

Cognitive Bias and the Precautionary Principle: the Evidential Gap in Cass Sunstein's *Laws of Fear: Beyond the Precautionary Principle*

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Influence of *Laws of Fear*

- *Laws of Fear* is a masterful work. No book so comprehensively and imaginatively synthesizes and extends existing empirical works on risk perception. None more systematically develops these insights into a program for guiding risk regulation. (Kahan et al., *Harvard Law Review*, 2006, 1108).

Structure of Paper

- 1. Articulate quick conceptual argument against Precautionary Principle.
- 2. Identify two flaws in quick conceptual argument.
- 3. Consider and reject 'quick fixes'.
- 4. Conclusion: the quick argument needs to be replaced by a 'slow' empirically informed argument.

1 (1) The quick argument

■ A weak version of the Precautionary Principle:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. (*Rio Declaration on Environment and Development*, United Nations Environment Programme 1992).

A strong version of the Precautionary Principle:

...if the 'worst case scenario' for a certain activity is serious enough then even a small amount of doubt as to the safety of that activity is sufficient to stop it taking place.

First European "Seas at Risk" Conference of 1994

1 (2) The quick argument

- Consider, for example, a situation where, due to economic growth, the demand for energy in a county is rising and a policy is required to address this demand. A possible solution would be to invest in new nuclear power plants, but the potential risks associated with nuclear power are serious and an advocate of a strong version of the PP could argue that these are sufficient to rule out this option. However, the alternatives to the use of nuclear power also involve significant potential risks. For example, employing fossil fuels involves the potential risk of contribution to serious climate change and a failure to satisfy growth in demand for energy has the potential to cause significant social upheaval
- Often we are faced with circumstances where we are exposed to risks however we act, and even if we fail to act. If we try to formulate policy on the basis of a consistent application of a strong version of the PP in such circumstances we will formulate incoherent policy as applications of strong versions of the PP lead to the recommendation that we act (in various mutually inconsistent ways) and that we do not act.

1(3) The quick argument

- If the PP really leads to incoherent outcomes, then how can it be that proponents of the PP have not realised this and how can it be that the PP appears to have been applied on past occasions?
- The answer, according to Sunstein (2005), is that the reasoning of those who apply the PP is influenced by a number of factors that can cause significant cognitive biases, leading them to become blind to the fact that there may be risks on all sides when they are considering policy alternatives. These factors include the availability heuristic, probability neglect, loss aversion, a belief in the benevolence of nature and systems neglect.

2 (1) two flaws

- explanation of the apparent applicability of the PP has the consequence of enabling a demonstration that the PP really can be applied by some agents. The PP can be applied by agents who are in the grip of cognitive biases such that when they consider the risks of applying a policy they fail to consider significant risks involved in not applying that policy.
- Following Tversky and Kahneman (1982) and many others, Sunstein (2005) characterises cognitive bias as a general phenomenon. So, on Sunstein's characterisation, most ordinary people are such agents.

2 (2) two flaws

- Cognitive bias is a general phenomenon and cognitive biases do not suddenly go away when we apply cost benefit analysis.
- It is not obvious that biased reasoners do better applying CBA than the PP, even if unbiased reasoners would do better.

3. Quick fixes

- A. Avoid factors in reasoning that cause bias.
- B. Set up processes that overcome bias.
- C. Defer to experts who avoid factors in reasoning that cause bias or succeed in overcoming bias.
- D. Overcome bias at the group level.

10. Slow solutions

- Although none of the four strategies I have considered eliminate cognitive bias, all four can contribute to the amelioration of cognitive bias.
- If it can be shown that cognitive bias can be significantly ameliorated when CBA is conducted then a clear case for the superiority of CBA to the PP can be made – constituting a slow argument for CBA and against the PP, an argument that blends conceptual and empirical considerations. The outcomes of CBA are improved by the amelioration of cognitive bias. However, the outcomes of the PP are not improved by the amelioration of cognitive bias. On the contrary, the amelioration of cognitive bias makes it more likely that those applying the PP will realise that there are risks on all sides and, therefore, it is more likely that they will be led to paralysing policy outcomes.