

FOREWORD

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"Ecology is a moral science"



"Ecology is a moral science." This statement from a book by Amartya Sen¹ covers two propositions, both of which are significant: the first is that ecology is a science; the second is that it is a moral science.

Scientific ecology suffers from semantic ambiguity with the word "environmentalist". We all have the right, and no doubt the duty, to be environmentalists, and therefore

to hold militant opinions or positions on ecological issues. But opinions and positions are not science. The term "écologue" in French, sometimes used to describe professional researchers, is not very popular. So we stick with the term ecologist, which maintains the confusion between opinions – environmentalism – and scientifically established facts – ecology.

While the IPCC's audience is sufficient to counterbalance the ideological pressures of many decision-makers who are ignorant of science, the same cannot be said of public debate when it is not conducted calmly and seriously. For example, proper planning of the energy transition requires a scientific approach based on the best available knowledge. Relentlessly contesting everything on the grounds that this transition is always underfunded and always too slow can lead to inappropriate and sometimes disastrous measures being taken in a hurry.

What's more, let's say it loud and clear: to combat the environmental crisis, innovation is and will be needed. Innovation requires science, and lots of it. This is perfectly illustrated by this issue of FACTS, which shows just how broad the scientific approaches need to be to cover the immensity of the field. The social sciences will play an important role: technical innovations are and will be coupled with social innovations, if only to enable or facilitate the acceptability of the former, as illustrated by the scientifically foolish situation of GMOs in Europe.

Ecology is also a moral science, for two reasons.

There are many who seek to reconcile 'Nature' and Man, understood as an integral part of it, in a balance that respects both, but which has yet to be found. This approach is undermined by those who make 'Nature' sacred and give it a higher place than humans, who are seen as predatory and destructive. It is equally opposed by those for whom Nature exists only to be exploited and enslaved by Man.

To caricature: at one extreme, radical ecologists accused of declinism; at the other, unrepentant technophiles and supplicants of ultra-neoliberalism. We can all make our own assessments of the very different moral implications of these philosophical approaches.

But there is one approach, just as immediate and compelling, that transcends both, whatever the roles assigned to Man and Nature: that of *sharing*². We have reached a stage where we must share the ills as well as the global public goods. This is obvious when it comes to global warming. If, leading the way, only a few countries, and not others, reduce their greenhouse gas emissions, what will we achieve collectively? Perhaps the former will suffer less from a few local disorders, but they will suffer just as much from the major consequences of global warming. The same goes for pollution like plastic waste for example, and for finite natural resources, and so on. *There is no strictly local solution to the world's biggest problems.* The only way out is to share in actions and solutions, including innovations.

This sharing will require generosity on the part of the better-off. Both logic and ethics should convince us of this. But are we on the right track? The Covid19 pandemic would have been much worse without the major innovation of the messenger RNA vaccine. This was shared, albeit too sparingly and too slowly to prevent millions of deaths in disadvantaged countries.

It should be noted, however, that if the pandemic was relatively quickly brought under control, it was also because, outside living organisms, viral particles dry out and "die". As a result, the global virus did not grow through passive accumulation. Otherwise, exiting the pandemic would have been much more difficult. This will not be the case for global warming, nor for pollution caused by products with half-lives measured in centuries or millennia rather than days or weeks. The laws of biology and physics are not identical.

The conclusion is clear: we will not be able to solve environmental problems properly unless we share more and better. Sharing innovations raises specific issues (patents, for example) that we would do well to tackle more vigorously today.

² This is one of the conclusions of my latest book: Philippe Kourilsky, *Mes années Pasteur, l'âge d'or de la biologie moderne [My Pasteur years, the golden age of modern biology]*, Odile Jacob, 2023.

¹ *L'économie est une science morale [Economics are a moral science]*, La Découverte, 2004

