautionary intuition" which in general says nothing more than "better safe than sorry". Many versions of the precautionary principle are either vacuous or extreme when taken literally and therefore cannot be taken to do anything else than expressing the precautionary intuition rather than specifying or justifying it. I will argue that those parts of the literature on the precautionary principle which actually do aim at specifying and justifying the vague intuition have in general placed too much focus on the epistemic condition E and have done so in implausible ways.

The main part of this paper therefore consists in the negative task of showing in which sense these attempts at capturing the precautionary intuition via the epistemic condition are bound to fail. The attempts in the literature reveal that there is very little exchange between the policy oriented literature on precaution and contemporary theorizing on epistemology. A smaller part of the paper consists in the constructive task of hinting at less far-fetched ways of capturing the precautionary intuition.

Typically, the epistemic condition is couched in terms of the type of probabilities available. Expressions used to classify the types of probabilities available are "unquantifiable risks", "uncertain risks", "uncertainty (in contrast to risk)", "ignorance (in contrast to uncertainty, risk and certainty)", "imprecise probabilities", etc. I oppose such classifications based on the following argument. Policy needs to be based – at least in a direct sense – on the beliefs of those deciding on the policy about the consequences of the policy rather than on the actual consequences (or on the objective probability of the consequences). In a fine-grained epistemology, "belief" is just a shorthand expression which refers to degrees of belief. Such degrees of belief can also go under the label of "subjective probabilities" which in turn are often abbreviated simply as "probabilities". So, the kind of probabilities which must ultimately be available in policy are nothing else than degrees of belief. The fact that subjective probabilities are something fundamentally different from objective probabilities – where the latter is a very difficult notion – is hardly ever taken note of in the policy oriented literature on the precautionary principle. I then claim that there are hardly any real world situations where subjective probabilities are not available or where it makes sense to classify them into such types as being of a precise or of a – categorically different – imprecise type, of being of an uncertain or of a certain type, etc. As far as subjective probabilities are concerned, it only makes sense to describe their features in terms of degrees. Such features which are matters of degree are in particular whether the beliefs in question are based on little evidence or on much evidence and how vague the beliefs in question are. As a result, prescriptions for precautionary policies cannot be made dependent on the particular type of probabilities available in a given epistemic situation.

The constructive part of the paper then claims that even if there is only one type of epistemic condition the precautionary intuition can still be captured easily based on two fairly simple considerations: a generalization of what economists call diminishing marginal utility and non-consequentialist thinking.