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The price of responsibility – ethical perspectives

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Flash 1: Somewhere in the Arctic, a polar bear is looking puzzled. Where before there was sea ice from which it could hunt for seals, now there is only sea. The habitats and living conditions of the polar bear are changing. Global warming is forcing it to either adapt to the new conditions by living more on land and finding other sources of food or face extinction. So the polar bear is standing with its paws in the salty water, facing a gigantic challenge. A challenge which has become one of the symbols of the climate change which is now becoming a reality in the public space. A space which we all share, where pop stars, 9/11, reality TV, football and now CO₂ emissions are our joint frame of reference. For most of us, the puzzled look of the polar bear spurs a feeling that something must be done. That it is wrong that the polar bear should vanish because we humans have acted in a way which has dire consequences. Something which we have been very long in acknowledging.

Flash 2: The Carteret Islands is a small group of islands off the Papua New Guinea coast in the Pacific Ocean. These islands are being swallowed by the sea, and the approx. 1,500 islanders are being evacuated (2008). Known as the world's first climate refugees, these people must create a new life for themselves as their world is literally going under. The story has made headlines in newspapers worldwide, and the rising sea levels resulting from climate change have been identified as the main culprit. Others are saying that tectonic activity and normal erosion are to blame for making these islands uninhabitable. However, this does not change the fact that the islands and the islanders – in much the same way as the polar bear – have become symbols of the climate change which is currently sweeping the globe. Symbols that we are changing the Earth on which we live, and symbols that the poor and the disadvantaged will be the ones paying the highest price.

Flash 3: Monday morning on a sunny autumn day in 2008. The media are full of the story that CO₂ emissions are increasing rapidly, and despite the considerable political attention devoted to the issue, the growth in emissions is still escalating. Industrial developments in countries such as India and China and the continued growth in the transport sector get the blame.



Known as one of the world's first climate refugees, this woman is seeing how her island is slowly disappearing beneath the waves. The Carteret islanders are facing an uncertain future.

A Dane speaking on the radio news says that of course he would like to do something about it, but when nobody else is cutting down on their driving, then why should he? And so, in less than a minute one gets a sense of how climate change and the reasons for the changes are both to do with global structural conditions and with individual people's unwillingness to assume responsibility. But what does it mean? What will happen and when? You get the feeling that the climate has become the new threat which we can use to deposit our fear of the future. And you sense that there are plenty of reasons to be fearful.

1. Intro

These are just three stories in the almost endless stream of accounts of the consequences of climate change reported by the media every day. What is down to climate change and what should be attributed to other factors can be hard to discern. And to what extent climate change is actually caused by human activity or triggered by other factors is not easy to decide, neither for those of us who are not experts in this field, nor for the experts themselves. However, these questions are addressed in other sections of this book. Here, we assume that the climate is changing, and that this is largely attributable to human activities. Against this background, we discuss the ethical questions raised by this development.

Many people, if not most, believe that it is wrong that the polar bear should face extinction and that poor people should become poorer because other people in more affluent parts of the world will not change their ways. But do we have a responsibility towards other people, animals, plants or the entire globe? And how should we divide the burdens which must be borne in the coming years to mitigate the consequences of the changes which are under way? These are all ethical questions. And these questions are part and parcel of the challenges posed by climate change.

The purpose of this chapter is not to provide hard and fast answers to the ethical questions, but to put the most important questions into words and to show the values which may help the individual person find an answer. In other words, the idea is not to dictate what the right attitude might be, but to help the reader clarify his or her own views. Views spring from values, and ethics is precisely to do with systematic and critical reflection on views and values. Ethics is an invaluable tool if you want to understand both your own views and those of others to the whole climate change issue, and if you want to contribute to it in a qualified way. We therefore start the chapter by presenting a number of ethical key concepts and relating them to the issue of climate change. Subsequently, we delve into the climate change debate to extract a number of examples with a view to pinpointing the ethical issues on which they touch.

2. Ethics as a fundamental premise

It is easy enough to fail. Not to do what one should. Most people know this. Part of being human is experiencing that you fail in your relations with other people and do not treat them properly. We may fail our friend by being late or by losing touch because we simply do not have the energy for all her problems. We may fail the lady at the check-out by not telling her that she has given us too much change back, or the starving children staring at us from the TV screen while we drink our coffee and eat our cake. Not that we can't explain it all. Humans have a unique ability to tell their lives like a story in which they themselves appear just and good. A story which we often need to hear because our conscience tells us that what we are doing is not the right thing. One could call it a form of ethical self-defence.

If we disregard what would, in the specific situations mentioned above, be 'the right thing' to do, it is characteristic of us as humans that we like to be seen to be doing 'the right thing'. We have an ingrained need to be ethical. This need may stem from a variety of sources: Everything from evolutionary advantages to religious influences has been mentioned. In this

context, what is important is that ethics is an everyday phenomenon which involves assessing our own actions and those of others as being right or wrong. An assessment which we make all the time, and one which depends on the values that help us navigate among the many choices thrown at us by life.

Ethics is thus an integrated part of life. There is good, and there is evil, and very few people are indifferent to whether their ways of life and their actions are deemed to belong in one category or the other. However, ethics is also omnipresent in another way. As shown in the examples above, ethics is not just something that comes to the fore when tackling complex and technical problems, as if ethical reflection was reserved for genetically modified animals, climate change and organ donation. A situation is ethical as soon as a responsibility comes into it, as soon as one's actions start affecting other creatures which one feels should be included in the ethical deliberations. A situation is ethical as soon as you have a responsibility. But when is that? The short answer is that you have a responsibility in any situation involving two individuals. One person's actions may contribute to making the other person's life better or worse – on a big scale and on a small scale. So the answer is that you are always ethically responsible, that all situations contain an ethical element.

However, we are often not aware of this responsibility as we simply adhere to the norms which apply in the society of which we are part. We hold the door, say thank-you for supper, help blind people cross the road, take casualties to hospital, see lost children home, behave in a way so that other people do not mind being with us and also think of others, and not just ourselves. Through our childhoods and upbringing – our socialisation – we have many unwritten rules about how to handle the responsibility which we have all the time. And these rules make it possible for us to act every time without having to think everything through from scratch in terms of what we should do in a particular situation. We know already, because the situation resembles other situations in which we have found ourselves or which we have heard about, and we have a clear idea of what we should do in such a situation.

But sometimes we become doubtful. We may find ourselves in a situation where doing the right thing has major personal implications, or where we do not recognise the elements in the situation and are therefore uncertain about what exactly is the right thing.

In the first case, we basically know what is right. What we should do. But as it requires a sacrifice on our part which we cannot bear, we typically start thinking about the ethics to find out whether we are really obliged

to make the sacrifice which the situation seems to demand from us. We know that it is wrong that children should be dying from starvation a few thousand kilometres away while we are rolling in food. But are *we* really ethically obliged to change our lives to the extent required to help these children? In the other case we are genuinely in doubt because we are facing new challenges or opportunities and find it difficult to decide what is the best course of action. Biotechnology is a powerful tool, but how can we best use it for the benefit of us all? This is where the ethical thinking kicks in to help us clarify our objectives and ideals and the possible paths to fulfilling them.

Climate change represents a mixture of both scenarios. On the one hand, climate change raises a number of scarily familiar issues concerning whether and how those who have the most should help those who have the least to a better life. In this context, our lifestyle and our willingness to help are challenged even it means that we must change our lives. On the other hand, we are faced with whole nations sinking into the sea, with the extinction of species on a hitherto unknown scale, changed living conditions for six billion people and even more animals, and with the natural sciences battling to understand both the causes of climate change and the possible consequences. What is the right thing to do in this situation? The answers are by no means clear.

The ethical question is basically: What should I do out of everything which I *could* do. The fundamental ethical experience is thus that there is a difference between actions. Some are right, and some are wrong. However, to answer the question, you have to ask some more questions. First and foremost, what the objective actually is. Simply answering doing ‘the right thing’ or ‘what is good’ is not enough. Most people would agree that this is what we should do. But what is ‘the right thing’ and ‘what is good’? In other words, we are forced to put our values and objectives into words so that we have an idea of where the actions should take us and others. In the face of climate change and the ensuing changes in living conditions on an unprecedented scale, most people can probably accept an ethical objective of upholding or improving quality of life.

However, there is very little agreement on what constitutes quality in human life. Is it when you do not feel pain and all your wishes are fulfilled? Is it when you are challenged to apply your abilities to the utmost and are able to experience the whole gamut of emotions, from the deepest sorrow to soaring happiness? Is it a question of finding technological solutions to climate change which ensure that we can carry on the growth and consumerism which characterises our present society? Or is it a question of changing

our attitude so that we shift our focus from material goods and transport and start leading far more local and simple lives.

Another question is the question of equality. Most people agree that, ethically speaking, it should be possible to treat people differently if there are relevant reasons for doing so. If only some citizens in a country should be given the chance to vote on who should govern, then there should be a good reason for excluding the rest. Otherwise, it amounts to discrimination: Unfair treatment based not on factual grounds. However, sometimes disagreement arises as to what grounds of fact are. In a situation where resources are scarce, the resource distribution can give rise to considerable discussion. Just think of the discussions about what our priorities should be within the health care system. Which diseases should be treated, and what are we prepared to pay for the treatment methods?

Such questions are virtually piling up in connection with the climate change discussion: How should we divide the burdens? Looking at the various countries' carbon footprints, it is clear that a number of poor countries which emit very little CO₂ per capita will be harder hit by climate change and the changing conditions for food production than countries with a very high level of per capita emissions. Is that fair? Should the rich countries pay for the poor countries? Or is it up to each individual country to solve its own problems? Should we help the areas plagued by drought, or should we help the populations on the islands which are drowning? Should we help the Dutch before helping the Indians, or are we equally obliged to help other people, no matter where they live? And how far should we go for others? How much of our wealth should we spend on helping others? Should we help other people to an acceptable minimum, or should we aim for a situation in which everybody is equally well off – or equally badly off?

Finally, there is the question of who it would be relevant to include in the ethical deliberations? To whom do I owe something – who am I responsible for? This is also a question which must be answered in this situation. Should all people be included or only some? Do I have more obligations towards people I know than those who live far away? And what about animals and plants, species and ecosystems? Am I directly ethically obliged to them, or should I only care about them to the extent that they are of any significance to people? We will return to this question in the next section.

All these deliberations are not new to ethics. They are questions on which people have been pondering for centuries, if not millennia. But climate change is lending a certain urgency to these problems and adding a new twist. That is simply the way it is. Each new era has had its challenges – and there are many signs that these are the challenges of our time. The question

of where our knowledge of ethics comes from is also relevant in this context. For if we are to discuss which strategies are right in the current situation, and if we are to discuss what objectives to lay down, then it is necessary to have an understanding of where our own basic values and those of other people stem from. Are they culturally determined, and thereby dependent on time and place, or do they stem from a universal human sensibility and are thus available to anybody who thinks about it? Have they been invented by mankind to ensure the survival of the species in an evolutionary perspective? Has some Creator incorporated them into our lives or revealed them in a book? Or are they simply part of the human condition, like death and hunger? Whether the answer is one or the other, we must know our own answers and those of others if dialogue is to lead anywhere. Otherwise we will end in a situation where we each feel that we are right and that the others either have not been listening or have not understood a thing.

One of the big questions within ethical thinking is whether the end justifies the means. Within the ethical tradition in the Western world, this is one of the questions which divide two of the most fundamental positions: *Utilitarianism* and *deontology*, often represented by the English philosopher Jeremy Bentham (1748-1832) and the German philosopher Immanuel Kant (1724-1804), respectively. According to utilitarianism there are no limits to what we can allow ourselves to do as long as the overall result leads to the highest possible quality of life. If the best results would be achieved by leaving the poorest countries to their destiny and helping those that are almost on a par with ourselves, then that is the right course to set. If, on the other hand, we get most quality of life for our money by helping the poorest people, then that is what we should do. Every action must be measured in terms of its consequences. Deontological theories, on the other hand, maintains that there are actions which, notwithstanding the fact that their combined consequences can be said to be good, are not ethically acceptable. For example, the killing of an innocent person can never be justified. The end does not always justify the means.

In the face of the challenges presented by climate change, there is no doubt that we will, time and again, find ourselves in situations where choosing what to do is not simple. Situations in which there is no clearly right or clear wrong course of action, but where the choice is between two evils. Should we protect human life or endangered animal species when the animals' habitats are disappearing and they start making their way towards our towns, as has for example been observed in the case of the polar bears in Greenland? Are there actions which can never be ethical, or can we do anything we want as long as we aim for the best consequences? Climate

change and the global scale of the ethical conflicts highlight the fact that sometimes our ‘solutions’ to various problems are highly ethically debatable.

All these questions and challenges must be addressed in the coming years. Whether we like it or not. We cannot check out of society and pretend that the choice is not ours. Not choosing is also a choice. The ethical responsibility is unavoidable. As mentioned earlier, throughout this section we will attempt to show how the above questions come up specifically in the climate change discussion. But before we get to that, we will focus in particular on one of the questions raised in this section: For whom are we responsible? Is it only people who have any ethical significance, or do other creatures also have a claim to be protected for their own sake?

3. Who and what are we responsible for?

The global consequences of climate change are unpredictable, but will undoubtedly lead to major social unrest and extensive consequences for animals, plants and ecosystems. Some plant and animal species will be threatened with extinction, and their distribution area will change materially. To what extent we should seek to prevent this depends, to a large extent, on who and what we feel has an ethical value in itself. This question has been discussed within ethics for a long time, but the discussion has become particularly intense since the 1960s with the increasing awareness of the damage inflicted on the natural world by industrialisation and intensified farming.

To gain an overview of this discussion, we first divide everything into three ethical categories: ethical agents, ethical subjects and ethical objects. Ethical agents are creatures to which we can ascribe a responsibility for their actions. One can, of course, imagine non-human intelligences (animals, aliens or artificial intelligence) which could be regarded as ethical agents, but today we know only of humans. Generally speaking, ethical agents are those who can be held legally responsible for their choices. The term agent has been chosen to emphasise that focus is on the entity acting actively (having agency, taking action) in a particular situation.

This makes it clear that not all humans belong in the group of ethical agents. To be an ethical agent (somebody who can act ethically), you must live up to certain requirements: Self-awareness; you must know that you have wishes, goals and instincts and that you can act to fulfil them or decline to do so for ethical reasons. Freedom; it must be possible to make your choices without external influence. Rationality; you must be able to assess the consequences of your actions in so far as it is possible and to choose

between alternatives based on this knowledge. Only some people meet these requirements. Children up to a certain age, people with dementia, the mentally ill, people in a coma etc. are not ethical agents.

But even though you are not an ethical agent, it does not necessarily mean that you are ethically irrelevant. The second category of creatures in the ethical landscape is the ethical subjects. Here we find all the creatures that are ethically significant in themselves without being ethical agents. Ethical agents are also ethical subjects. You are both obliged in relation to others, and other ethical agents are obliged in relation to you. However, you are not only obliged to other ethical agents. You are also obliged to the ethical subjects. The term *subject* has been chosen to emphasise that in the ethical action, the subject needing the agent's help is the focus for the action – not the agent. The task of the ethical agent is to focus on the ethical subject and to act as though he himself was the ethical subject (see the *Golden rule*: Do unto others as you would have them do unto you).

Ethical subjects can be regarded as creatures which have an ethical significance in themselves, an ethical value which means that the ethical agents are ethically responsible for them. It means something in an ethical sense whether the actions of the ethical agents harm or help the ethical subjects. Being an ethical subject is being a valid member of the ethical community. And if you belong to the ethical community, there are limits to what other people can do to you. Thus it makes a big difference whether you think that older people suffering from serious dementia and who have no relatives are members of the ethical community. If they are, they are entitled to our consideration. If not, you could ask whether, for financial reasons, we might just as well kill them.

The last category in the ethical landscape is the ethical objects. This is the residual group – everything that can neither act ethically nor put others under ethical obligations. This does not mean that ethical objects are of no interest to ethics. A knife, for example, is not an ethical agent or an ethical subject. But it can be used by ethical agents to either harm or help ethical subjects. So, indirectly, the knife is incredibly important. But on its own the knife has no ethical significance. As far as the knife is concerned, it is not wrong to destroy it. On the other hand, it may be wrong in relation to the person who owns it or the people for whom food could be cooked using the knife.

Thus, the ethical community consists of a judicious mix of ethical agents and ethical subjects. Outside this community we find the ethical objects which are only indirectly of any ethical significance. The big and very important discussion looks at who and what can be said to belong to the group of

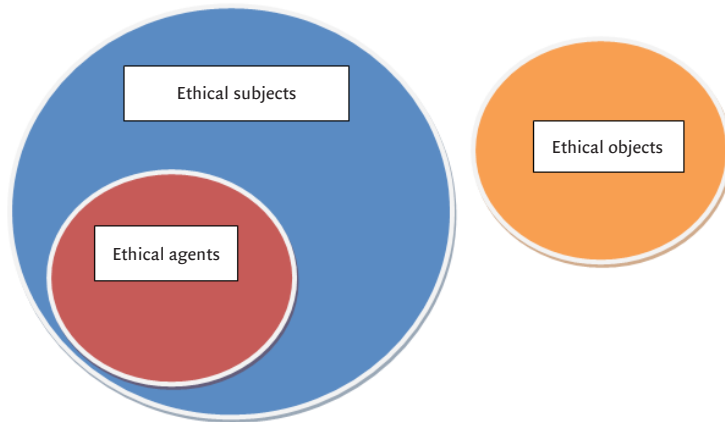


Figure 1: For whom or what are we responsible? This depends on where we place the various creatures. It is a question of being in the right circle.

ethical subjects. Because being part of this group is belonging to the ethical community and having a claim on the ethical agents' consideration.

If we return again to the discussion on climate change, it becomes clear how important it is where we draw the boundaries for who or what we regard as ethical subjects. One of the reasons why the special branch of ethics which is called environmental ethics or nature ethics has sprung up over the past 40-50 years is that a more and more pressing need has arisen for explaining our ideas about what is morally right and wrong in how we treat the natural world or the environment. Environmental ethical considerations can help us to understand the complexity of the issue. There is no single answer to this question, no one truth, but several competing environmentally ethical views which offer widely differing ideas on the limits for our use, protection and restoration of the natural world and the environment, and in particular on who is entitled to our consideration in this respect. For the sake of clarity, here too we will draw a picture of the ethical landscape. However, it is important to note that this systematisation necessarily omits many distinctions and considerations which the individual philosophical directions and philosophers use. The following should therefore be seen as an outline of possible positions rather than a detailed account. The various positions within environmental and nature ethics can be divided into four fundamental categories: *anthropocentrism*, *sentientism*, *biocentrism* and *ecocentrism*.

An attitude which is prevalent throughout much of the West and which, among other things, has been predominant within the Christian philosophy of nature, and which has largely helped to shape the Western civilisation's

view of the natural world, is anthropocentrism (from the Greek *antropos*: man). According to this view, people are the only ethical subjects. This approach does not preclude taking nature and the environment into consideration, but assumes that the consideration is indirect, i.e. all use and protection of the natural world happens out of consideration for human needs and interests. An extended version of this view is found in the UN's Brundtland Report 'Our Common Future' from 1987 in which the consideration for the needs of future generations is emphasised. In the past ten to fifteen years this approach has had a clear impact on environmental and nature management, for example in connection with energy consumption, waste policies and protecting animal and plant species. For example, in relation to this view, the growing of genetically modified crops does not in itself pose an ethical problem, but must be assessed according to the advantages and disadvantages for people.

The problem with the anthropocentric perspective is that it can be hard to explain why it is only people who are ethically significant. To assert this solely on the grounds of a biological affiliation to the species *Homo sapiens* gives little meaning outside a narrow religious understanding of human beings being specially selected by God. If we adhere to the philosophical reasoning, the question is: What quality do human beings possess which means that they – and only they – have ethical value in themselves? In the history of philosophy, many different qualities have been proposed such as reason, logical thinking, language, the ability to use tools etc. However, not all people possess these abilities.

Since the 1960s, and as more and more attention has been given to mankind's relationship with nature, increasing criticism has been levelled at the anthropocentric viewpoint. The criticism which has had the most impact has come from the sentient (meaning having the power of sense perception or sensation) perspective. This point of view is closely related to the utilitarian perspective where, as previously mentioned, you focus on the consequences of your actions. The aim is to ensure as high an overall quality of life as possible. According to utilitarianism, the criterion for being part of the ethical community is therefore only that a being is able to feel comfort or pain. If so, your experiences are contributing either positively or negatively to the combined quality of life and must therefore be taken into account. This way of thinking has, among other things, resulted in a growing focus on animal welfare in both commercial livestock production and vivisection, while, generally speaking, animal welfare is also higher on the public agenda today than at any time previously.

Not many people today will claim that the ability to feel pain is not ethi-

cally relevant. You can discuss the extent to which different creatures should be part of the ethical considerations, and you might claim that human beings basically take precedence over animals. However, few people will (or can) argue that the suffering of animals is ethically irrelevant. However, the question is whether the ability to feel pain is the only relevant factor to be considered when deciding whether something belongs to the group of ethical subjects.

Biocentric or life-centred ethical theories would have nothing to do with such an ethical distinction. All living organisms – whatever their level of consciousness – should be seen as ethical subjects and included in any ethical reflections. Anthropocentrism draws the line at capabilities which are deemed special for humans or at a purely biological affiliation with the species *Homo sapiens*. Sentientism draws the line at being capable of feeling pain. Biocentrism draws the line between what is and what isn't living.

In 1986, the American environmental ethicist Paul W. Taylor published the book *Respect for Nature. A Theory of Environmental Ethics*, in which he argues in favour of a biocentric perspective based on the idea of a *good of its own*. Everything of which you can say that actions can be good or bad for it has a *good of its own*. Taylor then made having a *good of its own* a condition for having an ethical value irrespective of everything else, which can here be understood as being an ethical subject. For Taylor, all living beings – fauna and flora – belong to the ethical community.

Other biocentric positions argue on the basis of our human experiences that the ability of humans to identify with 'the other' must be what defines the boundary for the ethical community. It is then claimed that the limit of the ability of humans to identify with another goes hand in hand with the living as, thanks to shared existential basic conditions such as vulnerability and mortality, we can perceive the surrendering of the living to us as an ethical cry for help, whereas inanimate objects such as rocks, rivers, mountains etc. do not share the basic conditions with us in the same way and thus only have indirect ethical significance (are ethical objects).

However, supporters of a holistic approach do not regard the above as being sufficiently far-reaching. Only once everything in the natural world – living or dead – and not just individual organisms are included in the considerations are the ethics perfect. Key for the so-called *deep ecologists* is to point out that current problems such as air pollution and the ruthless exploitation of the natural world require a rethinking of our role in the natural world and the environment. Humans are part of the natural world and are so closely associated with the rest of it that, ethically speaking, it makes no sense to distinguish between us and that. The limit for the individual is not

determined by the skin, but by the relationships which the individual enters into.

The Norwegian philosopher Arne Næss (1912-2009) thus talks about the difference between *the individual self* and *the ecological self*, where the latter, in the extreme sense, may be understood as the ecosphere as such. Therefore it is not only individual organisms but also magnitudes such as species and ecosystems which have direct ethical significance. The goal is as far as possible to preserve a level of diversity and genuine nature and achieve a state of harmony between the natural world and humans, where humans are part of the Earth's cycles and on an equal footing with other creatures and – in so far as is possible – avoid influencing the ecosystems.

From a philosophical point of view, we have a number of competing views of nature which range from anthropocentrism, where only people have ethical value, via sentientism and biocentrism to ecocentrism, which includes all living matter in the ethical community. Which of these you take as your viewpoint is very significant when discussing global warming. If, for example, your starting point is non-anthropocentric, you cannot only argue on the basis of a given action's possible consequences for people and their rights or welfare – the consequences of global warming for the rest of the natural world also become directly ethically relevant.

A small example can be used to illustrate the different ethical approaches in relation to climate change. Recently, Australian researchers discovered that an increased level of CO₂ in the atmosphere reduces the nutrient content in the leaves of the eucalyptus tree while also increasing the number of naturally occurring toxins. With fewer nutrients, the value of the leaves as food is reduced. This has implications for the koala bear, which is the only mammal that uses eucalyptus leaves as a source of food and water. Fewer nutrients is obviously not a problem for humans, who cultivate eucalyptus trees as a source of paper pulp, as only the wood quality and tree size are of interest. In other words you could – very simplistically – from an anthropocentric viewpoint argue that as long as the trees can be used for our benefit, this development presents no ethical problem for people now or in future, other things being equal. Here, the natural world is regarded as an instrument. The question of whether it serves our human interests or not defines whether or not there is an ethical issue.

However, it does not mean that, from an anthropocentric point of view, you can necessarily justify the consequences of global warming for eucalyptus trees and koala bears. In addition to our need for food, water and shelter, people have needs which mean that we can take an interest in or care for plants and animals. You can also talk about a broader concept of

(human) behaviour which includes animals and plants as well as *experiences* of these. With this enlarged welfare concept, it would thus become an ethical problem that the value of the eucalyptus tree as food for the koala declined as something which we humans appreciate – koala bears in Australia – would otherwise be lost. Therefore we should show consideration for the koala out of regard for other people. On the other hand, the koala, from the anthropocentric point of view, cannot expect consideration itself. From a sentient viewpoint, *certain* koala bears would be entitled to consideration, as higher animals, which are capable of feeling pain or happiness, are covered by ethical considerations. More far-reaching ethical viewpoints such as biocentrism would also be concerned about other organisms which may be harmed through the effects of changed CO₂ levels on the leaves, maintaining that they were entitled to moral considerations, like people, regardless of whether they were directly or indirectly of benefit to us. Finally, from an ecocentric perspective, you would also relate to how the changes in the nutritional values of the leaves would affect the overall ecosystem and the species within it.

4. Ethical challenges of climate change

Climate change raises a number of practical issues: Can we produce cars with lower petrol consumption? Can we build better embankments to protect against flooding? Can we develop solar cell technology? And so on. However, climate change also raises issues which cannot be answered solely from a scientific or practical point of view. It is not only about what we ought to do to check or halt climate change and its consequences, but also why. How many resources should we invest in developing vaccines for people in the third world who are threatened, for example by changed areas of distribution for a number of pathogenic insects, how should we prioritise the efforts in relation to combating and preventing disease, and are we ethically obliged to help these people?

Climate change thus raises several critical ethical issues. Another question is whether it is reasonable that, in the West, we use fossil fuel-consuming cars for transportation as well as abundant heating and power while people in other parts of the world, especially in the non-industrialised countries, have to pay the price, for example in the form of flooding which forces hundreds of thousands to leave their native areas, or extreme drought which causes harvests to fail, when millions risk dying of starvation and thirst.

We are not alone – literally. We are not and will not be the only people

inhabiting the Earth. This means that we have to address key questions such as: Who or what do we need to take into consideration? And what is a fair or proper distribution of the benefits and the burdens? As previously mentioned, our ethical perspective helps to shape our answers to these questions in light of the changed living conditions for other people, future generations, fauna and flora and the natural world as a whole.

We have described various ethical views about the natural world above and different fundamental ethical concepts and issues. In the following we will use these considerations as a basis for discussing the ethical aspects of a number of issues raised by climate change: Rising sea levels, changed habitats for animals, the implications of climate change for insects and plants and the consequences of climate change for species and ecosystems. We will do so by focusing on a number of cases which will also serve to demarcate the boundaries in the basic discussion about who and what is part of the ethical community.

Consideration for other people: Climate refugees

One consequence of climate change is rising sea levels in the world's oceans. This is the result of ice melting at the poles and the general warming of the sea water. The melting ice will mean that low-lying countries will disappear, or that it will no longer be possible to farm land which is currently used for agricultural purposes, which in turn will lead to increased competition for ever scarcer resources such as crops and water. Such changes will be seen in particular in areas with poor populations who are either unable or who cannot afford to adapt (for example through irrigation or controlling the advancing sea water).

The small Pacific atoll Carteret, which was mentioned at the start of the chapter, is a case in point. The atoll, which lies off Papua New Guinea, is one of the most densely populated areas in the world. On the Carteret Islands, which rise just above the surface of the sea, the sea level has risen 10 cm in twenty years, and it is estimated that the islands may well be completely submerged by 2015. About 1,500 people live on the atoll itself, and they are now being called the world's first climate refugees. Their fields and coconut and banana plantations are being destroyed by the salty sea water. However, it should be emphasised that there are strong indications that it is not due to climate change that the islands are being consumed by the sea. Geological activity and ordinary erosion are thought to be the worst culprits. Nonetheless, Carteret has become synonymous with the development we will see with climate change. The fact that the Carteret islanders probably cannot claim to be the world's first climate refugees does not change the

fact that Carteret is just the first of many places where low-lying areas will over the next many years be vacated by the inhabitants because of a drastic change in living conditions.

At the moment the island's population mostly lives off rice which is sent from the mainland, but it will be hard to maintain this arrangement in the long term, among other things because of a shortage of resources. A rehousing project has been launched – but this too lacks funding. The Carteret Islands are just one of many atolls which look set to become uninhabitable as a result of rising sea levels. On the neighbouring Tuvalu Islands, which have been inhabited for 2,000 years and where 12,000 people currently live, sea water bubbles up from the ground and the people look at what is happening on Carteret with concern. When the Maldives, a group of islands in the Indian Ocean, elected a new president in 2008 (Mohamed Nasheed), one of the first things which he implemented was to use a proportion of the income from the islands' extensive tourism to acquire land elsewhere in the world to which the population can relocate once the rising sea levels make the islands uninhabitable.

Generally, it is expected that the number of people who will flee as a result of climate change will rise dramatically. Some estimate as many as 200 million climate refugees in the coming decades. At the moment (2008), the Red Cross estimates the number of so-called environmental refugees to be about 25 million people worldwide. In a country such as Bangladesh, where one in four people live along the coastline, the problem is particularly pressing.

Who is responsible for these changes and what does this responsibility entail? What are we expected to do? Ethically, it is not just a question of the responsibility of present generations in relation to other people living at the moment but also about our responsibility in relation to coming generations. How these questions are answered is very significant for the solution models which will be chosen in connection with, for example, the Carteret Islands. Is it the local population living on the islands, but who are not behind the climate change, which must bear the burden and the responsibility? Is it the regional authorities who are failing to allocate sufficient resources to rehousing the people or who are not investing enough in preventive measures? Or should responsibility rather be apportioned according to guilt? Yes, is the response from a local pressure group on Carteret which points to the industrialised countries collectively as being responsible, through the burning of fossil fuels, for impacting the climate and thereby – presumably – causing the sea level to rise. In their view, the countries which are believed to have contributed most to climate change should pay most.

Finally, responsibility can be allocated according to ability, such that it is the rich countries which can afford to help others that, irrespective of the guilt issue, must lend a hand.

The question can also be seen in light of the classic conflict between utilitarianism and deontology, and one could ask whether, other things being equal, we would not get more for our money by helping others and – literally – leaving the inhabitants of the Carteret Islands and other environmental refugees to their own devices. Closer analysis would perhaps show that – again other things being equal – more quality of life can be bought by using the money to prevent climate change in other, less exposed places. Or is this an indecent and unethical approach, as deontological theories would assert? Do we have a duty to help those in need – even though it is not the most efficient thing to do?

Consideration for animals: Emperor penguins and polar bears

The emperor penguin (*Aptenodytes forsteri*), which lives on Antarctica, is the biggest of all the penguin species, and it is already badly affected by global climate change. It is estimated that the population of emperor penguins has been halved in certain areas as increasing sea temperatures have reduced the amount of food, primarily small fish and the special shrimp, krill, which is disappearing as the ice around Antarctica melts. As much as 40 per cent of the sea ice is estimated to have melted compared to 25 years ago.

The problem with increasing air and sea temperatures also poses problems on the other side of the world, in the Arctic, where polar bears need the sea ice in order to hunt seals and to get to the Arctic coastal areas where they hibernate. In Canada, the polar bear population has already fallen by 20 per cent, and according to analyses from the US Geological Survey, about two-thirds of the more than 25,000 polar bears in the Arctic areas will disappear by 2050 if the ice continues to melt at the present rate. Do we have an ethical obligation to try and save these animals, both as individuals and as species? And if we do, where does this sense of obligation stem from?

According to the anthropocentric view, climate change is only an ethical problem if it directly or indirectly impacts other people negatively – for example by causing the sea level to rise so people are either forced from their homes or are unable to farm their land. The problem is that we do not necessarily experience the harmful climate effects of a given activity (for example burning fossil fuels) at the same time that we perform the activity, but that it might take several generations before the effects become apparent. It raises the question of whether we are ethically obliged to future generations or only to those living now. This discussion has preoccupied



Emperor penguins occupy a kingdom which is melting away. Antarctica is affected by global warming, and the emperor penguin's habitat is rapidly changing. Do we have a duty to help them – and if so, why?

ethicists for a long time, but it is now thought that the discussion is being left behind by developments. Because now our actions are not just going to be affecting the lives of far-off generations but actually the lives of our children and grandchildren.

The ethical approach implied by, for example, the Brundtland Report's ideas on sustainability, is to expand the group we need to include in our ethical considerations to also comprise future generations in order to protect their interests. You can then distinguish between different degrees of interest or need. Several people draw a dividing line between *basic* (e.g. life, food, water, clothing, freedom from intense pain etc.) and *peripheral* interests (air-conditioning, theatre, expensive food etc.). One of the difficulties, of course, is that we do not agree about the interests which future generations will deem important. But if we assume that they are similar to ours, one interest might be to live in a world where emperor penguins and polar bears are found. It is then possible to argue that future generations would be entitled to live in a world with polar bears and emperor penguins. And that we are therefore indirectly ethically obliged to try and save them.

If we reject anthropocentrism and look at the sentient perspective, the indirect obligation becomes a direct obligation. If there is insufficient food as a result of climate change, we have a responsibility to step in and rectify the situation. Even if nobody now or in future takes or is going to take an interest in emperor penguins and polar bears. It is worth emphasising that this is about our obligation to individual creatures of a given species, but not the species as such. You could say that a polar bear is interested in not drowning because of the melting ice, and consequently it has a right to not being killed, but the polar bear as a species has no corresponding claim to such consideration. A species has no quality of life or needs. It is only the individual animal which counts in an ethical sense.

By enlarging the ethical community from only including humans to also including animals, countless possibilities for conflict arise between different creatures and their interests or needs. How, for example, do we balance a human being's need for heating or power (and thereby a potential contribution to CO₂ emissions) with a given penguin's need for food? And how do we weigh up whether the polar bear is suffering more than the penguin, or which of two polar bears needs attending to? If we imagine that a penguin is the last member of an endangered species, do we have a greater ethical obligation to that penguin than to the polar bear, which is one of many? And if we distinguish between the two, are we doing so out of consideration for the individual animal, the species as a whole or so that human beings can experience a world in which penguins exist?

One final ethical issue which will be mentioned here is that many people hold the view that we should refrain from interfering with the wild natural world. The natural world must be able to develop without human interference. This ideal has now been rendered impossible by the global climate change which will affect all living creatures on the planet. The question is what we should think about this. Should we let the natural world continue to unfold under the new conditions without interfering in any way apart from trying to stabilise the situation, or should we play a far more active role in working to save animals and endangered species, for example through capturing animals and keeping them in zoos, feeding wild animals etc? Again, there are no obvious answers to such questions. The answers depend on our views of the natural world and the values which we bring into the discussion.

Consideration for other living organisms: Insects and plants

Alpine Blue-sow-thistle (*Cicerbita alpina*), a tall perennial plant with distinctive blue flowers which grows in alpine meadows above the tree line, has almost disappeared from the British Isles. The plant is found in four places in Scotland where it cannot be reached by grazing animals, but probably too far apart for the individual plants to cross-fertilise. In continental Europe the plant is not endangered – yet. If the current predictions about climate change hold true, this plant will find it even harder to survive. In other words, it is not only people and higher animals that will experience changing conditions. Insects, flowers and trees risk seeing their geographical ranges being significantly limited or changed, and those which cannot adapt to the climate change will die out.

A large joint European study has looked at how 1,350 European plant species will manage under seven different climate scenarios. Even in the more moderate scenarios and taking the uncertainty of the models into account, there is the prospect of very significant changes, especially in mountain areas where up to 60 per cent of the species will become extinct before 2080. In low-lying areas, far fewer species will become extinct, but the vegetation will change due to the changing conditions which in turn will lead to a rise in the number of invasive species.

There are strong indications that increasing temperatures will result in a dramatic increase in the number of invasive species in, for example, Denmark in the coming years. Insects from the south will expand their territories and, in addition to the problems this may pose for humans in the form of new diseases (malaria etc.), this development will also threaten the insects and plants which already live in our countryside. Thus the habitats of both the Lyme disease-carrying wood tick and the horse chestnut leaf miner have spread because of increasing temperatures.

But is this something that affects us ethically? Why can we not just allow plants and insect life to change and then make do with taking the necessary precautions and measures vis-à-vis the new diseases which are coming to our part of the world? This was the answer offered by anthropocentric ethics in connection with the emperor penguins and polar bears – that they mean something to us humans, and that therefore we must try to save them or prevent them from becoming extinct. In other words, we should only concern ourselves with the changed habitats of plants and insects in so far as the changes affect us. As these are animals which are incapable of feeling pain (as far as we know) and plants, sentient ethics will give the same answer – with the postscript that it may also be necessary for the sake of higher animals.

However, the biocentric or life-centred ethical theories will have nothing

to do with such an ethical distinction. Whatever their level of consciousness, all living organisms should be taken into consideration. The philosopher Paul Taylor has been mentioned earlier as an example of a biocentric. Another example is the philosopher and doctor Albert Schweitzer (1875-1965) who, with his principle of ‘veneration for life’, helped to formulate an ethical perspective where interests are an expression of any type of need which helps to ensure survival and the ability to function, while proponents of sentient ethics define interests more narrowly as needs which, if they remain unfulfilled, are associated with pain or suffering.

You can ask whether, from a biocentric perspective, you can defend combating the malarial mosquito or HIV virus if everything living is ethically significant in itself and part of the ethical community. Only a few biocentrics (if any) draw these conclusions, but think that eradicating other forms of life should happen after assessing whether it can be regarded as part of protecting other creatures’ basic needs. The task then is to define what it actually means to *respect a plant* and when *basic needs* are at stake.

Should all species in principle have an equal right to be here? Yes, believes the Norwegian philosopher Arne Næss (1912-2009), who is most well known for his work in helping to found the branch of environmental ethics called deep ecology. (Photo: Per Løchen/Scanpix)



Consideration for the whole: Ecosystems and endangered species

For many people, the focus is not the single individual or a collection of individuals, a population, but the species itself. In May 2008, the US declared, for the first time, a species – the polar bear – threatened due to anthropogenic global warming. And for several species the writing is already on the wall. The golden frog (*Bufo perigrinus*) – a relatively unknown, small brightly shining orange frog only 5 centimetres long – lived in the tropical rainforest in the misty mountains near Monteverde, Costa Rica. In the book *In Search of the Golden Frog*, an American biologist describes how she was lucky enough to catch sight of the frog which was engaged in a mating ritual: “One of the most incredible sights I have ever seen ... they [the frogs] resembled gleaming jewels on the forest floor.” The golden frog was first described as a species only in 1966, but since 2004 the International Union for Conservation of Nature (IUCN) has considered it extinct, probably because of global warming.

From an ecocentric perspective, it makes no sense to use individual-based ethics to regulate the conditions between human beings and animals and plants. The argument is both practical and theoretical. Practically speaking, you can say that ethics which seeks to benefit or protect the individual instead of communities of individuals, such as ecosystems, at the end of the day does not benefit the individual as the individual is always dependent on the relations in which it lives. Theoretically speaking, you can argue that what is ethically valuable is not the isolated individuals but the contexts and systems which ensure the basis of life for the individuals. In slightly the same way that we intuitively feel that a person has more ethical meaning than his or her finger or arm.

There are many versions of ecocentric ethics which each argue that species, landscapes and ecosystems should be included in the ethical community. This can either happen as described above, through a naturalistic

Definition of ‘species’

Box 1

The “species” is a fundamental systematic unit within biology and for our daily understanding of the world. Nonetheless, it is not easy to provide an unambiguous definition of the notion. According to the biological species concept, a species is defined by its individuals not normally exchanging genes, i.e. being able to produce fertile offspring, with individuals of other species. However, this definition can be difficult to apply in practice, which is why a number of more genetically defined species concepts exist. Here a species is defined as a genetic relationship.

understanding of the individual's relations to and dependence on the bigger contexts, through a religious understanding of nature as being created and coherent (see the chapter by Jakob Wolf) or through the more psychologically oriented deep ecology introduced earlier in this chapter. What is most interesting in this context is that even though the ecocentric positions are often seen as extreme positions on the periphery of the nature ethics landscape, their approach to the ethical significance of also non-individual magnitudes in nature is met with a degree of sympathy by most people. This sympathy is, among other things, reflected in the broad public support for saving endangered species and threatened ecosystems.

This can be observed, in particular, when the possible consequences of climate change are discussed. When, for example, researchers say that the polar bear can adapt to new conditions by eating another type of seal or hunt land animals, it is not a specific individual being referred to but the polar bear *species*. It is also this species concept which is used in discussions about loss of biodiversity – i.e. the variation in species – such as when researchers call attention to the fact that the Mount Graham red squirrel is facing extinction. Likewise, when there is talk of climate change driving plants up the mountainsides, what is being said is that a given species of plants is adapting to its new area of distribution.

According to sentientism, species are not entitled to being considered from an ethical point of view as species are not conscious beings. For proponents of a more holistic and ecocentric approach, the ethics are only perfect once the entire natural world – living and dead – and not just individual organisms are included in the considerations. A practical point for them is that a complex mix of problems such as global warming calls for a reassessment of our role in the natural world and the environment. What is important is not individual organisms but entities such as species and ecosystems.

5. Responsibility

We are now in a situation where our behaviour is suspected of threatening our basis of existence globally. The key to understanding why we have arrived here and to developing sustainable technologies does not just lie in solid scientific and technological research and skills. Prior to and concurrently with conducting the research and developing technologies that can enable us to meet the challenges, it is necessary to clarify the values which have brought us into this situation and which lie behind the various proposals for dealing with it.

In relation to the questions about values, there are significant controversies and lures beneath the surface. If we are to reverse the current development, it is necessary to formulate these values. It must be clear which value-based considerations lie behind a given decision or practice. The solutions needed must not just be sustainable from an ecological point of view but also in a social sense. Climate change will not be solved simply through quarrelling without knowing exactly what it is we disagree about, and then relying on politicians at various levels to find the solutions. The only way is to make citizens responsible over a broad field so the solutions become joint property and the individual is prepared to follow them as part of a common project and not out of a sense of duty or hardship.

Along with the discussions about climate change, there has been a clear trend to cloud the value-based assumptions by subscribing to buzz words such as sustainability, biodiversity and nature preservation. On the face of it these words sound right, and it is hard to imagine anyone thinking that these would be a bad idea. As we have tried to show in this chapter however, such notions are not unambiguous. Agreement about the general concepts often conceals disagreement which only comes to light when you need to decide which is right in practice. In our view, the earlier in the process that these disagreements are submitted for discussion, the more qualified and democratically rooted the decisions. Of greatest importance is that all parties in the debate acknowledge that the range of attitudes is as broad as outlined here.

Even though contradictory ethical attitudes are found in our culture, it is not impossible that solutions exist which will be broadly accepted. However, a precondition is that a discussion takes place where all parties feel that their positions and interests will be taken seriously. Not everyone can get their way, but in a democracy it is important that everyone is able to speak. We can discuss who is responsible for the situation we are in, where anthropogenic global change threatens our existence. We can discuss which views of nature and which values should underpin our decisions in the coming years where together we must seek to solve one of the biggest challenges which mankind has faced. But we cannot discuss whether we, as which in this article are called ethical agents, have a responsibility to contribute to solving this situation in one way or another. We cannot avoid committing ourselves, and to acting in ways which at the end of the day reflect our ethical values. From an ethical point of view, this is the price of responsibility.

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