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**Should nature be respected?**

by

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Res halieutica: une ré-évaluation

Raphaël Larrère and Catherine Larrère

Should nature be respected?

Abstract. One can consider that there are no values to respect in nature, that humans are the measure of all things, and still wish to preserve natural goods and beings. How can we protect nature if we take into account only the “resources” it provides? All we have to do is enlarge the notion of “resource”. To the provision of raw materials and energy, to using nature as a source of food, medication and leisure, we would need to add the scientific, aesthetic and spiritual resources we draw from nature. Likewise, we need to think about future generations, to whom we must transmit a “natural patrimony” capable of satisfying their aspirations and needs. While such anthropocentrism is full of good intentions, it is open to criticism. It has been pointed out that, even when future generations are taken into account, and even if disinterested interests were included, anthropocentrism results in protection according to human preferences. If we want to respect nature, if we consider that the way we relate to nature is not morally neutral, we must stop seeing it as simply a set of “instrumental values” (resources) and be willing to recognize that nature has “intrinsic values”. That is why we have attempted to work out a set of environmental ethics that grant either living beings or ecological systems value in themselves. In the first part of the article, we make a critical assessment of anthropocentrism in the broad sense. In the second part, after having explained why “ecocentric” ethics seem to us more relevant than “biocentric” ethics, we make a proposal that could lead, through the adoption of biodiversity as a standard of action, to a compromise between an ecocentric ethics and an anthropocentric approach.

Key words. Biodiversity — Economic assessment — Environmental ethics — Patrimony

Résumé. On peut considérer qu’il n’y a pas de valeurs à respecter dans la nature, que l’homme est la mesure de toute chose, et vouloir néanmoins préserver les biens et les êtres naturels. Comment protéger une nature dans laquelle on ne prend en considération que les “ressources” qu’elle procure? Il suffirait d’élargir la notion de “ressource”. A la
fourniture de matières premières et d’énergie, aux usages alimentaires, médicaux, de loisirs, il faudrait ajouter les “ressources” scientifiques, esthétiques et spirituelles que nous pouvons puiser dans la nature. De même conviendrait-il de prendre en compte les générations futures, à qui nous devons transmettre un “patrimoine naturel” capable de satisfaire leurs aspirations et leurs besoins. S’il est animé de bonnes intentions, cet anthropocentrisme n’est pas à l’abri des critiques. On a fait remarquer que, même élargi à la prise en considération des générations futures, et quand bien même prendrait-il en compte des intérêts désintéressés, l’anthropocentrisme fait dépendre la protection des préférences humaines. Si l’on veut respecter la nature, si l’on considère que les relations que nous entretenons avec elle ne sont pas moralement neutres, il faut cesser de n’y voir qu’un ensemble de “valeurs instrumentales” (les ressources), et accepter d’y reconnaître des “valeurs intrinsèques”. C’est pourquoi l’on a tenté d’élaborer des éthiques environnementales accordant soit aux êtres vivants, soit aux systèmes écologiques une valeur en soi. Dans un premier temps, nous procédons à un examen critique de l’anthropocentrisme élargi. Dans un second temps, après avoir expliqué pourquoi les éthiques “écocentriques” nous semblent plus pertinentes que les éthiques “biocentriques”, nous avançons une proposition susceptible d’aboutir, par l’adoption de la biodiversité comme norme d’action, à un compromis entre une éthique écocentrique et une approche anthropocentrique.

Mots-clés. Biodiversité — Ethique environnementale — Evaluation économique — Patrimoine

Environmental ethics seek to establish that there are values to be respected in nature. As a result, they criticize anthropocentrism because it sees only a set of “resources” in nature. Certain authors nevertheless suggest that it is possible to consider that there is nothing to respect in nature, that man is the only source of values and the measure of all things, while at the same time wanting not only to protect nature but also to protect it efficiently. It is futile to elaborate theoretical constructions that shock common sense and lead to sterile controversies: respecting nature is compatible with a “broadened anthropocentrism” (also called “weak anthropocentrism”). This, for example, is the viewpoint of Bryan Norton (1991). According to him, ethics that only take into consideration the “resources” humans derive from nature may lead to protecting goods, spaces and natural beings from the way they are exploited (or neglected). It is sufficient to realize that humans are not driven by material interests alone but also have disinterested motives. The notion of “resources” should therefore be broadened. It is a question not solely of usage (supply of raw materials and energy, food or therapeutic uses, etc.) but also of “resources” that are scientific (there is still a lot more to learn about all the species living on this earth and, a fortiori, all their
virtues), aesthetic (the beauty of certain species, environments and natural landscapes) and even symbolic or religious (in their diversity, all human cultures attribute a symbolic value — or supernatural virtues — to certain species, sites and landscapes). Likewise, anthropocentrism should be broadened with the long term in mind. While exploiting the “resources” we draw from nature, future generations must be taken into account because it is our duty to hand over to them a “natural heritage” capable of satisfying whatever their aspirations and needs may turn out to be.

Although this anthropocentrism is driven by good intentions, it is not immune from criticism. It has been observed that even when broadened to take future generations into account, and even if it were to incorporate disinterested interests, anthropocentrism results in the protection of human interests. If one wishes to respect nature, if one considers that the relations we maintain with it are not morally neutral, it is necessary to stop seeing in it merely a mass of “resources”, of instrumental values, and to agree to acknowledge its intrinsic values. This is the reason why efforts have been made to elaborate environmental ethics, giving either to living beings or to ecological systems a value in themselves.

We propose, in this article, to start by outlining the features of anthropocentric ethics and then to submit a critical presentation of biocentric and ecocentric ethics, before putting forward a possible compromise between ecocentric ethics and an anthropocentric approach.

1. Virtues and limitations of a broadened anthropocentrism

Economists are already actively engaged in research on how to integrate this broadened anthropocentrism in their models. However, it is no easy matter to attribute a fictitious price to the simple existence of natural objects (which, moreover, are not all known). The long-term integration of economic models raises tricky questions, such as how to take into consideration the interests of future generations when their preferences are, by definition, unknown. Another approach that falls under a broadened anthropocentrism is to look upon the elements of nature, and nature itself, as a wealth we have inherited, and which should in turn be handed down to future generations. The question, in that case, is to determine how to use this heritage according to the diversity of current interests (both interested and disinterested), while considering what should be bequeathed to our descendants.

We illustrate the contributions and limitations of the economic approach by focusing it on an evaluation of non-marketable natural
goods, and examine how the heritage approach can contribute to taking future generations into consideration.

1.1. Taking disinterested interests into consideration

According to economists, economic rationality is universal, to such an extent that it not only is applicable to economic patterns of behaviour (producing, trading, consuming and accumulating) but also regulates the generality of behaviour codes (including the types that have nothing to do with the market) and the use of all goods (including those that are neither produced nor marketed, nor even, in certain cases, capable of being appropriated). It is easy to understand that the ambition of economists is to incorporate in their reasoning and calculations all the practices carried out by humans and all the goods of the world. Being anxious to protect nature, they are determined to prove that it is economically rational to preserve these goods because they contribute to the general wellbeing. They will, in consequence, integrate in their economic calculations the utilities associated with these goods, which may not have any market value but nevertheless possess values of usage (non-marketable amenities), to which certain individuals attribute a “value of existence” (beyond all use).

To evaluate natural goods or the “amenities” attached to an object or a place, economists proceed as if these goods and benefits are the object of a transaction, as if they can be measured by the same yardstick as other utilities. Since there is no market for landscapes, natural beings (when these are resources with a given value), smells, and the quality of water or air, the monetary value that will be calculated is a fictitious one. Economists readily acknowledge that in order to do this they are obliged to resort to artifices that “reveal” the preferences of a public considered to be rational (that is to say, a public that calculates its interests), based on fictitious markets.

Contingent evaluation. Among the various methods proposed, one of the most appealing is contingent evaluation. It was developed in the United States to assess damages, within the framework of proceedings instituted by environmentalists against investment promoters who destroyed or altered natural property. The ex ante method is also used to estimate the impact of development plans and infrastructures that are likely to undermine natural heritage, and is favoured by economists who, as citizens, are usually anxious to protect nature, but who nonetheless are convinced from a professional point of view that goods with no market
value, which cannot be appropriated, are inevitably neglected in terms of both individual choices and political decisions.

The following scenario is usually put forward. A given environment or landscape (it could also be, for example, the quality of air or purity of water) is threatened by a given project, or will be, if things are allowed to run their normal course. A sample of individuals (wisely delimited) is asked what they would each be willing to give in order to avoid this nuisance or rectify it.

The principle behind contingent evaluation is, therefore, to construct an almost experimental situation, in which a suitably selected sample of individuals are placed in a position to attribute a certain sum to enable them to enjoy the threatened natural goods, and even to ensure their existence. Based on the collected consents to pay, and using tested methods, an economic calculation makes it possible to attribute a price to the good in question, and in this way discloses the preferences of the public.

From the logical point of view, one is entitled to envisage a different type of scenario from the one that collects consents to pay. This is the scenario of consents to receive. A sample of suitably selected individuals are questioned about the minimum sum they would be willing to receive in compensation for harm caused by the disappearance or alteration of a given natural good. The effect of a project, accompanied by a description of the economic and social advantages (or an explanation of the need to develop productive practices to keep up with international competition), would be the disappearance (or decline) of a given species or environment, the deterioration of a given landscape, an alteration in the quality of water, or the appalling odours of slurry. The following questions would then be asked: “What is the minimum sum you would be willing to accept to compensate for this loss of enjoyment, or the damage you feel; in other words, a sum that would persuade you to accept that there are no more fireflies, that the landscape no longer resembles the one you love, that your water is no longer drinkable and that the air bothers you? In short, how much would you require to stop complaining?” As in the scenario of consents to pay, and using equally perfected calculations, it would then be feasible to assess the value (just as fictitious) attributed by the public to the goods threatened, condemned or altered.

It had been assumed that the two approaches (maximum consent to pay and minimum consent to receive) were equivalent. But the economists who adopted them soon realized this was not the case. For the two values to be equal, it would in fact be necessary, in economic theory, for the marginal utility of the monetary revenue to be constant. Based on the assumption (which seems plausible) that the marginal utility decreases
When the revenue of the individual increases, it can be demonstrated that the value obtained through the “consent to receive” scenario is higher than that obtained on the basis of the “consent to pay”. This raises the question of the approval given, in the most general way, to the “consent to pay” scenario, even by those economists who are the most anxious to promote the environmental cause. Admittedly, it is possible, in an initial approximation, to attribute it to a concern to be realistic. Over-high values attributed to natural goods are very likely to persuade economic agents, as well as public authorities, to refuse, purely and simply, to internalize these externalities. We shall see further on that this has to do with something else.

Some limitations of the method: what exactly is evaluated and what is a suitably selected sample? For the calculation to have any meaning, the sample of individuals must be placed in a situation of economic arbitration. It is therefore necessary to construct a credible scenario and for every person questioned to be able to believe and participate in the exercise, with full knowledge of the facts. Discussions with the researchers who elaborated these fictitious markets show that what these individuals evaluate is the scenario suggested to them, rather than the good in question. As for the credibility of this scenario, it depends (just as much as in the “consent to pay” scenario) on the limits of the sample and the context of the investigation.

In the evaluation of the bocage landscape in the Loire Atlantique, carried out by two INRA researchers (Colson and Stenger-Letheu, 1996), was the assessment centred on the landscape or on the programme to restore a network of hedges presented to the individuals questioned, who were asked what they would be willing to pay to implement the project? It was, evidently, on the basis of how the project was staged that the people questioned gave their opinions. This was reinforced by the fact that photographs illustrated the scenario submitted to them. What the individuals appreciated, therefore, was not a good (a given state of the landscape) but a representation of the good. In consequence, the evaluation depended on the quality of the photographs and the implicit selection the researchers made among all the illustrations available. It should not be forgotten that an excellent photograph is capable of convincing the public of the beauty of a heap of garbage, but no one would pay the slightest attention to the Montagne Sainte Victoire or the gardens of Vaux-le-Vicomte if they were shown a mediocre photograph.

Another colleague, entrusted with the task of estimating the value given to the biological diversity of the banks of the Garonne by local
residents and users, asked ecologists to elaborate scenarios for restoring the banks and the woods by the river (Amigues et al., 1996). Several were devised but the economist realized that none of them was “sellable” (to use his own expression). The people questioned did not understand what it was all about, or else they did not see why it concerned them. The economist therefore had to use all his skills to construct a scenario that was recognized by ecologists as being capable of fostering biological diversity yet expressed in such a manner that the individuals questioned understood what it was about and why it was of concern to them. It was the actual scenario that was evaluated rather than biological diversity. This was because most of the people interrogated did not know what biological diversity was, or had notions of it that were as vague as they were divergent.

In the examples I have given, the economists did not take into account the inhabitants and regular users. This is justified. If they are not, by some chance, particularly attached to the landscape in question, it is difficult to see why people from the Ile de France or the provinces could possibly feel concerned by the landscape of some ordinary bocage in Brittany or the avifauna inhabiting the banks of the Garonne. On the other hand, if it had been a question of a famous site (the Montagne Sainte Victoire, the Mont-Saint-Michel or a national park, for example), it would have been pertinent to include in the sample questioned individuals who are neither inhabitants nor regular visitors. Similarly, it would be desirable to question a representative sample of the French population on the consent to pay for the survival of the bears in the Pyrenees or the wolves colonizing the Alps. Being content only with the individuals directly concerned would, in effect, dispose of the “value of existence” that many individuals attach to these species without even having the slightest opportunity to see a specimen roam in liberty one day. So, depending on whether consents to pay are collected from people directly concerned or from the public at large, it is very likely that the price of the good would vary considerably. A contingent assessment of the value of wolves would, in all likelihood, be very low if the sample were to be restricted to the inhabitants of the Mercantour or the Savoie, and much higher if focused on a representative sample of the French population. Thus the fictitious monetary value depends on a suitably selected sample, and this in turn depends on how the economist perceives the individuals concerned by his scenario and, consequently, the way he depicts the stakes at issue.

In short, the credibility of the scenarios depends on the ingenuity the economist applies to a practice that has to do with marketing. Contingent evaluation does not reveal the preferences of the public but constructs
them, with all that implies in terms of manipulations in which the presuppositions of the researcher intervene.

**Critique of the practice of contingent evaluation: a matter of justice.** The two scenarios consisting of the consent to pay and the consent to receive do not have the same meaning. Opting for the scenario of the consent to receive implies the view that individuals are entitled not to be disturbed in their enjoyment, that their aspirations of seeing a given species, environment or landscape preserved, or ensuring the quality of their water and the air they breathe, are legitimate. Any action susceptible of disturbing this enjoyment, or counteracting these aspirations, can be legitimized only by giving compensation. Opting for the scenario of the consent to pay, on the contrary, entails considering that the economic agents whose activities are liable to harm the existence or quality of these common non-commercial values have the right to destroy or alter these goods because of their social usefulness (productive activity validated by the market, maintenance or creation of jobs) and therefore to harm the individuals who are attached to them. If these individuals do not want their rights to be infringed, they will have to sacrifice a sum of money expressing the value they attach to the goods in question by the expenditures they are willing to undertake to preserve them. Their aspirations are legitimized only by their consent to pay.

It may seem logical to adopt the “consent to receive” approach in all cases in which the good risks being affected by an activity or an investment, and the “consent to pay” approach in cases in which an activity or investment could improve the availability or quality of a good, or even produce new goods. In brief, the consent to pay would apply to cases of improving the environment and the consent to receive to cases of deterioration. But this is not actually true. Economists systematically use the consent to pay to assess the value of the good, and when they use the consent to receive it is to calculate the compensation that the offending economic agents demand in order to abstain from undermining it (by modifying their practices or projects in such a way as to ensure there is no loss of enjoyment). Thus the advantage of the “consent to pay” scenario appears to indicate that for preoccupations about environmental goods finding a legitimate place in the economy, the principle of “the polluter pays” should be replaced by the principle of “the polluted pays” (and eventually completed by that of “the polluter or payee” … in order not to pollute).

**Instrumental rationality and axiological rationality.** The economists who resorted to contingent evaluation were soon convinced that when
an individual refused to disburse anything to preserve a natural good, this did not necessarily mean they did not attribute any value to this good, quite the contrary. Frequently, they are people who either refuse to play the game or do not understand the rules. Some of them quite simply do not see why they should have to pay in order to prevent damage to a good to which they believe they are legitimately entitled. Others give this good a value that has no price because they feel certain values are not negotiable, and the suggestion of a transaction seems almost offensive to them. Furthermore, many individuals have great difficulty in declaring a particular sum, so much so that great ingenuity is required to persuade them to indicate a figure, and it is not always easy to know whether it corresponds to a value they give to the proposed scenario or to the sacrifices they are, in general, willing to make for the environment.

When economists try to solve such problems, they acknowledge that there are motivations other than the maximization of use, that individuals have other good reasons to take action — or refrain from taking action — besides a calculation centred on cost or advantage. This is tantamount to opening the “black box” of preferences, those that, according to theory, are expressed through the means chosen to accomplish one’s purposes. If this box is opened, and as long as it is not closed again abruptly (by envisaging, for example — as has been suggested — instruction for the individuals questioned on the handling of an instrumental rationality they would not have spontaneously), it becomes clear that they are also motivated by values and passions and that they are more altruistic than the interested and calculating subject of their interests – the rational individualist that each one of them is supposed to be. It is then discovered that the choices made depend on the way the individuals understand the scenario, and also understand the place the latter gives them, and that this varies according to the conceptual framework through which they apprehend the world, and finally, as it turns out, there are values certain individuals consider to be intangible, which in their view cannot be replaced or substituted; the cost of their being attached to these values is of no importance at all. It is therefore feasible to envisage rationally the consequences of an action founded on a coherent system of values (not excluding instrumental rationality but assuming a view of the world that cannot be reduced to potential advantages). In brief, besides instrumental rationality, there is conjointly a cognitive rationality (which is a rationalization in a real-life situation, inferred from a conceptual framework) and an axiological rationality (not to mention a passionate rationality, since passions are by nature supposed to be irrational … with the exception of a love for oneself and
the lure of gain). One then discovers, according to the way they interpret the situation and anticipate how others will act (this comes under the domain of cognitive rationality), that individuals will move between the two poles of attraction of instrumental rationality and axiological rationality. Depending on the circumstances, the manner in which they conceptualize the situation and the position they occupy, the individuals will adopt an axiological behaviour or an instrumental behaviour.¹

We are tempted to conclude that contingent evaluation is just an attempt, following many others, to extend economic calculation (and therefore instrumental rationality) to an area that apparently eludes it. Its principal merit would seem to be that it emerges as a staging, that is to say, as a construction and a fiction. It would imply discarding the lessons that can usefully be learned from the construction of a virtual market: the logic of the approach leads to questioning the very presuppositions of the economy. To put it differently, because it is unjustified, this extension reveals the simplistic character of instrumental rationality, and because it consists in the construction of an almost experimental market, it is an invitation to interpret real markets as social constructions.

1.2. Taking future generations into consideration

Taking future generations into consideration is the basic principle behind the notion of sustainable development. Thus the Brundtland Report of 1987 declared: “sustainable development is the one that meets the needs of the present without compromising the capacity of future generations to meet their own needs”. Mrs Brundtland also admitted at the Rio Conference in 1992 that it was an economic and social development aimed at “satisfying equitably the needs related to development and to the environment of present and future generations”. The problem is that we know nothing about the needs and aspirations of future generations. No market, even fictitious, can “reveal” what the “preferences” of those succeeding us will be. In that case, how is it possible to give a value to the concerns of these future generations?

Responsibility towards future generations: Hans Jonas. In a book published in 1979, Hans Jonas called for a new definition of responsibility. He asserted that if technical relations with nature were for a long time considered to be morally neutral, it is because our technical interventions disturbed natural balances only temporarily: inexhaustible and infinitely more powerful than human societies, nature could still absorb
human activity. This is no longer true. Our technology has irreversible effects, not only because of the power it has acquired but also because of its cumulative logic. According to Hans Jonas, the development of our technical power is therefore that of our responsibility since humanity is capable of making the earth uninhabitable. In view of disasters that are inevitable but impossible to predict, it has become a pressing duty to take action “in such a way that the effects of action are compatible with the permanence of a genuinely human life on earth” (Jonas, 1991: 30).

The merit of Hans Jonas is that he raises the issue of “controlling our control” of the way we must guide a technology we increasingly depend on, which is driven by dynamics that do not contain their own correctives. Another of his merits is that he has redefined responsibility as a commitment towards “future generations” and envisaged a moral evaluation of the unintentional effects of technical action in terms of responsibility, and not as the result of a cost/advantage calculation.

This argument was more recently adopted and developed by Dupuy (2002). We have all the means of knowing that technical and scientific societies are inevitably rushing towards disaster, but we refuse to believe it. However, the future will morally judge our acts: those who refuse to believe in disaster and neglect to make every effort to prevent it will be held responsible.

Thus, to take future generations into consideration implies, first and foremost, avoiding the worst-case scenario — or, to put it more precisely, the worst-case scenarios, since they have an unfortunate tendency to multiply. However, strong though the injunction may be, this is in fact the least of our problems. Although it compels us to leave future generations a viable and habitable world, it does not indicate all the artefacts and natural goods that we will be bequeathing them. This, in fact, is the ambition of the heritage approach which, while presenting itself in a less threatening light, nevertheless supposes that the “worst-case scenarios” are being systematically avoided.

The heritage approach. The idea is to consider “natural resources” (in the broad sense), landscapes, environments, species and goods, such as the air, water and earth, as a heritage, to which many people are entitled: individuals (whether they are owners or users), small or large groups (local communities, nations) and the whole of humanity. Even if some of these goods are appropriated, they are of importance to others besides their owners. Thus, land appropriated and developed by farmers and foresters is also, as a landscape, a heritage for all other users of the place, and if it is a well-known site it can even be looked upon as being
the heritage of humanity. Thus anyone who assigns a symbolic, ritual or spiritual value to a heritage (whether it is a natural being or a site) can be qualified as a stakeholder.

The first consequence of this notion of heritage is to ensure that all these “common goods” are managed in such a way as to take into account the practices, needs and aspirations of all categories of stakeholders. Given the impact of these activities on the different stakeholders of the good in question, efforts should be made to negotiate a suitable way of managing it among all the players concerned. In the case of a landscape, for example, it would even be feasible to consider that the environments composing it, with the animal and plant species it contains or shelters, are also entitled to the heritage it represents. Admittedly, environments and species cannot participate in multi-player negotiations but those who claim to be their spokesmen (scientists or militants for the protection of nature) might possibly play an active role.

The second consequence is to take into account the succession of generations. In the case of heritage, it is something that is inherited and in turn bequeathed. It means considering every generation as having the usufruct of a good it inherits, but with the duty to hand it down in order to guarantee the living conditions and also the identity of their successors. Since each generation has the right to use (and finds it necessary to use) the natural and technical heritage it has inherited, according to its own needs and aspirations, the question is to know whether such use will make it possible to pass it on to future generations.

One response has been to look upon natural goods as a “capital” and to assume that a generation has the right to dilapidate part of this “natural capital” on condition that it compensates for this loss by other forms of assets (technical capital, scientific knowledge, etc.). This boils down to reckoning that the disappearance of natural “resources” or ecological services can be envisaged provided that artificial goods and services can replace them. This question has nourished a controversy among economists on the interpretation of sustainability, and it has created many difficulties from both the technical and the economic and political standpoints (Bourg, 2005). First of all, it is impossible to substitute everything (the disappearance of a species is irreversible and no artifice can replace it, just as no techniques exist to compensate for global warming due to gas emissions with greenhouse effects, etc.). Second, it is useful to bear in mind that the distinctive feature of ecological services is that they are supplied free of charge, and it would undoubtedly be very expensive to replace them by technical services. To avoid polluting a river, for example, is preferable to installing a factory to purify its water. Finally, it is
obvious that a free ecological service would be replaced by a commercially based technical service, making individuals heavily dependent on the technical systems and capital invested in it. But in addition to the fact that it is disputable, this assimilation of natural heritage to a capital that can be replaced by technical assets implies imposing the choices of the present generation on future generations in terms of its relations with nature and dependence on technology.

Another response is to consider that the duty of one generation is to leave future generations, whose needs and aspirations are unknown to us, free to choose how to use the natural “resources” as they see fit. This means the present generation must avoid hampering future relations with nature (and technology) through its current relations. The heritage approach, therefore, derives from an ethic consisting in “placing at the top of one’s preoccupations a constant concern to preserve the liberty of choice of those who will come after us” (de Montgolfier, 1990: 35).

Transmitting a freedom of choice? Although this concept of the heritage approach is more acceptable in that it does not constrain future generations, it is appropriate to indicate what this concern for their freedom of choice entails.

First of all, anything irreversible needs to be avoided. This means, on the one hand, respecting the imperative of Jonas not to hand down an uninhabitable environment unworthy of the human condition. It also means that it is necessary to avoid the disappearance of species, environments and “resources” that we can (or should have been able to) enjoy and thus deprive our descendants of them.

The next point is that transmitting the freedom to choose assumes preserving biological diversity at different levels where it can be evaluated. In effect, the greater the genetic diversity within species, the greater the specific diversity of environments, and the diversity of habitats within regions, the more species there will be in the biosphere, giving future generations greater flexibility to decide how they will be able to take advantage of this heritage.

Finally, one of the means of preserving this biological diversity is to guarantee as of now the diversity of uses and representations, with the exception of the uses that erode this diversity and the concepts justifying this destruction. The interest of this heritage approach, therefore, is to investigate the relations between inter-generation justice (the uses made by the different stakeholders) and intra-generation justice (the concern for future generations). If this approach can benefit from a formalization
of the system of interaction between all the players entitled to natural heritage, and if it is regulated by a principle (freedom of choice for future generations), it remains fundamentally political because it requires inviting all stakeholders to debate on the common property without compromising the future.

2. Environmental ethics

The view that there are only instrumental values in nature corresponds to the division established by Kantian morals between “instrumental value” and “intrinsic value”. Since man is the mainspring of his actions, he considers himself “an end in itself”. He therefore gives himself an “intrinsic value” and attributes only an “instrumental value” to the means enabling him to accomplish his ends. It is this “subjective principle” that Kant generalizes as an “objective principle”. According to him, “All reasonable beings imagine their existence in this way, as a consequence of the same rational principle that also applies to myself; it is therefore an objective principle at the same time” (Kant, 1985: 295). In other words, everyone must recognize rationally the “intrinsic” value they attribute to themselves in any other beings capable of attributing such a value to themselves. This generalization of a subjective value leads to the objectivity of ethics and the mutual recognition of an “intrinsic value” to all beings of reason. In consequence, man, as a moral subject, is likely to have moral rights protecting his life, freedom and physical integrity. This is why it is immoral to take into consideration only the “instrumental value” of other human individuals. However, the moral community identifies itself with, and restricts itself to, humanity since only men are rationally able to recognize the quality of being “an end in itself” in any other reasonable beings.

Animals are not beings endowed with reason, and so they do not have an “intrinsic value”. They have only the value humans give them, that is to say, an “instrumental value”. Admittedly, even though they are not things, they are not moral subjects either. In fact, they are just as incapable of claiming their rights as they are of exercising obligations. However, although animals do not have rights, we can have obligations towards them, or, to put it more precisely, we should not be cruel to them. We have indirect obligations towards animals derived from the direct obligations we have towards ourselves, for it is degrading to inflict suffering on a sensitive being. In the case of animals, we do not have a very clear idea as to whether they are capable of feeling pain or pleasure, and in the case of plants and, *a fortiori*, bacteria and protozoa,
we obviously do not have any obligation to take them into consideration. These natural beings are at the disposal of humans who give, or do not give, them a value.

2.1. “*Intrinsic value*” and “*biocentric*” ethics

This Kantian division (advocated by Ferry [1992], well before becoming a minister) has been subverted by authors such as Taylor (1986) and Rolston (1992, 1994). They want to investigate whether it is possible, without calling the moral qualification of humanity into question, to allow all living beings to benefit from a moral consideration. When observing organisms in nature, Rolston sees at work behaviour patterns and adaptive strategies that are a means to an end. As all living beings tend to maintain themselves in existence and reproduce themselves, they can be considered an “end in itself”, especially since the resources they draw from their environment have an “instrumental value” from their viewpoint. Considering a vertebrate, insect, plant or bacterium as an “end in itself” is tantamount to finding in the behaviour that enables it to live and thrive the functional equivalent of the intentional acts of human beings. Without betraying the structure of the argument, but by subverting certain claims, there has been a shift from Kantian anthropocentrism to “biocentrism”: the centres of value are living beings — in their capacity as “teleological centres”, as claimed by Paul Taylor.

*Nature is not fair!* By pursuing its ends — maintaining itself in existence and reproducing itself — an organism inevitably undermines other organisms, for living beings must eat and protect themselves from predators and parasites. Any “end in itself” lives at the expense of other “ends in itself”, without in the least respecting their “intrinsic value”, otherwise they would be unable to live. Rolston himself acknowledges that nature is not fair (1992). It is therefore no easy matter to translate this recognition of the “intrinsic value” of living beings into behavioural norms.

One could adopt the view that this “intrinsic value”, provided it does not undermine any living organism (which would, of course, be impossible), requires such damage to be justified by the need to eat, defend one’s life, fight against diseases, parasites, etc. In that case, a radical version would be not to accept the destruction of an organism unless it is to satisfy vital needs. True, but the way this is expressed raises many difficulties. First of all, justifying a neglect to respect “intrinsic” values moves away from the ethics that Rolston and Taylor wish to establish.
The next difficulty is how to define these vital needs. While it is permitted to seek protection from parasites, is it also acceptable to destroy those that attack our domestic animals or the pests that ravage our crops? Do vital needs depend on the size, weight and life expectancy of individuals, to the extent that an American or European would have the right to destroy more living beings than a poor inhabitant of a developing country? If there is an “intrinsic value”, should it not be respected in a uniform and universal manner?

To avoid these delicate questions, a pragmatic solution is to reserve respect of their “intrinsic value” to organisms belonging to species or populations protected by law due to a threat to their survival.

Because of their deontological nature, biocentric ethics can in fact decree prohibitions, to be subsequently reflected in legislation. An example is Act 76–629 of 10 July 1976, related to the protection of nature in France. “Whenever a particular scientific interest or the need to protect national biological heritage justifies the preservation of wild animal species or uncultivated plants, it is forbidden to ….” The provisions of the law on the protection of nature justify the ban on destroying, mutilating, detaining, transporting, disposing of or removing samples of any specimens of the species in question. Among the grounds for its decision, the law puts forward scientific reasons and takes into account the interest of preserving “national biological heritage” for future generations. If the law protects species, it is because they are natural resources (of a scientific, utilitarian, aesthetic nature, etc.), and because they represent an “instrumental value” for society. The justification is, in that case, anthropocentric. But the prohibitions stipulated in the text of the law are implicitly inspired by biocentric ethics. It is indeed a question of respecting all specimens of a protected species and protecting them from any kind of harm. Although it does not give any “intrinsic value” to the individuals belonging to the species mentioned on a closed list of protected species, this law can actually be considered as a restricted application of biocentric ethics (Larrère, 2000).

“Ecocentric” criticism. The characteristic of “biocentric” ethics is that they encourage respect for and protection of individuals. The issue at stake when protecting nature is the fate of the populations or species. Even more, the protection of specimens against removal by humans is not sufficient to save threatened populations and endangered species. There is certainly no lack of examples of animal species whose disappearance followed excessive exploitation by humans to feed, clothe or cure themselves, or to protect their cattle, livestock and crops. But most species — at least the land species — are endangered not by hunting,
fishing, gathering or malicious intentions but by the disappearance of
the environments (through land clearing and concreting) that were
indispensable or favourable to them. They are also threatened by the
negative use of non-specific herbicides and pesticides, drainage, the
splitting of their habitats as a result of urbanization and the construction
of infrastructure networks, pollution and the concentration of toxic ele-
ments along the trophic chains, and the disturbance caused by the grow-
ing number of tourists, in short, by the unintentional effects of human
activities. To protect a given population, it is the environment on which
it depends that must be preserved and not the life of all the individuals
composing it, because the life of all organisms is threatened naturally.

2.2. “Ecocentric” ethics

The “ecocentric” ethic is concerned not with the fate of one specimen or
another of an animal (or a plant) but with an invitation to respect envi-
ronments and natural processes, landscapes (in the sense of landscape
ecology) and, finally, biological diversity as such. It does not propose to
establish that natural beings can benefit from moral rights: more than the
values to be respected, it seeks to define right rules of behaviour towards
nature. It is inspired by the approach adopted by Aldo Leopold (1949).

The contribution of Aldo Leopold. Faithful to Darwin and his Descent
of Man, and Selection in Relation to Sex (1877), Leopold concedes that
the moral behaviour of humans is due to the fact that they have always
lived in communities. For these communities to avoid becoming the bat-
tleground of a war by everybody against everybody, and to ensure that
their members could, if necessary, assist each other, it was necessary to
learn the obligations of being a member of the community, in other
words, to respect the other members and the community as such. The
intention of Aldo Leopold was to extend ethics to inter-specific commu-
nities within which humans carry out their actions. “All the ethics so far
evolved”, he writes, “rest upon a single premise: that the individual is a
member of a community of inter-dependent parts. […] The Land Ethic
simply enlarges the boundaries of the community to include soils,
waters, plants and animals or collectively: the land” (Leopold, 1949:
239). Like other ethics, this one involves respect for other members of
the community and also respect for the community as such.

This extension occurs at both global and local levels. Considering
nature as a whole, Leopold maintains that humans are not external to the
nature they belong to. “Men are only fellow-voyagers with the other creatures in the Odyssey of evolution. This new knowledge should have given us, by the time, a sense of kinship with fellow-creatures; a desire to live and let live; a sense of wonder at the magnitude and duration of the biotic enterprise” (1949: 117). Only a moral sentiment can be drawn from this, but no precise behavioural norms. It is at the local level — the one developed by the *Almanac* (1949) — that this “sense of kinship” could become concrete.

Leopold owned some property in Wisconsin, consisting of a shack, woods and marshes. Early in the morning, he would set off with his gun and his dog to explore it. Hunting (and sometimes fishing) was therefore at the centre of the tales about nature that inaugurated *A Sand Country Almanac*. According to him, hunting was a way of being, a way of acting in nature. Every morning, Leopold discovered that many other users frequented his land, besides himself and his prey. There was a wide variety of animals and plants seeking, and finding, resources on his land. A multitude of viewpoints cohabited in his hunting territory, and they were not necessarily compatible with each other, nor were they compatible with his own viewpoint as a hunter and forester. The following questions therefore arose. How to respect all the users of the land? How to take their points of view into consideration? Since any action (especially hunting) is liable to cause harm to other users of the place, how is it possible to know whether this negative effect is tolerable or not? The level at which the pertinence of an action should be judged is, according to Leopold, that of the “biotic community”, that is to say, all the beings living in interaction in a given space.

*Consequential ethics with evaluations depending on the context.* An action will, or will not, be right depending on its consequences on the “biotic community”. These consequences can be anticipated by a science — ecology. Contrary to “biocentric” ethics that are deontological, Leopoldian ethics are consequential. In other words, an action is right and pertinent depending on the consequences that may be apprehended through ecology, and not because it complies with universal principles that attribute rights to all living creatures.

Leopoldian ethics are local and circumstantial. Depending on where they find themselves in action, humans are part of one “biotic community” or another. However, there is no reason for the behaviour rules to be the same everywhere. Thus, clearing a parcel of land on a wooded plain does not have the same impact, ecologically speaking, as cutting down one of the last groves in a region, or clearing a steep slope with
the risk of causing further erosion. The same is true for hunting. It all depends on the technique adopted, the period, the relative number of hunted animals, and the disturbance inflicted on species other than game. It is a question not so much of defining universal interdictions but of encouraging the appropriate behaviour to fit the circumstances. What is important is to act with perspicacity – one could even say “civility”. According to Leopoldian ethics, human activities should be judged from the viewpoint of “biotic communities”, of all the beings frequenting the ecological entities formed by landscapes. But to assess the impact, it is necessary to apply a rule common to the diversity of the cases. Leopold defined this general rule to distinguish the good from the bad, in each context, as follows: “A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise” (1949: 262).

Let us examine his maxim. Since the point is to know what is “right”, this comes under the domain of permission and not interdiction or obligation. “Preserving integrity” corresponds to the assertion that the Land Ethic must respect other members of the biotic community, and the biotic community as such. This means acting in such a way as to make sure that no animal or plant population is eliminated from the biotic community, and to ensure the reproduction of the latter in its specific composition. If the intention of Leopold was to “preserve stability”, it was because the ecology of his time (after Tansley and Lindeman, and a few years before Odum) focused on the balances of nature and the self-regulating mechanisms of ecosystems. Finally, if Leopold wished to “preserve beauty”, it was also because he searched for an axiology of our relations with nature, combining his Land Ethic with a Land Aesthetic (Callicott, 1987, 1989).

This tends to reconcile the ecocentric (the integrity and stability of “biotic communities”) with the anthropocentric (their beauty) points of view. Considering that man should be active in nature, Leopold felt that he could legitimately look for its “instrumental values”, and as a hunter he found in it the means to capture prey, satisfy a hobby and enjoy aesthetic emotions. But this active man in nature, appraiser that he is, has his own position, playing a very specific role in the biotic community where he intervenes as a farmer, forester, hunter or tourist. Belonging to this biotic community through his activity, he must respect it thanks to his ecological knowledge, that is to say, to make sure it lasts. It therefore makes perfect sense to seek a compromise between an anthropocentric standpoint (represented here by aesthetics) and that of biotic communities.
2.3. Ecocentrism today

Assimilating a respect for biotic communities with the preservation of their integrity and stability corresponds to the state of ecology at the time when Leopold wrote his *Almanac*. This ecology, close to the one adopted by Odum, whose *Fundamentals of Ecology* (1971) was the bible of ecologists and remained so until the mid-1980s, focuses on the mechanisms permitting ecosystems to return to a state of equilibrium when they have been disrupted. Within this theoretical framework, the stability of ecosystems is viewed as a positive value. But classical ecology considers jointly that specific diversity (the equilibrium and number of species composing a biotic community) is favourable to the stability of biocoenoses. The integrity of the biotic community is preserved by maintaining its specific diversity, in other words, working for its stability. This is precisely what calls into question the recent developments of ecology.

*A maxim made obsolete by recent developments in ecology.* Losing interest in Odum’s ecology, focused on the “balances of nature”, scientists tend to adopt a dynamic concept of ecology. Far from considering disturbances as deplorable accidents that introduce dysfunctions in ecosystems, they incorporate them as structuring factors of “biotic communities”. It is currently accepted that the environments surrounding us are the result of a history of the disturbances they were subjected to, or experienced by the environments interacting with them. The more or less wide specific diversity, like the structure of the mosaics of ecosystems, is the result of a historic process in which natural and man-made disturbances are linked. This leads to transforming the way of perceiving human activities, because the disruptions caused by humans are not necessarily more disastrous than natural disturbances. If nature has a history, if it co-evolves with human societies, man can no longer be considered as the great disturber of natural balances (Larrère and Larrère, 1997).

Recent developments in ecology have shown that with or without human intervention, integrity and stability are the exception in nature, and in the opinion of Robert May (1976) the stability of biotic communities clearly increases with diversity, but only up to a certain threshold. Beyond this threshold they are, on the contrary, extremely sensitive even to slight disturbances. Although his approach still inspires ecocentrism, Leopold’s maxim is now outmoded.

*The reformulation of Callicott.* “To preserve the integrity, stability and beauty of the biotic community? These cardinal values of Leopold’s...
Land Ethic may have to be revised — dynamized, to coin a word — if they are to be ecologically credible” (Callicott, 1999: 134). This observation leads Callicott, after examining the concepts that undermine Leopold’s maxim, to propose another one that corresponds to the hierarchical concept of ecosystems as well as to the ecology of disturbances. It is a question of making a distinction between innocuous or positive disturbances and destructive or negative disturbances. To do so, he makes a comparative analysis of the regimes of natural disturbances and the regimes of disturbances of anthropic origin. On the time–space scale of the biosphere and evolution, what distinguishes the current process of the extinction of species (for which human activities can be blamed) from previous phases of extinction is its pace, just as what differentiates climatic change (resulting from greenhouse gas emissions) from the climatic variations experienced by the earth in the past is that it now occurs at such a fast rate that biotic communities risk being unable to adapt to the new conditions. On a more territorialized scale and within a shorter timeframe, “the problem with anthropogenic perturbations — such as industrial forestry and agriculture, exurban development, drift-net fishing and such — is that they are more frequent, widespread and regularly occurring than are non-anthropogenic perturbations” (Callicott, 1999: 137). “To dynamize the summary moral maxim of the Land Ethic, in the light of developments in ecology since the mid-twentieth”, Callicott (1999: 138) proposes to evaluate the anthropogenic transformations of nature by adding to the Land Ethic norms at the scale of climatic changes and ecological dynamics: “A thing is right when it tends to disturb the biotic community on a normal spatial and temporal scale. It is wrong otherwise” (1999: 138). Interesting and rigorous though Callicott’s argument may be, it raises a few problems that prevent us from adopting it. First of all, what is meant by normal? The reference is, of course, the spatial-temporal scale of natural disturbances. This implies considering that disturbances of human origin are even more negative because they move away from the spatial-temporal modalities of natural disturbances. Surely this implies going back to a concept whereby any action taken by man is likely to be bad if it does not imitate nature? This is a concept that is as foreign to Leopold as it is to Callicott himself. Furthermore, the maxim does not take into consideration the fact that in addition to natural disturbances and those resulting from human activities, there are hybrid disturbances that would be difficult to evaluate. Finally, this maxim does not reflect Leopold’s attempt to reconcile the anthropocentric and ecocentric points of view.
And if a value is given to biodiversity? Even without human intervention, integrity and equilibrium are relative in nature, and frequently called into question. More than stability, contemporary ecology is concerned with the adaptability of populations, populating processes, environments, mosaics of environments, and modifications of their surroundings. One of the theories contemporary ecology seeks to validate is that biological diversity could have a vital and positive effect on the adaptation capacities of ecological systems. This is one of the reasons behind the view that it is possible to distinguish between good and bad disturbances, and between good and bad ways of using and inhabiting nature, through their consequences on biological diversity. This diversity is now defined at different organizational levels of the living: genetic diversity of the populations, specific diversity of functional groups (populating processes, trophic levels), functional diversity of ecological systems, and heterogeneity of landscapes (that is to say, mosaics of ecosystems).

This is how the new scientific context has modified the traditional objectives of protecting nature. It is no longer a question of preserving virgin or wild nature from human interventions and/or allowing secondary successions to develop spontaneously with, as a strategic prospect, the restoration of the climax. It is now a question of either maintaining the regime of disturbances that has produced the present state, or shifting, initiating or hindering — in other words, piloting — ecological dynamics in order to end up with a state that could reasonably be considered preferable to the current situation (or to what it would spontaneously lead to). This implies a distinction between the trajectories that one proposes to initiate and those that should be shifted or hindered. It is based on the expected result, and therefore on the evolution of biological diversity, that scientists tend to carry out their evaluations and to prioritize situations from the point of view of nature.

It should be noted that this eco-centric evaluation is by necessity open to debate. Biodiversity can, in effect, be evaluated at different organizational levels of the living. But there may be a contradiction between the evaluations depending on the level of organization at which they are apprehended. An action that is favourable to a threatened population is not necessarily so at the level of its habitats or the landscapes it frequents. Conversely, an action that is favourable to landscape diversity can quite easily threaten populations. There are cases (invasive and banal species threatening endemic species) in which a decrease in specific diversity at the local level could be favourable at the level of global specific diversity. Should decisions give priority to the local or the global aspects? There is only a political reply to this question.
3. Conclusion: towards a compromise between ecocentrism and the heritage version of anthropocentrism

Numerous considerations have militated in favour of adopting biodiversity as the norm. Scientists accept that extinction exists, and that because of its scope and pace it exceeds those that occurred in the course of evolution. Human activities seem to be responsible for a complex series of intermingled causes: excessive removal of species, systematic destruction of “pests”, cutting down of tropical rainforests, pollution of agricultural or industrial origin, urbanization and infrastructures that fragment habitats. This is a case of the impoverishment of natural resources at the disposal of humanity. In response to Comte, who had envisaged a world composed exclusively of plants and animals useful to humans, going so far as to suggest the methodical elimination of those that are useless or harmful, Mill (1882: 180) retorted that it is impossible to anticipate the development of knowledge and techniques: “as if anyone can assert that science will not one day discover, perhaps, some property useful to humans in the most insignificant grass”. This argument has been repeated many times. It introduces the notion of the interest of future generations. Our activities cause species to disappear and it is not because they are of no utility at present that they will never become useful. This said, we are depriving our descendants of resources from which they might derive some benefit. The argument could be extended to take into consideration disinterested interests, as Norton suggests, because nature is not composed of “economic resources” only, and its objects are also objects of research, contemplation and emotion. But whatever damage this impoverishment of “natural resources” might cause to human life, there is a tendency to believe that there is something intrinsically bad in this, which nothing can justify. The species that are disappearing because of our activities are the result of evolutionary processes that have occurred over millions of years. But what disappears is irreplaceable. There is a discrepancy, intuitively shocking, between activities corresponding to short-term interests and their irreversible consequences. If questions are posed on the natural heritage that will be passed on to future generations, it is easy to deduce that one of the principles guiding our use of this heritage should be to preserve the freedom of choice of our descendants, and to ensure freedom of choice, it is necessary to avoid irreversible effects to the greatest extent possible, and also to maintain the inherited level of biological diversity that has benefited the present generation.
Insofar as biodiversity encourages the adaptability of ecological systems (the ecocentric point of view) to changes in their environment that are likely to disturb them, and insofar as it can be considered as an ensemble of material and scientific resources, and the general consensus is to give it an aesthetic value (the anthropocentric points of view), we are tempted to replace Leopold’s maxim by “A thing is right when it tends to preserve biodiversity. It is wrong when it tends otherwise”. As in Leopold’s phrase, it is a question of reconciling the anthropocentric and ecocentric points of view.


Notes

1. It should be noted that in the field of its privileged application — commercial trading — instrumental rationality presupposes a set of behaviour rules that derive from an axiological rationality. It is a question of conventions and rules of behaviour without which the market could not exist (nobody would have an interest in trading under such conditions) or would be systematically unequal.
2. For a critique on this construction, see Larrère (1997).

3. There appears to be a notable difference between land (or lake) and sea environments. In the oceans, overfishing can lead to weakening considerably the populations of different species, while the pollution and damage caused by deep-sea trawling often seem to be just aggravating factors.

4. In actual fact, ethical replies are not conclusive. According to a Stoic idea taken from Hume (to which Callicott sometimes makes reference), one can give preference to what is near. True, but by giving preference to the family core and its ordinary habitat (“Not in my backyard”), there may be a risk of neglecting (or sacrificing) more global communities: humanity and the biosphere. One can, as Montesquieu (1991) has illustrated in *Pensée* 741, give preference to the global: “If I knew of something useful to me, but which could be detrimental to my family, I would put it out of my mind. If I knew of something useful to my family but which could be detrimental to my country, I would try to forget it. If I knew of something useful to my country but detrimental to Europe; or which was useful to Europe and detrimental to humanity, I would look upon it as a crime.” Yes, but what should one think of a man who spends all his resources on supporting humanitarian causes but leaves his children in poverty? And what could one say of a militant for the protection of humid areas who would not hesitate to allow a small pond near his country house to dry up on the pretext that mosquitoes disturbed him and that this small stretch of water accounted for only an infinite portion of humid areas?

References


