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The Precautionary Principle

Until recently I taught ethics to students of genetics. We would discuss the ethics of releasing genetically modified organisms into the environment, and then I would bring in the Precautionary Principle; but, year after year, they would turn out never to have heard of it. This was worrying; many of these students were likely to have careers in scientific research, of which the outcomes could on some occasions risk crossing thresholds and undermining whole ecosystems. Surely they should have at least been aware of the Precautionary Principle?

The Precautionary Principle was recognised in the Rio Declaration of 1992, endorsed by most countries on earth, and committed them to intervention in advance of scientific consensus where there is reason to believe serious or irreversible harm will otherwise be done. It is an ethical principle for addressing risk and uncertainty. Its opponents suggest it stifles adventurousness, but its supporters can reply that if it had been in force before the 1980s when it first emerged, it could have prevented all kinds of technology-induced problems such as asbestos-poisoning and the thalidomide disaster.

Besides, it has a special relevance to the issue of global warming. In this matter, there actually is a broad scientific consensus that climate change is both real and largely caused by human behaviour. But there are also those who deny this, and their very existence allows prominent broadcasters (including Clive James) to claim there is no consensus. (And admittedly some scientists like Fred Singer are to be found who loudly trumpet such denials.)

However, this is where the Precautionary Principle comes in. For what cannot possibly be denied is that there is some reason to believe serious and irreversible changes are taking place, and intervention could significantly mitigate them. So the Precautionary Principle tells us such intervention is needed, whether there is a consensus or not. This example illustrates why the Precautionary Principle should be taught to all science students.

Surely, some will say, this would somehow involve moving from facts to values and even committing the so-called 'naturalistic fallacy' (moral claims cannot be derived from scientific facts). But philosophers now largely reject the view there ever was such a fallacy, and philosophers of ethics widely accept that arguments from harm (which can often be established on a factual basis) have to be taken into account in reasoning about what ought to be done (and thus in the realm of 'values'). As a philosopher, I have been trying to explain all this to humanities students for decades; but there is probably a rather outmoded story still prevalent among scientists about what we philosophers are thought to be saying on these questions, probably influenced by the philosophy of the early part of the last century, and relatively uninfluenced by the philosophy of the last fifty years.

So there really is no barrier to the application of ethics to scientific findings and technological innovations. This is already widely recognised in the fields of medical ethics and bioethics, since medical ethics has a long pedigree of over two thousand years, and because of the obvious ethical issues modern medical technology gives rise to. But people have been slower to apply ethics to environmental issues, even though the discipline of environmental ethics has been vigorously pursued since the 1970s (Attfield, 2003).

However, until the issue of climate change became prominent in the 1990s, ignoring environmental ethics was at least understandable. That is no longer the case. The teaching of environmental ethics (including the Precautionary Principle) should now be made a priority for all science students.

Reference

Attfield R. (2003), *Environmental Ethics,* Polity, Cambridge

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