

The response reproduced below was submitted further to an invitation to comment on the draft Discussion Paper by the Nuffield Council on Bioethics: *The use of genetically modified crops in developing countries*, during June to August 2003. The views expressed are solely those of the respondent(s) and not those of the Council.

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Stormy weather

In paragraph 27 you state “a large majority of agro-climatologists as represented in the UN International Commission on Climate Change believe that extreme weather conditions are becoming more frequent”.

I am unfamiliar with the UN International Commission on Climate Change but the Third Assessment Report of the Intergovernmental Panel on Climate Change allows that, from its own studies, there are no significant trends evident in tropical and extra-tropical storm intensity and frequency over the 20th century. It adds that there are no systematic changes in the frequency of “tornadoes, thunder days, or hail events” evident in the limited areas analysed (Summary for policymakers – page 5)

As an aside, the phrase “a large majority of agro-climatologists as represented in the UN International Commission ...” is not very enlightening and might even be thought misleading. Those working to this body are presumably speaking on their own behalf and not acting as delegates from some representative body of agro-climatologists. How many agro-climatologists are there in the world? How many contributed to these UN deliberations? I suspect the first figure is much larger than the second.

The wicked capitalists

On page 22 in case study one, “Bt cotton in China and South Africa”, you list the agricultural/biological benefits of this crop and then set out the counter-arguments from the objectors, but stuck in the middle is paragraph 64 which suddenly switches us to arguments against Bt cotton on the economic/political grounds of who owns the technology. I would not suggest jettisoning this paragraph but it breaks the flow of the reasoning and might be better placed after paragraph 67.

This re-ordering could afford you a better opportunity to point up that arguments about ownership patents, material transfer agreements, though important, are separate from the scientific and agricultural debate about the benefits or otherwise of GM crops. It ought to be a plain distinction but it is often lost in the heated exchanges about GM, usually to the advantage of those who wish to prevent such innovation. When they are beaten back on the scientific argument they will retreat to a new defensive line of muttering at the sinister intentions of the large multinational agrochemical and seed companies. Whatever advantage they might extract from that tactic should have no effect on the scientific argument. I might prove to my own satisfaction that, in their determination to maximise profit, the Monsanto board are the devil and his disciples incarnate but it would do nothing to affect any arguments about the biological risks or benefits of GM technology.

Beware the precautionary principle

In the first sentence of paragraph 122, I sense punches being pulled. You cannot deploy a “reasonable interpretation of the precautionary principle” if by ‘reasonable’ you mean moderate or qualified, which is what I think you intend.

The precautionary principle is an absolutist doctrine, not so much unscientific as anti-scientific, and its authors would no sooner allow you to take a qualified position on it than a stout Calvinist would grant you the same privilege in terms of predestination.

You quote the formulation produce in Principle 15 of the Rio Declaration on Environment and Development where it gives to those who subscribe to anthropogenic global warning a licence to demand that we should plan our social and economic future on the basis that their hypothesis is true. Their view being that, unless we mend our ways by curbing carbon dioxide emissions, there are threats of serious and irreversible damage to the world’s climate. No matter how weak and disjointed the anthropogenic hypothesis might become, that belief can only be abandoned when there is ‘full scientific certainty’ to the contrary. The sense of the Declaration is that until the belief can be abandoned, the political and technological policies based on its veracity must be adhered to. In other words, we curb the use of carbon-based fuels and keep building windmills until told otherwise.

The same reasoning applies to the introduction of GM foods. If a significant lobby remains persuaded that GM foods are dangerous, no matter how few or how unpersuasive their scientific arguments, “effective measures” must be taken to prevent what they most fear until “full scientific certainty” to the contrary is established. For this lobby even a modest GM production would threaten “serious and irreversible damage”. Since “full scientific certainty” never arrives on this, or any other issue, the anti-GM lobby would, if the precautionary principle is kept, have a copper-bottomed guarantee that commercial production of GM crops is permanently postponed. I sense that this is not a route the authors of this report wish to go down.

A different definition of the precautionary principle, though driven by the same philosophy, is found in what is called the ‘Wingspread statement’ drafted by a gathering of environmentalists in January 1998. (Protecting Public Health & the Environment. Carol Raffensperger and Joel Tickner Eds, Washington DC: Island Press 1999 pp353-55). It reads:

When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof.

The advocates of these doctrines see the environment as having the fragility of bone china and believe that any perturbation of this delicate structure, no matter how minor, carries serious risk of causing changes which are universal, swift, invariably malignant and unstoppable. Those who put their faith more in observation than speculation would argue that many shocks that nature is heir to rarely, if ever, bring such dire results. Such observers find it difficult to avoid lapsing into cynicism when they behold the strange selectivity with which the zealots seek to apply this principle.

Advocates of GM food are clearly in the firing line but older, more widespread and more entrenched technologies escape such censure. If GM foods are a danger because there is no "full scientific certainty" that they are safe, then the same applies to gamma radiation of seeds or the use of chemical mutagens, or for that matter the widespread use of plastics or the wearing of synthetic fibres. None of these innovations was ever subject to the precautionary principle. There are those of refined sartorial sensitivity who would not be seen dead in polyester but, to the best of our knowledge, no-one has yet died of polyester. But how can we be sure it will not happen or is not, indeed, already happening? It, and a thousand other products of scientific and technological ingenuity, could be 'slow burn' threats to our very existence.

Those who promote the precautionary principle do not trespass into such areas because it would more clearly expose their ludicrous thinking. Yet if they were consistent in their philosophy they would lie awake at night worrying not only about GM food and its terrifying consequences but about every unthinking interference with nature since some nameless Mesopotamian farmer had the temerity to risk all by cross-breeding his unimpressive crop with other local grasses.

The strength of science lies in its ability to test the robustness of a hypothesis, for example that a medical treatment will have a particular effect. It cannot show that the same treatment in all imaginable circumstances will be risk-free. But its inability to deal in absolutes is its strength, not its weakness. The historic proof is in its achievements. To take but one historical example, one wonders how Edward Jenner might have sold the idea of vaccination if Georgian England had laboured under such a pernicious doctrine as the precautionary principle.

Your report's approach to risk is clearly different to those who propound the precautionary principle. Why genuflect, even tentatively, towards a false god? I think the report would be truer to its own spirit if it roundly rejected the precautionary principle because it is both dogmatic and destructive. In doing so you could emphasise that this does not signal rashness on your part. You still believe in exercising reasonable caution when introducing new technology which could affect our health and the environment, but your watch words are empiricism and common sense.

The alternative is to give ground to those who see Prometheus as the villain, not the hero.