

DOI: <https://doi.org/10.1017/S1477175623000192>

# Ethics of Climate Change

*Helen Barnard\**

Department of Continuing Education, University of Oxford

\*Corresponding author. Email: [helenbarnard1@gmail.com](mailto:helenbarnard1@gmail.com)

**Keywords:** ethics; climate change; global warming; species

## Abstract

What should we do about climate change? This article examines the ethical problems that arise from climate change, and considers our obligations and responsibilities to one another, other species and the planet because of global warming.

What is climate change? What should we do about climate change? Should governments be solely responsible for policies or do individuals also have responsibilities? What ethical obligations does climate change raise for us towards others, internationally and intergenerationally? Do we have ethical responsibilities towards the natural world? These may be some of the questions you have been asking and most of them are ethical questions.

## What is Climate Change?

Climate change is our most serious problem today and, including many other environmental concerns, has reached crisis level. Climatologists have evidence of global warming and that the cause of it is due to human activity and not natural processes. A warming planet means that climates will change across the world. The planet has warmed many times in the past but not as fast as in the last 150 years. There is a direct link between more carbon dioxide (CO<sub>2</sub>) in the atmosphere and a warmer planet. Burning of fossil fuels (coal, oil, gas)

releases CO<sub>2</sub>, which is a greenhouse gas, into the atmosphere. Greenhouse gases have the property of absorbing solar radiation so that it does not escape into space and warms the planet. Much of our lives today rely on the burning of fossil fuels, for example for heating, lighting, manufacturing and transport. Recently new forms of energy sources are being used but not in sufficient quantities to provide all the energy needs of today. Ethical questions arise about whether we should change our lifestyles and our relationship to the natural world to deal with climate change and other environmental problems. Should we?

## What is the Problem with Climate Change?

The climate crisis causes suffering to many people across the world and to non-human animals. Many ecosystems are breaking down and there are problems of water shortage, soil depletion, ocean acidification, as well as heatwaves, droughts, wildfires and floods. These problems will increase as the planet warms and there will



be further suffering worldwide. As humans have caused the problem, the question arises whether we should feel responsible and have an obligation to correct the damage done. When we talk about responsibility and obligations, we are in the realms of ethics. Ethics is concerned with questions about what we should do. In ethics we go beyond scientific facts, and we begin to ask questions about right and wrong, good and bad. How important are these questions in our lives?

### What is Ethics?

Every human being thinks about how to live a good life – how to make the right sorts of decisions. In interacting with others, questions arise about right and wrong and good and bad. What makes our actions right or wrong? Is there a right way to live? These questions impinge on decisions about climate change. Philosophers throughout the ages have asked ethical questions and have tried to find basic ethical principles which can be a guideline in helping us to live the good life. Aristotle, an ancient Greek

philosopher, held that the ‘good life’ is the flourishing life (*eudaimonia*). Ethics for Aristotle was concerned with being a virtuous person. A virtue was a disposition between two extremes. Some modern philosophers have returned to Aristotle’s ethics and have developed a theory called virtue ethics. Virtue ethics is concerned with individual character. Each one of us should nurture certain dispositions or virtues over time. What virtues do we need for dealing with climate change?

There are two other main ethical theories that may be adaptable to the present crisis. Utilitarianism has the principle of the ‘greatest good for the greatest number’. It can also be expressed in terms of the reduction of suffering in the world or the greatest satisfaction of the greatest number of interests in the world. Within a Utilitarian ethics, an act is good or bad according to its consequences. Are the consideration of consequences important within questions about climate change? Kantian ethics is another ethical theory of today. Kant was a philosopher of the eighteenth century, and his ethical

theory can be summarized as ‘do not make yourself an exception’. When we are thinking about what we should or should not do Kant asks us to universalize our maxims, that is to reflect on whether what we plan to do we could accept that everyone would do it. Kant also emphasizes that all humans should be respected as rational, autonomous beings having inherent value (i.e. value in themselves). How can Kantian ethics be applied to the problems of climate change?

**‘There are now philosophers who concern themselves directly with the ethical problems that arise from climate change.’**

### **Tragedy of the Commons**

There are now philosophers who concern themselves directly with the ethical problems that arise from climate change. Greenhouse gases are released into the atmosphere, which is a shared resource. There is only one atmosphere for the planet so that any disturbance to it becomes a problem for people across the world as well as for future generations. Garrett Hardin, an ecologist, showed the problem of sharing resources with the analogy of the tragedy of the commons. He asks us to imagine a pasture shared by herders. Each herder individually benefits from grazing an animal, while the costs are spread over all the herders by damage to the pasture from the grazing animals. Each herder would benefit by adding another animal, but the result would be overgrazing and damage to the pasture. What should each herder do?

### **Ethical Responsibility**

The tragedy of the commons is applicable to the problem of climate change. We know that the burning of fossil fuels releases CO<sub>2</sub> into the atmosphere, which causes global warming. Europe first benefitted economically from the use of fossil fuels and other countries around the world now wish to develop their economies by using fossil fuels. But the atmosphere is a shared resource and if all the countries continue to emit CO<sub>2</sub> through the burning of fossil fuels, then the planet will continue to become warmer, and this will lead to climate change. One of the ethical problems with climate change is a problem of responsibility. Dale Jamieson shows this problem with an analogy. He says that in a normal case of wrongdoing, it is reasonably easy to find out who is the culprit. For example, if someone steals a bike then they may be traced and punished. But say one person steals the bicycle bell, later another person steals the brakes and later again another steals a wheel and so on. Eventually all the bike is gone but the responsibility for the loss of the bike cannot be pinned down to one person and as it happened over time it is difficult to know who is to blame. Climate change is like that. No one person can be blamed for what has happened as it is the result of the activities of many people and over a long time.

Stephen Gardiner has called the climate crisis a perfect moral storm. He says that there are three salient problems that converge in the climate change situation. These three ‘storms’ are within global, intergenerational and theoretical dimensions. The first two storms are the result of dispersion of cause and effects, fragmentation of agency and institutional inadequacy. Any emission of greenhouse gases is not realized solely at its source, it is not caused by a single agent and there is no world government.

Most governments across the world are still more interested in economic wealth than the environment. Individuals do not always fully understand the impact of their lifestyles. The damage to the environment is not immediately evident to one individual driving their car every day, but if a number of cars are being used daily then the combined acts of all the individuals

will result in global warming. Should you continue to drive your car daily if you know that if everyone does so there will be more global warming? The third storm, the theoretical storm, Gardiner says is our current theoretical ineptitude. Humans seem psychologically unable to deal with problems characteristic of long-term futures. We are now aware that global warming and climate change are the result of burning fossil fuels. For 200 years human existence has become more and more reliant on energy from fossil fuels. The economy of a country is linked to its use of energy. The industrial revolution of the eighteenth century created a link between fossil fuel, energy use and a capitalist economy. This economic link has escalated round the world. Economists judge the success of a nation through the GDP (Gross Domestic Product). A healthy GDP has meant that a nation's people will have a better standard of living. However, this reliance on fossil fuels has led to great damage to the environment and the natural world. We know the link now but are still reluctant to change our lifestyles to reduce our impact on the natural world, showing our inability to understand the future consequences of our actions today. What is more important: that a country has a healthy GDP or that everyone has a healthy environment? Could there be a circular economy, which has been the suggestion of the economist Kate Raworth?

### International Justice

Countries of the world need to reduce their reliance on fossil fuels, but who is most responsible for the damage? It is generally acknowledged that that the West (Europe and North America) has been historically the most responsible for much of the carbon dioxide in the atmosphere. They were the first areas of the world that went through the industrial revolution fed by energy from fossil fuels. Developing countries have claimed that it is unfair to ask them to reduce their carbon emissions because historically they are not to blame. Recently some areas of the world, like India and China, have developed rapidly and are now responsible for much of the present carbon emissions. Some poorer countries of

the world are in the areas where they will suffer the most damage from climate change and have not the means either to mitigate climate change or to adapt. Should the richer countries that gained in the past from the use of fossil fuels have an obligation to reduce their CO<sub>2</sub> emissions more and fund the poorer countries?

### Intergenerational Justice

Climate change affects people not only across space but also across time. This is the problem of intergenerational justice. The way we live today will bring about the world of tomorrow. If we continue to use fossil fuels, then the earth will continue to warm and there will be further changes in the climate. Much of the world would become uninhabitable for humans and many non-human species would not be able to survive. Already people on islands in the Pacific and in areas of Asia and Africa, as well as Europe, are suffering extremes of temperature and weather conditions which have never been known before. If we continue to burn fossil fuels, it has been predicted that there will be more areas of the Earth that will suffer extreme weather conditions, which will occur more frequently, bringing floods or drought and consequently famine. Could future people blame us for not protecting the planet from harm? Derek Parfit, an Oxford philosopher, argued that future people cannot blame us because there are no definite future people. This is called the non-identity problem (NIP). Those who will be born will be the result of our decisions and will only exist because of our choices now. But this conclusion rests on person-affecting morality and Parfit goes on to argue that we could use an impersonal principle of beneficence so that we should not make a choice that would produce a world worse than another choice. Contrary to Parfit's argument we may feel that we cannot abandon consideration of the way in which our actions are likely to affect future individuals. These future people are now more likely to be our children and grandchildren. Future people can blame us if we make a bad choice, because we made that choice actively by not changing our behaviour. A Kantian argument would be that we should

respect all people, whether in the present or the future. What obligations have we towards future people?

## ‘Countries of the world need to reduce their reliance on fossil fuels, but who is most responsible for the damage?’

### Present Solutions and Renewable Sources of Energy

In recent years new organizations and institutions have been established to deal with climate change. The United Nations Framework of the Convention on Climate Change (UNFCCC) has been set up and it has an annual COP (Convention of the Parties) meeting where leaders of many countries in the world discuss goals for reducing carbon dioxide emissions and have come to some agreements. There have also been discussions about which countries should take on the financial burden of mitigation and adaptation for climate change. The wealthier countries have agreed to give a certain amount of aid to the developing countries, but the goals have not always been met and there is no international organization that can enforce the policies that have been made. A system of carbon offsetting with carbon credits to reward countries for cutting emissions has been introduced but it is questionable if carbon offsetting is successful as a means of reducing emissions. It can result in what is called ‘greenwashing’.

Inventors and entrepreneurs have turned their attention to developing new ‘green’ or renewable technology. Often the new technology is presented as solving the problem, but we need to examine these claims carefully and see whether the new technology is entirely ethical, or we may make the mistake of continuing to

live extravagantly and cause further warming. The most popular of the renewable energy sources are solar energy and wind farms. These are much cleaner sources of energy than fossil fuels and already widely used. But they may only be cleaner in use and should be used sparingly. The material and manufacturing processes used to create solar panels have a large carbon footprint as they involve mining, melting and cooling and the energy used usually comes from coal. Solar cells are made of silicon semiconductors and glass as well as metals like silver, copper, indium and tellurium and lithium. The process of mining those metals creates greenhouse gas emissions and can lead to soil, water and air pollution. Some types of solar panels use extremely toxic materials and there can be a problem of leakage. Further, transportation of the parts for manufacture and the shipment of the finished product causes more environmental damage. Solar farms are being set up now and they can be massive and take up land better used for agriculture or wildlife. A better choice would be to place solar panels on roof tops.

Wind farms disturb wildlife wherever they are placed. Birds and bats can be killed in large numbers if the turbines are poorly placed. Recent research has shown that the death of birds of prey caused by wind turbines has an indirect effect on the rest of the ecosystem because the prey, for example lizards, can multiply by not being preyed on. Offshore wind farms cause damage to sea life. The manufacturing of the turbines emits a great deal of CO<sub>2</sub> so there needs to be a limit on the number of wind farms in any area. Our need for energy will always damage the environment to some extent as there is no such thing as clean energy. How much damage do we tolerate? Can we continue to use excessive amounts of energy from various sources, or do we need to cut down our consumption of energy so that we reduce the damage to the environment?

Battery cars, or electric cars, are said to be an improvement on internal combustion cars. But battery cars cause more damage to the environment than petrol cars both in the manufacturing process and in the use of batteries. Batteries need to be recharged, so the use

of electric cars will not cut down carbon emissions until all energy is produced by renewables. The use of public transport rather than individual vehicles might reduce damage to the environment.

Other sources of energy being explored are the use of hydrogen and nuclear fusion, but these are in the early stages of development. Fusion power is not a possibility for at least another ten years, by which time much more damage may be done to the planet. Can we rely on technology alone to solve environmental problems?

## Geoengineering

Geoengineering is the large-scale intervention in the Earth's climate system to reduce or reverse climate change of the atmosphere. The most prominent form of climate engineering is solar geoengineering or solar radiation management. Solar geoengineering involves reflecting sunlight (solar radiation) back to space. There are many different types of solar geoengineering and most of them would involve a considerable interference with the Earth's natural processes. It raises ethical questions of whether we should interfere at such a high level and what would be the implications in the geopolitical sphere. Could political groups utilize the systems to dominate other political groups? Carbon dioxide removal (CDR) deliberately reduces the amount of CO<sub>2</sub> in the atmosphere either by capturing at source or by direct air capture. CDR is already being used at some manufacturing plants. Carbon capture and storage (CCS) is the technology most favoured although it is still expensive, and the amount captured this way will not be enough to solve the problem of global warming. It would be dangerous to rely on carbon capture. The captured carbon needs to be buried in geological formations, but this can cause seismic disturbances and there are not enough areas in the world for sufficient carbon to be buried. Carbon storage has been used instead to further oil and gas extraction. Should we rely on geoengineering and carbon capture when they both have uncertain consequences?

## What Should We Do?

Climatologists first recommended mitigation, the reduction of CO<sub>2</sub> emissions. However, around the world there have not been enough changes and the need for adaptation to a warming climate is now also being considered. Should we leave the decisions to governments and experts? What can we do as individuals?

First, we need to ask ourselves: how have we come to be in this difficult situation? In the past humans thought of the Earth as an endless resource. From the beginning of scientific and technological development it was believed that progress was through domination over the Earth and all other species for our own comfort. We have been anthropocentric, human centred. Some environmental philosophers suggest that we should move to a non-anthropocentric attitude, although it has been argued that it is not entirely possible. But we may need to rethink our values. Since the industrial revolution we have as a species chased economic growth and material wealth. The love of economic growth has led to vast deforestation and high pollution of land, sea and air. The removal of trees, which capture CO<sub>2</sub>, from large originally forested areas has contributed to the build-up of CO<sub>2</sub> in the atmosphere. Much of our life today in the developed world is at the expense of the natural world. High levels of consumption cause damage to the Earth. How can we cut down on consumption? Do we need a new ethics, an environmental ethics? Deforestation, agricultural industrialization and high levels of pollution from mining and manufacturing have led to the demise of many species of animals and a reduction in biodiversity. What ethical values should we have?

Animal ethics is a growing discipline. Philosophers argue that we need to have respect for other species on the planet. We need a planet rich in biodiversity, so we need to begin to value other species. They all have a role to play in a healthy planet. Arguments given by philosophers support the view that non-humans have an ethical status and that they should be respected. Peter Singer, a Utilitarian, has argued that we should decrease the amount of suffering in the world and that means we should be reducing

the suffering of non-humans as well as all humans. Tom Regan offered a rights argument for non-humans. He argued that non-humans have inherent value equal to humans and should be treated with respect and not be used as mere resources for others. These philosophers led the way for many of the animal rights movement as well as encouraging a vegetarian diet. Reducing our consumption of meat not only reduces the amount of suffering in the world of non-humans but also has a positive outcome for the environment. Cutting down forests to create cattle ranches has increased global warming. The rearing of cattle and other livestock is damaging to the environment and takes up valuable agricultural space that could be used for growing vegetables and legumes. Studies in biology and ethology have shown that non-humans share many of the same characteristics as humans. They are sentient and intelligent and have worthwhile lives of their own. They cannot be seen any longer as a mere resource for human satisfaction. Should we become more concerned with the lives of other species?

### Valuing the Natural World

Some philosophers have argued that we need to change our values from solely economic ones to those that can encompass the care of the Earth and all natural processes so that climate change will no longer be a problem. I have mentioned how the Earth was first considered only as a resource for human needs, but with the industrial revolution and increased population the Earth has become damaged. In the past fossil fuels and other materials were mined from the Earth with little thought of the damage being done. Now the level of consumption is such that mining, manufacturing and agricultural practices are at extremely damaging levels for the health of the Earth. Climate change is only one of many environmental problems but is one of the most serious as it intensifies the other problems.

Environmental philosophers have argued that we need to value the natural world for itself and not just as a resource. Paul Taylor has argued that we should have an attitude of respect for all nature, and others, such as the Norwegian

philosopher Arne Naess, have argued that our respect should extend to rivers, mountains and the oceans, 'the living Earth'. Contemporary philosophers are looking at the beliefs and practices of indigenous nations, who are now beginning to have a say. In some countries rights have been given to natural phenomena such as rivers, like the Whanganui River in New Zealand. Indigenous peoples of the world have been able to live with nature in a balanced way with limited damage for centuries. Should the natural world be valued for other than economic reasons? Do you think that we need to return to a simpler form of life which is based on far less consumption?

### Individual Duties

It might be easy to think that as an individual you can do little to help. Philosophers discuss the Voting Paradox. Your one vote in an election will have little effect on who is chosen, but if everyone considers their vote as useless and does not vote then that would have a big impact. So it is for climate change. An individual's decision to drive their car may not have much effect on global warming, but if everyone drives their car there will be a negative impact. So, what can we do as individuals? These have been the suggestions of those concerned about the situation. As individuals we can be aware of the problem, and read articles and books on the subject so that we are well informed. We need to be aware of 'greenwashing' and where claims are made about new technology which are not entirely true. The consumption of meat across the world is too high, so it would help if we all reduce the amount of meat we eat. The bonus is that a vegetarian diet has been proved to be healthier and there will be less suffering for non-humans. We can grow trees, or preferably not cut any down. Older trees absorb more carbon dioxide than young trees, so protecting woods and trees in our own neighbourhood would be the best policy. We can let our gardens go a bit wild: the more vegetation the better for reducing carbon dioxide in the atmosphere. But most important of all is to reduce our consumption both of energy and of material goods. Every

**Helen Barnard**

day we can make choices that can lead to a better world and a healthier environment. As individuals we may seem to have little effect on the problem, but there are many of us. If we are all concerned and cooperate, the effect will be huge.

## **Further Reading**

Michael Boylan (ed.) *Environmental Ethics* 3rd edn (Hoboken: Wiley-Blackwell).  
Stephen M. Gardiner et al. (eds.) *Climate Ethics: Essential Readings* (Oxford: Oxford University Press).

## **Helen Barnard**

Helen Barnard is an associate lecturer of the Open University and a tutor at the Department of Continuing Education, Oxford University, specializing in applied ethics. She has a doctorate in environmental philosophy.

**Cite this article:** Barnard H (2023). Ethics of Climate Change. *Think* **22**, 25–32. <https://doi.org/10.1017/S1477175623000192>

© The Author(s), 2023. Published by Cambridge University Press on behalf of The Royal Institute of Philosophy. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.