

## **The philosophical foundation of environmental law : an excursion beyond Descartes**

Law, technology and the environment:  
a challenge to the great dichotomies in western rationality.

François OST

Facultés universitaires Saint-Louis, Bruxelles

**Abstract.** The current environmental crisis is intellectual before being material: it derives from the difficulties (blind allies?) into which we are led by modern dualist thought, which counterposes subject and object and their countless corollaries: value and fact, fiction and truth, politics and science, proscriptive and descriptive, subjective and objective law, private and public sphere, law of equity and current legal practice. These distinctions must be reconsidered at a time when hybrid forms proliferate, forms based on both nature and culture, the stuff of K. Poppers "third world". Some kind of thinking based on complexity would appear necessary in order to link the opposite poles dialectically. But saving the environment also entails control of this intrusive third world. New forms of responsibility are required (ecological responsibility towards future generations), new descriptions of nature (a "common heritage", half-way between subject and object), as well as new forms of judicial regulation (negotiated objective law and procedural subjective rights to participation in the management of the environment).

When a speaker juxtaposes "law", "technology" and "the environment" in the title of his paper, he can be expected to approach his subject from the following angle: since today's technology constitutes a threat to the environment, how can the process of law restore the necessary checks and balances? I am not going to take this direct route, even if, like many of you, I consider that the need to leave a viable planet to future generations should have absolute priority in any political action. Too many attempted legal constraints have failed, in the last thirty years at least, for us to take the direct approach here. We must first make a detour into philosophy and consider the type of relationship we wish to set up between human beings and nature, between society and the environment.

The fact is that a technosphere has arisen between us and the biosphere that has radically changed the meaning of this relationship. This change has entailed doubts about, or at least shifts in, no less an institution than the hallowed distinction between subject and object. The hypothesis here is that we cannot begin to overcome the present environmental crisis unless we succeed in thinking dialectically about the relationship between subject and object, and about the relationships between all the other pairs of contradictory ideas associated with this. The opposition of subject and object is in fact associated with that between values and facts, fiction and truth, political/ethical and scientific, proscriptive and descriptive; a division which leads

on, at the judicial level, to the opposition between subjective and objective law, between the private and the public sphere, between the law of equity and current legal practice.

Each of these oppositions reflects a way of thinking which is divided, binary and simple: in a word, modern rationality. The modern world, however, has become resolutely complex: between the physical world of objects and the interior world of the subject, a "third world" has evolved, as Karl Popper pointed out, a world of socialized and objectified productions of the human mind, an increasingly autonomous domain which forces us to rethink nature and the ways in which worlds 1 and 2 relate to each other. The reality that imposes itself on us has become hybrid, starting with the very environment whose present crisis concerns us so greatly. We are in fact no longer concerned with nature - unspoilt nature - but with an environment that has been humanized, socialized, taken over, transformed, managed and ... polluted. Saving the biosphere therefore no longer means acting on nature, but rather transforming the technosphere, in other words changing our ways of living, producing and consuming. With regard to this shift in the meaning of the environmental crisis, the present paper will attempt to think about the consequences at the epistemological level (asking the question of how complexity is to be construed) and at the level of ethics and the law (asking the question of how to control our control of nature). Going yet one step further, we should stop making a radical distinction between these two levels, as if knowledge of things had no relation to the government of human beings. If we wish to save the ethical and judicial norm from the sad fate reserved for "threatened masterpieces", if we wish to reintroduce some rule of law and some democracy into technoscience, we should concentrate on where this is to be found: working away at the heart of "world n° 3", at the centre of the socio-technical networks that have sprung up and now overlay both nature and culture.

## **1. Epistemology**

The Ancients, it is well known, reasoned within the framework of a holistic representation of the universe: there was hardly any distinction at all between what is and what ought to be, and the laws of society were assumed to reflect the laws of nature. It might possibly even be better to invert this and state that, for the Ancients, relations between natural phenomena could only be thought of as the result of divine or human will. This is the world that was "disillusioned" by the objectivist and mechanical view of nature imposed by such as Galileo, Bacon and Descartes. Galileo wished to free himself from the world of the senses and rewrite the world in the language of mathematics, Bacon placed science at the service of humanity and nature at the service of science, Descartes invited us to act "as if we were the masters and possessors" of nature<sup>1</sup>. From this, the great divide follows, between subject ("thinking substance" profiting from the exclusive gift of reason) and object ("deployed substance", matter that is available and capable of being transformed at will). The relationship is totally asymmetrical, allowing the subject to place and to manipulate the object in an absolutely external world and to refer to it in

all "objectivity". Thanks to the rules of scientific method, the subject can claim to reveal the object as it is and to pronounce on it in terms of absolute truth - an objective truth totally devoid of the subjective opinions so characteristic of the field of politics and social relations. Scientific discourse - and its technological extensions - places itself beyond and above political judgment and judicial mediation. It may even be claimed that developments in the law in the 17th and 18th centuries encouraged this projected control of nature by providing the categories likely to justify a deprivational expropriation of nature and its virtually unlimited transformation, one of the most recent current manifestations of which is the patent granted to cover life-forms, including human cells<sup>2</sup>.

We know that in the ecological field, the current referred to as deep ecology<sup>3</sup> today claims to be able to reverse this prospect completely, through a return to human immersion in nature, assumed to be the source of all knowledge and all wisdom. "Think like a mountain", and "Nature knows best" are two of the slogans of this holistic and pantheistic movement, which brings us back to a universe before logic: the world of original oneness from before the separation of things from ideas, the world of *Gaia genetrix*. At the political level, the same current appears to entail a return to something like the state of nature and conformity to the rules of a "biotic citizenship"<sup>4</sup>.

Today, we well understand the errors of both models: the Cartesian model makes a radical distinction between object and subject and, severing as it does all links between humanity and nature, grants virtually unlimited power to the workings of society, with the disastrous ecological consequences we know so well. The deep ecology model, on the other hand, merges subject and object and thereby grants virtually unlimited power to the workings of nature, at the risk of eliminating humanism.

Moreover, neither the reality of our scientific work nor that of our political behaviour corresponds to either of these models. Bruno Latour has rightly pointed out that, in practice, "we have never been modern"<sup>5</sup> (or anti-modern, for that matter). To understand this, we need to assess the development of Popper's "third world"<sup>6</sup>: a world of socialized and objectified human productions (of political institutions as well as scientific theories), an area that cannot be reduced to the physical world or the world of the mind and yet interacting with both of these, involving them in novel relations, increasingly open and apparent (causality and even probabilities being no more than variants among others of this emerging universe)<sup>7</sup>. This world n° 3 is the domain of hybrid forms: semi-objects and semi-subjects, socio-technical networks, mixtures of nature and culture. It should be enough here to mention information superhighways and expert systems, synthesized imaging and virtual reality, transgenetic plants and animals, frozen embryos and biological robots, as well as - under the heading of problems and hazards - the greenhouse effect, the thinning of the ozone layer and a reduced gene pool. Objects that are too human to be truly natural and subjects that are too artificial to be truly human. Something

like a "milieu": what we make of nature and what nature makes of us. This "world n° 3" of hybrids combines and rearranges the opposing terms from worlds 1 and 2: it takes the opposition of subject and object and replaces it with the specific logic of a given project, it takes the opposition of values and facts and replaces it with debatable issues that are both theoretical discussions and problems of society, it takes the opposition of fiction and truth and replaces it with a scientific practice that is increasingly a simulation and yet workable, it takes the opposition of descriptive and proscriptive and replaces it with an evaluation of performance.

The world of technoscience is in fact built on a generalized criterion of performance: it no longer claims to say what is real but is much more concerned to attach verisimilitude to what is surreal. Until recently, what was possible was merely one variant of what was real; today, the relationship is reversed: what is real is merely one variant of what is possible. Technoscience is involved in systematically exploring all the variations on what is possible, whether these be genetic manipulation, mathematical fictions, computer simulations or virtual images, so that I. Stengers is able to forecast the end of the Galilean era: fiction now no longer has to cede precedence to the phenomenon, but quite the reverse<sup>8</sup>.

How can this "world n° 3" of performance and of projects be thought of and controlled, except by means of an epistemology of complexity<sup>9</sup> and dialectical thinking<sup>10</sup>? Rather than claiming to isolate, as Descartes wished to do, clear and distinct objects owing nothing to their environment or to the observer who studies them, it is necessary to shed light on the processes of reciprocal formation linking the object, the environment and the observer. Rather than thinking in terms of mechanical movements and linear causality, we should try to look for networked movements and recursive causalities. Rather than trying to cut the Gordian knot of science and politics - which has become far too tangled to be simply divided, if it ever could have been - we should be learning to follow the windings of each of its strands in order to untie and retie it as needed.

Only this dialectic provides some chance of controlling our control by restoring a sense of what links us to nature and what separates us from it. The astrophysicist H. Reeves is saying nothing but this when he writes that humanity, "the voice of nature, is obliged to take charge of the future of complexity"<sup>11</sup>, or E. Morin, for whom humanity "simultaneously leads and follows nature"<sup>12</sup>. But this leads into an ethical consideration.

## **2. Ethics**

Traditional thinking sees no ethical problems as regards nature or even with regard to nature. Four postulates justify this point of view:

1. Nature presents an inexhaustible reservoir of natural resources (J. Locke's position, for example, with regard to America; a tenet of the founders of political economics) and human activity does not alter this in any significant way.

2. Time is reversible; the laws of nature are immutable and stable.

3. Technical and scientific means enable humanity to create artefacts by which to liberate itself from nature and improve its condition according to a logic of unlimited progress (Bacon's programme).

4. The individual is the basic atom of society. Regarded as free and equal, the individual is thought of as freed from all significant links with nature, as well as with past and future generations.

These four postulates, however, are being questioned fundamentally today.

1. The excessive drains on natural resources and the irresponsible dumping of toxic wastes have today upset the environmental balance; in some cases, as with deforestation of the shrinking gene pool, the point of no return has been passed.

2. The second law of thermodynamics has taught us the irreversibility of the natural universe governed by the law of entropy. We now know that nature has a history, that its laws can change and that it is vulnerable.

3. Technological progress is today fraught with ambiguity: it serves equally to enslave and to liberate. The image of the sorcerer's apprentice is replacing that of the devoted and altruistic scholar.

4. We daily become more acutely aware of the interdependence of individuals and even of different societies. Synchronically speaking, we are coming to terms with the global village and its forms of interdependence with respect to the media and the economy, and the poorest nations are rightly insisting on a new economic order that must also be a new environmental order (see the Rio summit in June 1992). Speaking diachronically, we are beginning to worry about the inheritance that we shall be leaving to the future inhabitants of the planet.

All this involves a "modification of the conditions for ethical action". Situations which, until recently, belonged to a sphere outside of human will - to the objective sphere, in other words - and which we were prepared to undergo passively as products of chance, necessity or fate, now appear, at least indirectly, as remote consequences of our own decisions. It is as if the borders between the natural and the artificial, the objective and subjective, have been gradually worn away and everything or almost everything, from the climate to the gene pool, has been put into our hands. From now on, we have acquired the power to destroy the planet, while, conversely, the deterioration of natural balances can have a direct effect on the living conditions and even the very survival of future generations.

From this it follows that from now on we are responsible for what we previously had no need to worry about: the earth, the future, the coming generations. We have in fact, following H. Jonas and P. Ricoeur, to adopt as basic axiom the assumption that "we have as much responsibility as power"<sup>13</sup>. From the moment that the natural world has been increasingly rebuilt

- and to a large extent altered - by technology, we have become responsible for it, as for the coming generations, whose living conditions will depend on what we leave to them.

In introducing the idea of responsibility<sup>14</sup> into the debate in this way, it is obvious that its meaning changes. When speaking of environmental responsibility, or of responsibility to future generations, there is no longer any question of imputing blame to someone at fault at some moment in the past. This repressive idea of responsibility no longer corresponds to the type of problem raised. It is rather a question of the duty incumbent on the person addressed to respond to the appeal made to him or her. In various languages, the etymology of the word "responsibility" recalls this primary and essential sense: being responsible entails a response to an appeal. Responsibility here, therefore, implies a mission undertaken collectively with regard to the future, not guilt arising from a past act.

This sort of ethic is no longer that pertaining to kith and kin, nor that involving a balance of activities between more or less equal partners (according to Hume & Hart's "context of justice")<sup>15</sup>; it is outside the utilitarian calculation of a balance between interested parties. It is quite the reverse in fact, since it involves changes carried out in favour of weaker or even as yet nonexistent partners. The weight of responsibility and its asymmetrical nature, however, become less extreme if we take into account the fact that if each generation owes a debt to the following generations, it has already received its share from the preceding ones. This consideration underlines the relevance of the description that is used increasingly in international and domestic law to denote the most precious elements of the natural world, i.e. the common heritage of humanity. It is in fact becoming increasingly clear that nature itself constitutes this precious heritage that is handed down from generation to generation and for which we assume responsibility as a whole. This leads us to a consideration, at the legal level this time, of the consequences of regarding the environment as a new hybrid form.

### **3. Law**

The emergence of the environmental question as a hybrid contention beyond the classic dualities of epistemology and ethics has, of course, important repercussions in the legal field. The first of these concerns the law of responsibility, which, in this area, has shifted imperceptibly from a subjective responsibility to an objective responsibility. Traditionally, responsibility was regarded as a mechanism guaranteeing reparation for a prior fault on the part of an individual; but technical progress has led to the need to compensate victims of technical or industrial hazards independently of any fault committed by an agent. Responsibility has become objective: it is the risk created rather than the defendant's behaviour which justifies the need for reparation. The first instances of this tendency concerned employers (laws on accidents at work); then hauliers and producers of defective goods were singled out; today, polluters are generally held collectively responsible. Such is the case, for example, with the Council of Europe's Convention of 8 March 1993 with regard to "civil liability resulting from

environmentally hazardous activities". We see here that the emergence of a technosphere or "third world" leads to the appearance of a new type of responsibility based on the risk created by the activity carried out or the goods circulated and where it would be unfair, in the absence of any fault by an agent, to have the immediate victims or society as a whole bear the brunt of the consequences. We also know that together with this tendency to depersonalize responsibility, collective instruments, either in the form of private insurance or in the form of joint warranty funds, have been developed to provide reparation, both of these forms being very common in the area of pollution compensation. In a way, whole societies have become "insurance-based"<sup>16</sup>, which of course contributes to the dwindling significance, or even abolition, of personal responsibility and its replacement by an objective and collective system of compensation for damages sustained.

Furthermore, just as ethical responsibility becomes a responsibility for the future, judicial responsibility is increasingly being seen in terms of a policy of prevention. Here, more than elsewhere, prevention is better than cure. Most of the provisions of environmental law reflect this view. The best example is that of the European guideline of 27 June 1985 "concerning the evaluation of the effects of certain public and private projects on the environment". This text has been referred to as a "quiet environmental revolution"<sup>17</sup> and as a "paradigm shift"<sup>18</sup>. The required environmental-impact studies mean, in effect, that the interests of the environment will now have to be taken into account by decision-makers and judges in a way which is on a par with economic interests; this weighing-up of interests should, according to the text of the guideline, include long-term effects and have regard for an environment which is itself very broadly defined as an interaction between human factors and physical factors. Finally, provision is also made for setting up procedures for consulting the general public, which will generate new forms of participatory democracy. The idea of prevention has itself been strengthened by the precautionary principle as written into the agreement on biological diversity signed in Rio on 5 June 1992 and in article 130R of the Treaty of Rome, according to which principle our ignorance of the precise effects of our behaviour may not be taken as a pretext for inaction. This principle entails a radical change in outlook: a reliance on progress and a basically favourable attitude to technology are here replaced by a need for caution. The principle of *in dubio pro natura* has been called into play: reversing the burden of proof, it is up to those undertaking any activity likely to transform the environment to demonstrate the absence of negative effects.

However, here too a dialectical sense is called for: the policy of prevention and objective responsibility should not in themselves lead to the elimination of subjective responsibility, the only one capable of lending moral weight to behaviour. In the absence of any adequate punishment for faults committed, there would be a real risk of innocent parties' having to bear the cost of reparation and no-one would have an incentive to invest in reducing pollution. The

protection of the environment involves a combination of subjective and objective responsibility.

The second result of the emergence of the environment is the doubt that this entails in the field of legal control and of the distinction between objective law and subjective law. Both strategies have in fact failed to ensure efficient protection of the environment: either there is an attempt to regulate the environment by means of authoritarian rules from public law, or on the other hand it is claimed that the same results will ensue from granting fundamental subjective rights to the environment, or by referring to private property and the market. From the beginning of the seventies, administrative environmental law has been developing, including penal sanctions and a host of institutions responsible for carrying it out. Twenty years on, the results of such law, bureaucratic and regulatory as it is, appear extremely disappointing. It strongly resembles Penelope's shroud, woven by day and unravelled each night, according to a classic scenario by which the state-as-impresario aims to satisfy conflicting interests at the same time. As a reaction to this, other - individualist and emphatically private - strategies are currently being proposed. Why not entrust the protection of the environment to private enterprise and the market<sup>19</sup>? Surely the owner is the best protector of his own property? In putting a price tag on nature, surely the market will finally appreciate its value? In the context of this enterprise culture, gain the right to negotiate the norm with the authorities and new markets are created, like the markets in the USA based on the pollution rights. At the same time, more and more states are writing basic environmental rights into their constitutions.

But this subjectivist strategy is hardly more convincing than the previous one: if constitutional rights to the environment are understood as just one more individual prerogative, we are no further from possessive individualism; and if environmental contracts are not supported by an imperative norm, they amount to deregulation pure and simple. The protection of the environment therefore appears, once again, to involve a dialectical strategy that shifts the classic boundaries between objective and subjective law, between public and private law. What we need, in order to build up a legislation really able to deal with the environment as a new hybrid form, are basic rights understood as procedural rights giving citizens a say in the management of the environment: the right to information, to consultation and of recourse to a court of law. These are rights/mechanisms given final expression by a third party or by a higher consideration; Jellinek spoke in this respect of *status activus*<sup>20</sup> that presupposed an active citizenry concerned for the *res publica*<sup>21</sup>. But this movement on the subjective side also implies changes on the side of objective law: the environmental norm can become effective only if it has been arrived at by negotiation between all the social actors involved: local authorities, firms, associations for the defence of nature. Not a take-it-or-leave-it negotiation, but a real procedural emanation of the law which, while maintaining as its aim the best possible defence of the environment, will incorporate different relevant points of view. Two corollaries derive



from this reconstitution of ways of regulating the environment, two consequences which, once again, disrupt the classic dichotomies. The first is that these new judicial procedures imply the existence of strong associations - industrial lobbies and national and international associations for the defence of the environment - as a third partner between individuals and the state, between the private and the public spheres. Such associations have been rightly referred to as an "Environmental third estate"<sup>22</sup>. The second consequence of this shift consists of the new insistence placed today on duties and responsibilities rather than on rights and interests. After two centuries of insistence on individual prerogatives, the moment has perhaps come to stress that a society is viable only if its burdens too are taken up jointly by its citizens: it is in this sense, as we have seen, that we suggest trying to understand the new environmental rights.

Finally, the third consequence of the emergence of the environment into the legal field concerns the legal status itself of nature, increasingly treated as the "common heritage" of the nation or of humanity as a whole. As long as this terminology is not used purely for the sake of rhetoric, the judicial characterization of "common heritage" seems to me to be particularly gratifying as a way of regarding the environment as a hybrid form of subject and object. Since Roman law at least, a heritage has been a mixed concept involving both people and things. On the one hand it covers a set of "saleable" objects, to which a money value may be attributed and which may be relinquished or transferred, but on the other hand it covers a set of symbolic values contributing to the definition of group identity and group memory and which, in this sense, is "unsaleable", being held in common. The idea of heritage is therefore a dialectical concept: in its aspect as "capital" it needs to be conserved and protected as it is (think of the gene pool, the harmony of certain landscapes, the quality of certain surroundings which may not be changed or the size of certain populations which may not be reduced without passing a point of no return), insofar as it refers to the "interest" on this capital, the heritage may be managed with a view to consumption. Heritage is also dialectical in that it transcends the distinction between public and private. As a legal characterization based on concern for the common good, the idea of a heritage can be applied both to the public domain of the state and to private property. When a natural site or a resource is "included in the heritage", this inclusion imposes specific obligations (constraints on private property, public obligations in administrative law) on the owner - whether a public authority or a simple individual is immaterial - with a view to retaining the property as a whole while guaranteeing a certain division of the use to be made of it. It is therefore not so much a question here of "expropriation" as of "transappropriation"; the use made of the property is determined by reference to the common good. The idea of heritage, finally, is also dialectical in that it appears "translocal" (its value and function go beyond the local framework) and transtemporal" (it is at the same time a product of history and a precondition for a reasonable future).

## **Conclusion**

Just a few closing words. The environmental crisis, we have said, shows the blind alleys into which modern dualist thought leads, as it counterposes subject and object and their countless corollaries. This is not to say that we are appealing in any way for a return to holistic and prelogical thinking with its amalgamation of subject and object. Furthermore, it is well known that monism and dualism are two sides of the same coin. The real alternative is dialectical: here this involves saying what links us to nature and what separates us from it. This alone allows us to appreciate in what conditions the "world" we make up with nature might constitute an "equitable world".

<sup>1</sup>. R. DESCARTES, *Discours de la méthode*, Paris, 1966, p.84.

<sup>2</sup>. Cf. the Moore affair and a commentary by B. EDELMAN, *L'homme aux cellules d'or*, in *Recueil Dalloz*, 1989, Chron. XXXIV, p.225 ff.

<sup>3</sup>. Cf. A. NAESE, *The shallow and the deep, long-range ecology movement. A summary*, in *Enquiry*, 1976, n° 16, p.95 ff.; R.F. NASH, *The rights of nature. A history of environmental ethics*, Wisconsin, 1989.

<sup>4</sup>. A. LEOPOLD, *A Sand County Almanac*, New York, 1966, p. 219.

<sup>5</sup>. B. LATOUR, *Nous n'avons jamais été modernes*, Paris, 1991.

<sup>6</sup>. K. POPPER, *The postscript to the logic of scientific discovery. II The open universe*, in French translation, *L'univers irrésolu. Plaidoyer pour l'indéterminisme*, Paris 1984, p. 94 (epilogue).

<sup>7</sup>. Ibid., p. 107.

<sup>8</sup>. I. STENGERS, *L'invention des sciences modernes*, Paris, 1993, p. 155.

<sup>9</sup>. M. TALLACCHINI, *La crisi ecologica tra scienza e filosofia*, in *Vita e pensiero*, 12/1992, p. 816 ff.

<sup>10</sup>. F. OST, *Le juste milieu. Pour une approche dialectique du rapport homme-nature*, in *Images et usages de la nature en droit*, edited by Ph. Gérard, F. Ost and M. van de Kerchove, Brussels, 1993, p. 13 ff.

<sup>11</sup>. H. REEVES, *Malicorne*, Paris, 1990, p. 157 & 162.

<sup>12</sup>. E. MORIN, *La méthode. La vie de la vie*, Paris, 1980, p. 96.

<sup>13</sup>. P. RICOEUR, *Lectures I. Autour du politique*, Paris, 1991, p. 281

<sup>14</sup>. H. JONAS, *Le principe responsabilité. Une éthique pour la civilisation technologique*, French translation. by J. Greisch, Paris, 1990 (German edition dates from 1979)

<sup>15</sup>. B. BARRY, *Justice between generations*, in *Law, morality and society. Essays in honour of H.L.A. Hart*, Oxford, 1979, p. 268 ff.

<sup>16</sup>. F. EWALD, *L'état providence*, Paris, 1986

<sup>17</sup>. M. PRIEUR, *Droit de l'environnement*, Paris, 1984, n° 68.

<sup>18</sup>. F. OST, *Les études d'incidence sur l'environnement: un changement de paradigme?*, in *Legal visions of the new Europe*, edited by B.S. Jackson and D. MacGoldrick, London, 1993, p. 285 ff.

<sup>19</sup>. Cf. in particular *Ecologie et liberté. Une autre approche de l'environnement*, edited by Max Falque and Guy Millière, Paris, 1992.

<sup>20</sup>. G. JELLINEK, *Allgemeine Staatslehre*, 3rd edtn., Herman Gentner Verlag, 1960, p. 419-424.

<sup>21</sup>. A. TOURAINE, *Critique de la modernité*, Paris, 1992, p. 384.

<sup>22</sup>. P. LASCOUMES, *L'éco-pouvoir. Environnements et politiques*, Paris, 1994, p. 224.