Master Thesis

Emissions for Sale:
The Ethics of Emissions Trading

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International regulations target a global reduction of carbon dioxide (CO2) emissions through the allocation of national reduction targets and the definition of mechanisms to achieve these targets. One of these mechanisms is international emissions trading, these trading programs have been the targets of widespread criticism since they were introduced into the policy-making arena. The point of departure in this study has been that the trading raises questions about morality, since it implies signals, which legitimates pollution.

The main purpose with this study has been to find out if emissions trading systems can be morally justified with the method of wide reflective equilibrium. From the study it was found that the moral intuition; it is wrong to pollute the environment, and perform activities, which legitimates pollution, finds support from the different theories within environmental ethics and Kantian ethics. But, it was also found that there are a number of background theories, such as neo-classical economic thinking, liberalism, and utilitarianism, that supports the notion of emissions trading. The paper argues that even though the concept of CO2-emissions trading raises moral questions it can be morally defended on the basis of rationality. When the theory about specification is applied to the concept of emissions trading it is possible to reach a situation were a wide reflective equilibrium is achieved.
# Trading the Earth: The Ethics of Emissions Trading

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Abstract

International regulations target a global reduction of carbon dioxide (CO₂) emissions through the allocation of national reduction targets and the definition of mechanisms to achieve these targets. One of these mechanisms is international emissions trading, these trading programs have been the targets of widespread criticism since they were introduced into the policy-making arena. The point of departure in this study has been that the trading raises questions about morality, since it implies signals, which legitimate pollution. The main purpose with this study has been to find out if emissions trading systems can be morally justified with the method of wide reflective equilibrium.

From the study it was found that the moral intuition; it is wrong to pollute the environment, and perform activities, which legitimate pollution, finds support from the different theories within environmental ethics and Kantian ethics. But, it was also found that there are a number of background theories, such as neo-classical economic thinking, liberalism, and utilitarianism, that supports the notion of emissions trading. The paper argues that even though the concept of CO₂-emissions trading raises moral questions it can be morally defended on the basis of rationality. When the theory about specification is applied to the concept of emissions trading it is possible to reach a situation were a wide reflective equilibrium is achieved.
Chapter One

Introduction

1.1 Background

Scientists from all over the world are recognising that the earth is turning into a warmer state than ever before. The lion’s share of these scientists are worried that increasing temperature is closely related to our use of fossil fuel, and the emissions of anthropogenic greenhouse gases (GHG), especially carbon dioxide (CO₂). In the most recent report, from the Intergovernmental Panel on Climate Change, it is stated that mankind plays an important role for the climate on planet earth.¹ The worries from the science community have paid off, and international regulations target a global reduction of CO₂ emissions through the allocation of national reduction targets and the definition of flexible mechanisms to achieve these targets. The European Union (EU) countries for instance have voiced the strong support for early ratification of the Kyoto Protocol.² Trading of emission rights for CO₂ is a new tool to achieve reduction targets and sustainable development. Article 17 of the Kyoto Protocol allows so-called Annex B parties to meet their commitments under the Protocol by greenhouse gas emissions trading as long as such trading is supplemental to domestic emissions control.³

At the end of 2002, a little over a year after the European Commission presented its proposal for an EU greenhouse gas emissions trading system, the Council unanimously reached political agreement on a common position on the Commissions proposal.⁴ The trading will start in 2005, and the system is going to be the first trans-national emissions trading scheme in the world covering potentially up to 30 countries. The idea that gives leverage to emissions trading is that it is more cost-efficient than other non-market based environmental policies,⁵ countries and companies which have the potential to reduce their emissions the most cost-efficient are to make the largest reductions. Others gain flexibility because they can buy

³ The Annex B states are the northern industrialised countries of the OECD as well as central and eastern European countries and some states of the Soviet Union (See Appendix 1).
additional allowances if on-site reductions turn out to be too costly. The improvements for the environment are foremost that emissions can be regulated, in order not to exceed the fixed targets, to the total amount of emissions allowances that has been handed out to the participants in the system.6

The growth of environmental consciousness during the recent decades has led to new ethical challenges. The developments of new tools, such as emissions trading systems, have given new actuality to the traditional problems of environmental preservation and values. The Bruntland Report (WCED) *Our Common future* acknowledged the urge for ethical and moral reflections when to deal with all environmental problems. “The challenge is to ensure that these new values are more adequately reflected in the principles and operations of political and economic structures”.7 And at the opening of *World conference on the changing atmosphere* in 1988, Gro Harlem Brundtland, at the time the Norwegian prime minister and Chairman of WCED, stated that there is a great demand for “a new holistic ethic in which economic growth and environmental protection go hand-in-hand around the world”.8

Emissions trading programs have been the targets of widespread criticism since they were introduced into the policy-making arena. Arguments have been made about ethics, environmental justice, property rights, cost, and geographic and temporal distortions. Some people believe buying the right to pollute the environment in the free market is simply unethical because it is meant as a resource for the public to share.

In this study the method of wide reflective equilibrium has been used. The method was first outlined by John Rawls and further developed by Norman Daniels.9 According to this method a moral decision is justified when it is in equilibrium, therefore one should strive at achieving coherence between intuitions, ethical principles and relevant background theories. The point of departure in this paper is that international emissions trading systems can be morally questionable, since the trading with emissions imply signals, which legitimates pollution. And this is contradictory to the moral intuition it is wrong to pollute the environment, which finds support from the different theories behind environmental ethics and from deontological theory.10 Immanuel Kant, father of the deontological theory, noted that “human nature is such that it cannot be indifferent even to the most remote epoch which may

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9 See chapter 2.
10 See chapter 5.
eventually affect our species, so long as this epoch can be expected with certainty”. The actions of the now living people – pollution of the environment – may be less destructive for the ecosystems in present time, but catastrophic if continued for generation after generation. Since such cumulative exploitation cannot be accepted as a universal maxim, it seems that Kantian ethics imply a duty to avoid such actions that brings, or legitimise pollution. Thus, it is possible to say that the moral intuition recognises the principle *it is wrong to pollute the environment and perform activities, which legitimates pollution.*

This study seeks to investigate if the controversial emissions trading system can find support in the two other “components” of the wide reflective equilibrium: ethical principles and relevant background theories. It is also important to investigate if the ideas behind emissions trading are being permeated with the beliefs expressed in the UN documents concerning sustainable development. Understanding these issues is critical to predicting or identifying future opportunities and obstacles to environmental action all over the world.

**1.2 Purposes and demarcations**

The main purpose with this study is to find out if emissions trading systems can be morally justified with the method of wide reflective equilibrium. Thus, the ethical assumptions upon which the concept of emissions trading systems rests have to be exposed. The other main purposes with this study are to scrutinise if emissions trading can be justified by the positions held by environmental ethicists, and to discuss what trading systems may lead to in terms of environmental policy-making. In order to investigate this, the following questions are being put:

1) Is it possible to determine the underlying moral theory on which the idea of emissions trading rests? And what kinds of morals are implied by international emission trading systems?

2) Does the UN documents concerning sustainable development contain any moral judgements and moral principles that support the idea of emissions trading systems?

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11 The quotation can be found in Alder, J. and Wilkinson (1999) *Environmental Law and Ethics.* P. 130.

12 It should be noticed that these questions are not separately addressed, instead they are answered throughout the totality of the paper.
The evidence of how well tradable pollution rights have worked in practice is mixed and past experiences have shown that gains are far from guaranteed. \(^{13}\) It should be noted that the intention here is not to examine whether or not emissions trading lead to substantial environmental gains, or to analyse the practical problems that surrounds a trading system. Those who want a more detailed analysis concerning these issues can read the work of Tietenberg, who is a key reference on the design of emissions trading systems,\(^{14}\) or Stavins, who summarises current experience with the use of emissions trading and other economic instruments.\(^{15}\)

1.3 Material

The methodological framework, reflective equilibrium, is primarily based on the writings from John Rawls and Norman Daniels, but their writings has been supplemented with the works of e.g. Wibren Van Der Burg, Folke Tersman, Avner de-Shalit, and Anders Melin. The theoretical part, dealing with the different positions within the notion of environmental ethics is based on authors such as e.g. Paul Taylor, Mikael Stenmark, John Passmore, Joseph Des Jardins, and Aldo Leopold.

The empirical material that has been analysed, to find the theoretical foundation upon which the concept of “sustainable development” rests are *The Brundtland Report*,\(^{16}\) *Rio Declaration on Environment and Development*,\(^{17}\) and *Agenda 21* (which is a manifesto for local and global sustainable development).\(^{18}\) Other public material that have been analysed are political or legal documents produced by the United Nations (UN) and the European Union (EU); *the Kyoto Protocol*, and the *EU Directive for greenhouse gas emissions trading within the European Community 96/61/EG*. To obtain the greatest amount of validity as ever possible, the analysis also includes results from different scientific articles concerning the issues of sustainability, emissions trading, and morality.

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13 For an example see: Sorrell, S. & Skea, J. (1999), the part about Fox River.
1.4 Disposition

The paper has the following disposition: In Chapter two the methodological framework of the study is presented. Most of the presentation in this section centres around the ideas of reflective equilibrium and especially wide reflective equilibrium. Chapter three deals with the concept of emissions trading, the ideas behind it, and its institutional framework. In chapter four some of the ethical problems concerning emissions trading are elaborated. The main focus is put on environmental justice, how pollution becomes legitimate, and how money becomes a factor. The objective with chapter five is to show how the initial moral intuition finds support from some of the different theories within environmental ethics. In chapter six the ethical assumptions that underlie the concept of emissions trading are analysed. In the last and concluding part, chapter seven, the author elaborates whether it is possible or not to defend emissions trading system on the basis morality.
Chapter Two

Method

In this chapter, the method used in the study is explained. Most of the presentation centres around the idea of reflective equilibrium and especially wide reflective equilibrium. This is done by relating to some of the main trends in the past and present about the idea. The different sections are entitled “Reflective Equilibrium”, “Wide reflective equilibrium”, “The criticism against the method”, and finally the reasons for using the method is presented in “Why choose the method of wide reflective equilibrium?”.

2.1 Reflective Equilibrium

The concept of reflective equilibrium was introduced by the American philosopher John Rawls in his book *A Theory of Justice* and the method is one of the most used methods within applied ethics and moral theory.\(^{19}\) Some of the reasons for its popularity are; first, it appeals to how humans intuitively think and argue when it comes to practical moral problems. Second, with reflective equilibrium people can abolish existence of eternal or absolute foundations of morality. The third reason is the increasing dynamics of the world were “the rapid changes in our society confront us all the time with new problems, which were never thought of when foundationalist theories were developed, and for which they do not give adequate solution”.\(^{20}\) The point of departure for the method is the “considered moral judgement” that an individual or a collective holds, i.e. a moral judgement based on well-grounded data and undistorted by bias and self-interest.\(^{21}\) If a particular considered moral judgement is coherent with the rest of the individual’s or collective’s considered moral judgements and with ethical principles it can

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\(^{21}\) Some writers use the word “intuition” instead of “considered moral judgement”. In philosophical parlance, the word “intuition” does not have one unvarying meaning. In this paper the expression is seen as a synonymous with considered moral judgement, and both of them are used.
be regarded as justified.22 The aim with the method is to produce coherence, and coherence is achieved through a process where different relevant ethical principles are introduced and where the conflicts between the different moral judgements and between the moral judgements and the ethical principles are bent on until a “reflective equilibrium” is achieved. Rawls states:

“By going back and forth, sometimes altering the conditions of the contractual circumstances, at others withdrawing our judgements and conforming them to principles, I assume that eventually we shall find a description of the initial situation that both expresses reasonable conditions and yields principles which match our considered judgements duly pruned and adjusted. This state of affairs I refer to as reflective equilibrium. It is an equilibrium because at last our principles and judgements coincide; and it is reflective since we know to what principles our judgements conform and the premises of their derivations”.23

To reach this equilibrium is not an easy task, it is a complex process of mutual adjustments between considered moral judgements, principles, and ethical theories. Were both the moral judgements and the principles can be examined and revised during the process. When finally equilibrium has been reached, it is not necessarily stable, because further examination of the conditions may lead to changes.24

2.2 Wide Reflective Equilibrium

Norman Daniels has further elaborated Rawls’ method of reflective equilibrium into what he calls the “method of wide reflective equilibrium”. Daniels introduces a distinction between “narrow” and “wide” reflective equilibrium, which he states to have found in Rawls’ own writings.25 The narrow equilibrium is achieved by settling for the set of principles that best fits the considered judgements, and by resolving possible conflicts by revising or modifying either judgements or principles or both. Daniels claims that it is not enough to take account only of moral judgement and ethical principles in the equilibrium process, but also “relevant background theories” must be taken into consideration. As Daniels puts it, seeking wide reflective equilibrium “is an attempt to produce coherence in an ordered triple of sets of beliefs held by a particular person, namely, (a) a set of considered moral judgements, (b) a set

23 Ibid. P. 18.
24 Ibid. P. 18.
of moral principles, and (c) a set of relevant background theories”.26 The background theories can be both ethical and non-ethical beliefs, e.g. theories about society or theories about persons. From these background theories the investigator then advance philosophical arguments with the intention of bringing out the strengths and weaknesses of alternative sets of ethical principles.27 The principles standing out as best after this scrutiny are tested against the moral judgements. Daniels means that:

“The background theories in (c) should show that the moral principles in (b) are more acceptable then alternative principles on grounds to some degree independent of (b)’s match with relevant considered moral judgements in (a).”28

In case of a conflict, there is a strong case towards revising the judgements. Again, the investigator is to go back and forth, sometimes adjusting the judgements, and sometimes the principles and background theories, until coherence is achieved, i.e. until equilibrium is reached. The criticism, mentioned in section 2.3, against the Rawlsian equilibrium is according to Daniels, not really valid when it comes to the wide reflective equilibrium since the method does not presuppose moral intuitionism. He holds his own position, and argues that it does not grant the considered moral judgements any epistemological priority. Nor does it only arrange a predetermined set of moral judgements. Daniels contends that it allows for extensive revisions of the moral judgements. When confronting the moral judgements with relevant background theories the investigator will find the incoherent ones, and will then be able to revise them.29

2.3 The criticism against the method

The notion of reflective equilibrium has evoked some criticism.30 The matter that foremost unifies the critics is that they object to the reliance in Rawls’ method on persons initially held considered moral judgements. This reliance qualifies Rawls, in the critics’ eyes, for being a “subjectivist” and an “intuitionist”. According to R. M. Hare, Rawls tailors his theory to lead

26 Daniels, N. Wide reflective Equilibrium and Theory Acceptance in Ethics. in Journal of Philosophy. 76 (1979) P. 258.
28 Ibid. P. 22.
30 Important critics are Richard Brandt, R.M. Hare, David Lyons, and Peter Singer.
to the conclusions he wants to obtain. Peter Singer means that revisions among persons’ initially held considered moral judgements are unlikely, since “we start from a position in which we are trying to produce a theory that will match our moral judgements”. He argues:

“It follows from his [Rawls’] views that the validity of a moral theory will vary according to whose considered moral judgements the theory is tested against. There is no sense in which we can speak of a theory being objectively valid, no matter considered judgements people hold”.

Avner de-Shalit claims that the Rawlsian equilibrium is much limited because it is purely a “professional process, in which, not only do other people and their opinions not count, but, moreover, the more detached the process is, the more likely it is to succeed”. By this, he means that the philosopher can “sit in an armchair and reflect”, the criterion for his success is if he can offer a consistent and coherent theory, which mirror the philosopher’s declared intuitions. The issue is not to convince the reader that a theory fits the reader’s intuition, but rather to assure the reader that the philosopher has managed to write a very accurate theory, in which the principles of morality offered live in harmony with philosophical intuitions, which in themselves are reasonable.

There are also some problems regarding the notion of wide reflective equilibrium. The philosopher Folke Tersman illuminates, maybe the most problem-ridden, when he states “Daniels is not entirely clear as to the nature of the background theories, or the nature of their support of moral principles”. In the famous book Justice and Justification. Reflective Equilibrium in Theory and Practice, Daniels only gives some vague qualifications that these theories must have. They must be “more than reformulation of the same set of considered moral judgement involved” and they should “have a scope reaching beyond the range of the considered moral judgement” and finally the theories should also be relevant to the arguments we are using. Daniels own examples of relevant theories are “theory of the person, a theory of procedural justice, general social theory, and the role of morality in society”. Consequently, if two persons choose to apply different background theories, they may end up

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33 Ibid. P. 494.
36 Both the quotations can be found in Daniels, N. (1996) P. 23.
37 Ibid. P. 23.
with completely different equilibria even though they had the same moral judgements to start with.

Melin mentions two other kinds of difficulties concerning the method of wide reflective equilibrium. Firstly, “Daniels does not present any criteria for which kind of element we should correct if certain elements in the equilibrium model are incoherent with each other”.38 By this criticism Melin means that the lack of guideline criteria for making adjustments contributes, in many cases, to that the reasons for altering one of the elements will be equally strong as the reasons for changing another element. Consequently, two persons with the same initial moral judgements will reach different equilibria if they choose to make different adjustments. Secondly, Melin mentions that it is “problematic to assume that reflective equilibrium can lead to ethical justification in a more universal sense”.39 The fact that one individual has reached an equilibrium containing a moral judgement does not make it a convincing case why another individual ought to hold the same moral judgement. Another quite common objection raised against the wide reflective equilibrium is that there is noting to gain in trying to reach a coherent system between principles, judgement and background theories. Peter Horwich states:

“Consider a total system of beliefs, each element of which may be justified in terms of other components […] now it seems perfectly possible for such a system – let us call it a ‘coherent’ system – to be entirely false. Indeed there appears to be no reason to think that ‘coherence’ provides even an indication of truth”.40

The quotation above gives expression to what is know as “the truth objection” or “the no-credibility objection”.41 According to this notion there is no guarantee that the outcome from the equilibrium process is true or valid, even in a reflective equilibrium were there is coherence between our principles, judgements, and theories there can be incorrectness.

2.4 Why choose the method of wide reflective equilibrium?

In spite of the serious criticism, presented in section 2.3 there are a great number of renowned writers who believe that the method is applicable when it comes to morality. The

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reason for using the method in this paper is that it is a good method for analysing the relationship between particular moral judgements, ethical principles and ethical theories. It is also widely accepted that moral exploration involves a process of reflective equilibrium, and the method has been shown useful when studying concrete moral problems within different areas.\textsuperscript{42} Other arguments for favouring the wide reflective equilibrium, in studies of environmental policies, are given by Avner de-Shalit in his \textit{The Environment Between Theory Practice}.\textsuperscript{43} He means that the method is not relativist, it is radical enough for dealing with environmental policies, and it is practice-oriented and at the same time it is not intolerant.\textsuperscript{44} It is not relativist because it relates to all arguments raised and takes them as being of equal moral worth. By using this method the way de-Shalit wants it to be used, the investigator tries to step outside the academic community to include the discourse within society in large. By doing this, de-Shalit means that we “can arrive at real, universal, common principles that guide, and should guide, our environmental policies”.\textsuperscript{45} Consequently, the universal principle, for which it aim at, is not an abstract derivation from an exercise in moral reasoning. It derives from a critical analysis of factual phenomena occurring in real life. According to de-Shalit, the wide reflective equilibrium is more radical than the “narrow” because it regards public deliberation prior to the philosopher’s or policy-maker’s input.\textsuperscript{46} By this he means that it includes the positions of those previously excluded from the discourse of environmental policy-making. Finally, wide reflective equilibrium is practice-oriented because it “should include not only weighing intuitions or theories, but also examining the practicality of the theory as well, because it is meant to be applied”.\textsuperscript{47}

The argumentation, made above, clearly speaks in favour of using the wide reflective equilibrium as a method in a study of a questioned mechanism such as emissions trading, were it is important that all arguments are taken as being of equal moral worth. Climate change is a global problem that needs a global response. Thus, it is important that the policies aiming to reduce the green house gases can be justifiable within societies all over the world, and that public deliberations is involved in the policy-making process.

\textsuperscript{42} See e.g. Melin, A. (2001) P. 28.
\textsuperscript{43} It should be noticed that when de-Shalit talks about wide reflective equilibrium he calls it “public reflective equilibrium”.
\textsuperscript{44} de-Shalit, A. (2000) Pp. 31-36.
\textsuperscript{45} Ibid. P. 32.
\textsuperscript{46} Ibid. P. 32.
\textsuperscript{47} Ibid. P. 33.
Chapter three

Emissions Trading

This chapter aims to give an introduction to, and an insight into the issue of CO₂-emissions trading. The chapter is divided into four different parts, entitled “The Kyoto Protocol – background”, “The ideas behind emissions trading”, “Emissions trading within the Kyoto Protocol”, and finally “Emissions trading within the European Union.

3.1 The Kyoto Protocol – background

The countries of the world took the first important step in response to the problem of climate change in 1992, when they agreed to the United Nations Framework Convention on Climate Change. The ultimate objective with the Convention is to achieve:

“stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”.

Since 1992, negotiators have refined the institutions for implementing these goals and in December 1997, more than 160 nations met in Kyoto, Japan, to negotiate binding limitations on greenhouse gases for the developed nations (Annex B), pursuant to the objectives of the Framework Convention on Climate Change of 1992. The outcome of the meeting was the Kyoto Protocol, in which the developed nations agreed to limit their greenhouse gas emissions to an overall reduction in the commitment period from 2008-2012 of at least 5%, relative to the levels emitted in 1990. The adoption of the Kyoto Protocol has been viewed

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as a significant achievement in the endeavour to tackle the problem of global climate change at the dawn of the 21st century. At this date, the 16th of April 2003, slightly more than 100 countries have ratified. But it has to be noticed that the Protocol will not come into force until the ninetieth day after at least 55 countries, incorporating Annex B parties that cover 55% of the 1990 emissions from that group, have ratified it. Each of the participating developed countries must decide how to meet its respective reduction goal during a five-year period (2008-2012), but specific ground rules remains still to be worked out at future negotiating sessions. During the negotiations the developing countries successfully argued that the developed countries are the cause to global warming and that the rest of the world has a basic right to try and reach the same levels of economic prosperity. Therefore no emissions reduction requirements have been placed on the developing countries, including the wealthier societies of the Middle East and Southeast Asia.

At the Kyoto meeting the countries agreed to reduce emissions of six greenhouse gases: Carbon dioxide (CO₂), Methane (CH₄), and Nitrous Oxide (N₂O), and of 1995 for Hydrofluorocarbons (HFCs), Perfluoro-carbons (PFCs), and Sulfur Hexafluoride (SF₆).⁵⁰ These gases are combined in a basket using global warming potentials developed by the IPCC to compare gases in terms of their carbon equivalent. The emissions targets are differentiated substantially across countries with some required to make deep cuts in emissions relative to 1990, while others are allowed to considerable growth. For example, Luxembourg agreed to a 28% reduction, while Portugal was allowed to an increase up to 27%.

The Kyoto Protocol allows the use of co-operative efforts to achieve GHG emission reductions. This decision enables Annex B Parties to undertake voluntary greenhouse mitigation projects jointly with other Annex B Parties or non-Annex B Parties (developing countries). These projects must produce greenhouse gas benefits that would not occur in the absence of the projects. The ideas of co-operative efforts have evolved into three mechanisms, often referred to as flexibility mechanisms:⁵¹ Joint Implementation (JI), the Clean Development Mechanism (CDM), and the focus of this study, International Emissions Trading (IET). Below follow a brief introduction to the mechanisms:

- **Joint Implementation** (Art 6) is based on classic economic theory: measures to limit GHG emissions should be taken where they are cheapest or even profitable. Any

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⁵⁰ See Appendix 1 of UN (1997).
Annex B country “may transfer to, or acquire from, any other such Party emission reduction units [ERUs]” resulting from projects for the purpose of meeting its quantified targets. Projects may be carried out in any sector of the economy. The overall assigned amount for the Annex B remains unaffected by these transactions. The benefits of hosting such project include reduced local pollution and increased access to “climate friendly technologies”. The benefits for the investing country are lower-cost abatement opportunities.52

- **Clean Development Mechanism** (Art 12) establishes basic rules for “project activities resulting in certified emission reductions” in developing countries. These project activities are supposed to be financed by private business in Annex B Parties. The CDM are supposed to enable non-Annex B countries to host projects that contribute to their sustainable development goals and reduce greenhouse gas emissions, and Annex B countries to use the resulting certified emission reductions (CERs) to meet part of their commitment. For example, an investment by the Swedish Government or a Swedish Company to improve the energy efficiency in a steel plant in a country in Africa could qualify as a CDM project.

- **International Emissions Trading** (Art 17) is essentially trade in Assigned Amount Units (AAUs) where each participator faces a binding target, the AAUs traded are not specific to a project or sector (see the following sections).

Co-operation and action to limit climate change is most complex because serious actions can reach deep into countries economic and political interests. Carbon dioxide, the main contributor to climate change, comes predominantly from the use of fossil fuels. Energy use has been intimately related to economic development, and the fossil fuel industries comprise some of the largest and most powerful industries in the world. That is why the inclusion of these “flexibility mechanisms” into the Protocol was top priority for the United States (US), and was also of vital importance for other industrialised countries outside of the European Union and for Russia.53 The Annex B countries most in opposition to make reduction commitments under the negotiation process were the US, Russia, Japan, Australia, Canada, New Zealand, Norway and Switzerland (often termed JUSSCANNZ group). These countries were strongly supported by the countries within the Organization of Petroleum Exporting Countries (OPEC). It has been said, that the US negotiators “anti-interventionist by

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inclination”, and much sensitive to their citizens’ and industries’ attachment to cheap were trying to find reasons to pull-back from the whole process.54

3.2 The Ideas Behind Emissions Trading

The idea that gives leverage to emissions trading is first and foremost that it is more cost-efficient than other non-marked based environmental polices. Trading systems are supposed to allow one part that finds compliance expensive to reduce its compliance effort by paying another part that finds additional compliance relatively easy to increase its compliance.55 This means that one has to define an allowed amount of emissions (a cap), one has to establish property rights for these emission amounts,56 and then allow trade among the concerned parties. The idea is that the unused allowances can be traded freely among the market participants. The trading make sense if the costs of reducing emissions vary significantly between the participants of the system. It is supposed to create, at least, two positive outcomes. First, states or companies that need to reduce emissions gain flexibility since they can buy additional allowances if on-site reductions turn out to be too expensive. Second, allowances transform the status of emission reductions from obligatory costs to valuable assets. Some authors claim that this will provide a strong incentive for research and development, investment in plant and equipment and adoption of new energy-saving technologies.57 This because an innovator gains the benefit of their own reduced abatement costs and profits either from buying fewer allowances or selling more.

The trading arose in the US from government and business concern that economic development would be constrained by air quality laws enacted as part of the Clean Air Act.58 Under these laws, maximum allowable concentrations for specific air pollutants were set for each region. The problem for regions, which were already over the maximum allowable concentrations, was how to achieve economic growth when industrial growth was likely to add pollution load and therefore would be illegal. In response, the regulators adopted a policy which meant that companies that wanted to expand had to reduce the emissions from their

56 The terminology for these emission amounts are a bit confusing, they are sometimes called permits, emission rights, assigned amount units (Kyoto Protocol), or allowances. Further on in this study when referring to the issue they are called allowances.
58 To read more about the initial trade, see, e.g. Stavins, R. N. (1998) What can we learn from the grand policy experience? Lessons from SO2 allowance trading. Pp. 69-88.
existing facilities so that the total amount of emissions when they built new plant was no more than the had previously been discharging. These kinds of arrangements were later developed into emissions trading systems.

The first domestic large-scale attempt to use emissions trading as a pollution control at the national level was introduced by the US Acid Rain Program in the 1990s. This program aimed at reducing sulphur dioxide (SO₂) emissions from electric utilities and is now widely viewed as a success.⁵⁹ The only actual international emissions trading system that has been of any significance is the “industrial rationalisation” program under the Montreal Protocol on Substance that Deplete the Ozone Layer. In this system many trades occurred, primarily among the US and the EU.⁶⁰ Emissions trading with carbon dioxide up till now have meant three different things: there have been bilateral sales of emission reduction allowances between companies, company-internal trading system, and national trading systems. To ensure the greatest possible degree of flexibility among the participants the establishment of an international or a global market is the ultimate goal (see Table 1).

Table 1: Different forms of emissions trading (Source: Engels, A. (2001) *Company behaviour and market creation for CO2 emission rights in the US, the UK, the Netherlands and Germany: Early evidence and future research perspectives*. P. 12).

<table>
<thead>
<tr>
<th>Form of Emissions Trading</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bilateral trading</strong></td>
<td>A company buys emission reductions from another company.</td>
</tr>
<tr>
<td><strong>Company –internal trading</strong></td>
<td>A company adopts an emission reduction target and uses an internal trading system to enable the exchange of emission allowances between sub-units of the company.</td>
</tr>
<tr>
<td><strong>Domestic trading</strong></td>
<td>A state adopts a domestic emission reduction target and uses a domestic trading scheme to enable the exchange of emission allowances between companies or sectors.</td>
</tr>
<tr>
<td><strong>International or global Trading</strong></td>
<td>Entities that have adopted emission reduction targets can sell emission allowances in the case of over-compliance, or buy them from other entities in the case of exceeding the target, at international exchanges; market participants can be both companies and countries, plus market participants without reduction targets.</td>
</tr>
</tbody>
</table>

Countries and companies now face the global pressure to reduce CO₂ emissions, and some of them have already taken the first steps towards the establishment of an international market for CO₂ emission allowances. Companies like BP-Amoco (UK), Elsam (Dk), Hamburgische Electricitaets-Werke (D), Marubeni Corp. (Jp) and Niagara Mohawk (USA), have conducted several bilateral trades. Some of the companies, as for example BP-Amoco, have also created company-internal trading systems. Adopted emission reduction targets and uses the internal trading system to enable the exchange of emission allowances between different units of the company. The United Kingdom and Denmark are two countries that have adopted domestic emissions trading systems as a tool to achieve emission reductions.61

3.3 Emissions trading within the Kyoto Protocol

The Kyoto Protocol allows for greenhouse gas trading among countries to meet their commitments under the Protocol, but only some basic rules on trading were incorporated into Article 17 of the Protocol, as well as paragraphs 10 and 11 of Article 3. Were the two latter paragraphs define the parameters for emissions trading (see Box 1).

Article 17 establishes the fact that only industrialised countries are to be participants in a trading regime. As mentioned before, these are the northern industrialised countries of the OECD as well as central and eastern European countries and some states of the former Soviet Union. Parties without legally binding emission reduction and limitation objectives, first and foremost developing countries, are excluded from participating in trading. This because, restricting participation to those countries with legally binding targets will ensure that the overall amount of units is stable.62

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Box 1. Kyoto Protocol Articles and their Paragraphs related to emissions trading.

<table>
<thead>
<tr>
<th>Article 3.10</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Any emission reduction units, or any part of an assigned amount, which a Party acquires from another Party in accordance with the provisions of Article 6 or of Article 17 shall be added to the assigned amount for the acquiring Party.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Article 3.11</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Any emission reduction units, or any part of an assigned amount, which a Party transfers to another Party in accordance with the provisions of Article 6 or of Article 17 shall be subtracted from the assigned amount for the transferring Party.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Article 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>“The Conference of the Parties [to the Convention] shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling the commitments under Article 3. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitment under that article.”</td>
</tr>
</tbody>
</table>

These are the international rules given by the Kyoto Protocol. Domestic trading systems will have to mirror these rules if their legal-entities are directly involved in the international market. Article 17 states that any trading shall be “supplemental” to domestic actions for the purpose of meeting the obligations. This clause is an attempt to limit the possibility for countries to “buy themselves out” of their obligations. “Domestic actions” in this way means measures taken within the own country to reduce emissions, as for example converting a coal based energy source into bioenergy. The objective of limiting the use of trading is, first and foremost, posted by the large emission reductions in Russia and Ukraine caused by their economic decline due to their transformation to market economies, the so-called “hot air”. The large difference between the 1990 emission level in these countries and their actual
emissions have created a “reservoir” of hot air from which Russia and Ukraine could sell allowances to Western industrialised countries.  

The enforcement of its rules is one of the most important factors of any trading system. Procedures and different sorts of institutions to monitor, verify, assess compliance and enforce the rules in the cases of non-compliance must have urgent priority in the establishment an international trading system, for at least two reasons:

- Non-compliance with the commitments due from a flawed system would undermine the international climate regime, lead to slower reduction of the greenhouse gases and cast doubt on the willingness of industrialised states to tackle the threat of climate change. This would make the already problematic task, to involve the developing countries in greenhouse gas reducing activities, even harder.

- The trustworthiness of the trading regime itself is at stake, since trust in the market and the correct behaviour of its participants are one of the main fundaments of any trading regime. The failure to discover and sanction instances of non-compliance would prevent the establishment of a stable and flourishing market.

The Protocol contains several articles concerning the enforcement of its rules e.g. monitoring and reporting procedures (Art. 5 and 7), and verification functions (Art. 8). There are also, according to Oberthur and Ott, several possible punishments for non-compliance e.g. sanctions at the national level. At the international level were financial sanctions are hard to impose, a certain financial deposit could be required prior to receiving permission to trade, in case of non-compliance such deposit would be lost.

### 3.4 Emissions trading within the European Union

The urgent need to face the matter of global warming and reduce greenhouse gas emissions has been recognised by member states of the European Union since the 1980s. Several member states of the Union have been in the forefront of international efforts to lessen the global climate change. In Kyoto the EU agreed as its main commitment to reduce

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63 Ibid. P. 197.
64 Ibid. P. 201.
the overall level of GHG by 8% between 1990 and 2008/12. Since the responsibility for the action to achieve this target lies with its 15 member states, the Union invoked Article 4 of the Protocol. The article states that countries may redistribute their emissions commitments in ways that preserve the collective goal of the Union. 67 Means of achieving the individual targets are left to the member states. Europe-wide measures are thought to be essentially complementary. However the European Council of Ministers has estimated that some EU-wide measures may be needed, one example of this is an emissions trading system applicable for all the members of the EU.

In the year 2000, the European Commission presented a Green Paper (a discussion paper) on emissions trading by industry within the Union. 68 The Green Paper met strong support, and a year later November the 23rd the Commission presented a proposal for an EU greenhouse gas emissions trading system. 69 A little over a year after the proposal was published the Council unanimously reached political agreement on a common position in favour of the proposal. 70 The EU Environment Commissioner Margot Wallström welcomes the agreement and expressed:

“This is a landmark decision for the EU’s strategy to fight climate change […] It proves that the EU is taking action on climate change and gets emissions down, and that we do so in a way that minimises the cost to the economy. The world’s eyes have been upon us to see whether we will succeed in creating the biggest emissions trading scheme world-wide so far. We have succeeded. It will help all Member State, as well as the EU as a whole, to reach their Kyoto targets while cutting costs at the same time”. 71

Trading is to start at 2005 and the system will be the first trans-national carbon dioxide emissions trading scheme in the world. Covering potentially up to 30 states in the period up to 2012 (if participation of the European Economic Area (EEA) states and the forthcoming enlargement of the Union are included in the basis of calculation). This system is a, so-called cap-and-trade program, i.e. a control program that limit the total emissions within an airshed, in this case the European Union. The limits are based on a complete inventory of emissions

67 Article 4 is usually referred to as the “Bubble”, which establishes that groups of countries may redistribute their emissions commitments in ways that preserve their collective goal. Any group may use this provision, but it was originally designed for the EU’s unique character as a political union but not a federal state.
70 Some changes have been made to the original proposal. These changes can be viewed in Appendix 2.
sources, while allowing the use of tradable allowances to achieve the cap. These allowances can be tradable between companies and their separate installations within the Member States of the Union. At a rough estimate about 4000 to 5000 installations across the now existing EU Member States will be affected by the trading scheme.\(^{72}\) Each year, these companies must be able to show a number of allowances that corresponds with their actual emissions. If they are not able to do so, sanctions will be imposed on them.\(^{73}\) If a company buys allowances from other companies within the same country, there will be no change of the number of tonnes carbon dioxide that a country can emit under the Burden Sharing Agreement. If, however, a company buys allowances from companies within other Member States, there has to be a corresponding adjustment, recorded by the national registries, to the number of tonnes that each country has under the Burden Sharing Agreement.\(^{74}\) In other words, the selling country loses its entitlement to emit and must actually reduce its emissions correspondingly. Thus, the buying country becomes able to increase their emissions of carbon dioxide.

Initially 2005, when the trading is to start, only certain kind of sectors and activities are to take part in the trading systems, e.g. electricity and heat generation, iron- and steel industry, refineries, pulp-mill industries, and cement works.\(^{75}\) Important sectors with large-scale emissions that have been excluded are, for example, the chemical sector, waste incineration sector, and the traffic sector. This is mainly motivated by the current complexities of measuring the emissions from these sectors, however the aim is to include them also.

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\(^{72}\) Ibid.

\(^{73}\) See Appendix 2 of this study.


\(^{75}\) For the full coverage of the sectors which are to take part in the trading system, see Appendix 1 of Com (2001) 581 final.
Chapter four

Ethical Problems Concerning Emissions Trading

In this chapter the ethical problems concerning emissions trading are addressed. For the purpose of the present analysis four story lines have been distinguished, entitled “Environmental justice,” “Pollution becomes legitimate,” “Money becomes a factor,” and last but not least the “Conclusions”. It should be noticed that all of these phenomena are closely connected to each other, and the basis of division could have been made differently. Anyhow, the division serves the purpose in this section, namely, to show some of the moral problems that are connected to emissions trading.

4.1 Environmental justice

As described in chapter one, critics have raised arguments about emissions trading and environmental justice. There are a great number of definitions of environmental justice, and this is not the place to address them all, but according to Des Jardins, environmental justice investigates the social distribution of environmental benefits and burdens. Thus, a society “that distributes these benefits and burdens unequally is prima facie unjust”.76 These injustices most often arise when disadvantaged minority and lower income part of the population are exposed to a disproportionate share of the total pollution. The opposition to emissions trading systems argues that the trading will create so called “pollution hot spots”, i.e. local areas with excessively high emissions or concentrations of hazardous air pollutants.77 It has been claimed that these hot spots can develop from a high concentration of emission trading allowances purchased in an ecological sensitive area, as well as from the long-range transport of emissions from high smokestacks.

When talking about emissions trading and environmental justice it is of vital importance to make a distinction between uniformly mixed and non-uniformly mixed pollutants. 78 Carbon dioxide and other greenhouse gases are uniformly mixed, which means that relative to the time it takes for the impact of these pollutants to occur, they have dispersed over a large global region. Therefore, in the context of global climate change it is irrelevant where the emissions occurring. It is the total stock of greenhouse gases in the atmosphere that leads to global warming. Consequently, carbon dioxide emissions trading systems would not alter the geographical pattern of the impact of climate change, and therefore it is not very accurate to say that CO₂ trading systems would create hot spots or exacerbate environmental injustice. Emission trading with non-uniformly mixed pollutants, e.g. SO₂ on the other hand may create these hot spots and lead to environmental injustice. Since concentration are generally greater near the source of the pollution and decrease as distance increases from the source. 79

4.2 Pollution becomes legitimate

One major ethical problem with emissions trading system, which make them appeal to business people, is that the trading system remove the polluting activity from the “criminal sphere” and legitimise it. Unlike a fine that is imposed for doing something wrong, a pollution allowance indicates that the activity is official and done with approval. The permission granted to go on doing that activity on a continuing basis also reinforces the perception that the activity cannot be wrong. Lisa Bunin, at the time for the statement a Greenpeace campaigner, gives expression for the uneasiness that many environmentalists feel towards the concept of emissions trading:

“This approach appears like a thinly veiled scheme to privatise air using marketable permits. Industry simply does not have the right, nor should it ever be given the right, to make money off our air. Air is a part of nature that is priceless—it is essential to all life on earth. It must never be allowed to be quantified or traded by industry over the heads of communities, nor should industry be allowed to bribe communities into consenting to allow them to do so. […] In my view this is a highly offensive and dangerous program that should be eradicated at the earliest opportunity.” 80

79 This is not always the case because air pollution dispersion patterns are much complex. For example, wind speed and direction. The greater the speed, the greater the distance the pollutants disperses.
The portrayal of economic instruments, such as emissions trading systems, as neutral tools removes them from public scrutiny and gives the systems into the hands of economists and regulators. There is no question that business people, bureaucrats and politicians have been attracted to the economic instrument emissions trading. Politicians have seen the environmental crisis as being one of potential politically damaging conflict.\textsuperscript{81} In policy-making decisions in this area, they have been forced to make choices that inevitably left some voters upset. By using such an economic instrument they will remove decision-making from the public area and thereby depoliticizing environmental debates.

\textbf{4.3 Money becomes a factor}

Emissions trading systems have been criticised for turning parts of the global commons into saleable allowances of property.\textsuperscript{82} Were market-based measures would grant the highest decision-making power over environmental quality to those who currently make production decisions now. An emissions trading system gives power to those most able to pay, because pollution control is more costly for some companies than others and the cost of buying allowances is in relative terms less for the rich than for the poor. Countries and companies will have the choice about whether to pollute (and pay for the allowances) or to cut emissions.

Tradable allowances means that permission to pollute is auctioned to the highest bidder. In this way, countries or companies can choose whether or not to change production processes or introduce innovations to reduce their emissions. A number of studies have indicated that cost savings arising from economic instruments often result directly from firms not having to make pollution reduction that would have been required if a legislative policy was put in place. Hahn and Hester have pointed out that emissions trading saved money for industry by enabling firms to “avoid making emissions reductions that they otherwise would have been required to make".\textsuperscript{83} The major concern of many developing countries, environmental and some of the developed countries, is that the emissions trading systems should not become a means to escape measures taken within the countries or companies. As shown in section 3.3, Article 17 of the Kyoto Protocol attempt to address these concerns by stating that the use of allowances from other countries must be “supplemental” to domestic action by the Annex B

\textsuperscript{82} For one example see Belliveau, M. (1998) \textit{Smoke Mirrors. Will Global Pollution Trading Save the Climate Or Promote Injustice and Fraud?}
countries in meeting their reduction commitments. The ideas of placing some kind of restriction on the mechanism to ensure some amount of domestic action by each Annex B party has been discussed at length. However, how these restrictions would be implemented has not yet been agreed to. Against these concerns stand the argumentation made by some authors, whom claims that emissions trading will provide a strong incentive for research and development, investment in plant and equipment and adoption of new energy-saving technologies. This because an innovator gains the benefit of their own reduced abatement costs and profits either from buying fewer allowances or selling more.

Another more practical issue, with a hint of philosophical undertone, that has received a lot of attention from the “green” business community, is the problem of how to allocate the initial allowances between the participants. Several companies’ representatives in Sweden claims that if a trading scheme is based on an initial free allowance based on past emissions it is in the interest of polluting companies to put out as much greenhouse gases as possible in the next few years prior to such a trading scheme being introduced. A system based on past emissions, rewards the worst polluters by giving them the highest entitlements to start with (this applies both to individual companies and to nations as well).

4.4 Conclusions

It is true to say that the effects of climate change will affect those least able to protect themselves the most, the poor and marginalised people of the world. Since the privileged can reduce their vulnerability, e.g. move away from the areas that are most threaten by the effects (e.g. draughts, floods, raised sea levels, tropical storms, and so on) of the climate change. However, this injustice will not depend on the use of emissions trading systems, but rather on the characteristics of the effects caused by global warming. Thus, it is not particularly relevant to say that emissions trading of carbon dioxide increase the environmental justice.

A more relevant issue is the fundamental unease a lot of people feel with the idea that countries and companies can meet their environmental commitments with money rather than through direct action. The trading is connected to power, and it enables those most able to pay, to emit as much as they want. As mentioned above, the systems have received criticism for turning parts of the global commons into saleable allowances of property. But from a

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85 By the phrase “green”, I mean companies that have been proactive and already made substantial emissions cuts.
commons point of view, it is clear that it is humanity that holds the biosphere in trust, and all citizens equally share the trusteeship of an inherited patrimony. Consequently, one can strongly question whether countries or companies should be able to own allowances to emit carbon dioxide. However, the most essential ethical problem with carbon dioxide trading is that the trading system will remove the polluting activity from the “criminal sphere” and legitimise it. In that way one legitimise something that may endanger not just the natural world, but also human health, and in the long run even our survival.
Chapter five

Why is it wrong to pollute?

The following chapter serves as a strengthener to the initial presumption; emissions trading systems are not in wide reflective equilibrium, because the concept is contradictory to the “moral intuition” i.e. it is wrong to pollute the environment. The objective here is to show how the moral intuition finds support from the different theories behind environmental ethics. The chapter has been divided into four different main parts “Environmental Ethics”, “Anthropocentric ethics”, “Nonanthropocentric ethics”, the chapter is completed with the “Conclusions” which are drawn from the former sections.

5.1 Environmental ethics

As human pressures increase throughout the entire world and the influence of industrial man spreads in ever winding circles, powered by fossil-fuel energy accumulated from ancient ecosystems, the environmental movement is growing stronger, and questions about environmental degradation are spreading into the lives of ethicists. Before this “awakening” ethicists had settled on at least one conclusion: that the moral has nothing to do with the natural. To argue otherwise would be to make the naturalistic fallacy, i.e. moving without justification from what is in nature ought to be in culture. Science describes nature and environmental phenomena, and ethics prescribes human conduct and moral law. To confuse the two would make a category mistake. Nature simply is, without objective value, only humans are ethical subjects and only humans are ethical objects, nature is amoral.

In the last decades the cries for a different approach have become louder and different types of environmental ethics have emerged. In general one could say that environmental ethics

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87 This section is sure no attempt to give a full coverage of the myriad of different theories that have emerged within the field. The section can be viewed as an introduction to the different standpoint within environmental ethics.
ethics is a topic of applied ethics, and it is a systematic account of the moral relationship between humans and their natural environment. Consequently, as ethicists began to apply different ethical traditions to environmental matters, two fundamental questions guided their work:

1. What is the proper ethical relationship between humans and their surroundings?
2. What is the philosophical basis for this relationship?

Environmental ethics assumes that moral norms can and do govern people’s behaviour toward the natural world. A theory of environmental ethics must go on to explain what these norms are and to whom or to what people have responsibilities and show how these responsibilities are justified. Different theories of environmental ethics offer different answers to these questions. A quite common distinction is the one between anthropocentric ethics; which states that only human beings have moral value, and nonanthropocentric ethics; which grants moral standing to such natural objects as animals and plants. This distinction shows a fundamental shift in ethical thinking. Do we as humans have direct responsibilities to other things than humans? Although many ethicists considered this issue, most of them rejected the possibility that anything other than humans had moral standing. But as mentioned before, due to the environmental concerns, ethicists have in recent years sought to extend ethical consideration to things other than human beings. Yet, the goal of environmental ethics is not to convince people that they should be concerned about the environment. Instead environmental ethics focuses on the moral foundation of environmental responsibility, and how far the responsibility extends.

5.2 Anthropocentric ethics

For the larger part, the occidental philosophical and religious tradition denies that any direct moral relationship exists between humans and the natural environment. The religious theme is set rather explicitly in a famous verse in Genesis in which the Lord is recorded to have said:

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“Let us make man in our image and likeness to rule the fish in the sea, the birds in the sky, all the wild animals on the earth and all the reptiles that crawl upon the earth. So God created them in his own image and blessed them and said to them be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living that moves upon earth”.

By this account, nature was created for humans’ benefit, and it is her role to be the master of nature. The Lord created the earth as a garden for human beings, whom are then given little restriction regarding her use of it.

The justification of the philosophical approach to anthropocentrism is different, yet it leads to essentially the same conclusion as the religious. By this account life has recently evolved to include a self-conscious, rational, deliberative, personal species – *homo sapiens*. Other species have sentient lives, that is, they are capable of feeling and, most significantly morally speaking, of feeling pain. But these species have not the mental capacity to contemplate the past, present and future of its own life, and act rationally and deliberatively to affect the condition of that life. The most common argument for an anthropocentric perspective is that only humans are moral agents and that people only can owe duties towards other moral agents. All other things have ethical value only as long as they serve human interests. When people are to make decisions about the environment, the moral agent needs only to ask him-/herself how these decisions affect other humans? According to Joseph Des Jardins, environmental ethics in these views are true consequentialist ethics: environmental right or wrong behaviour depends on the consequences to humans. In this way humans protect the environment for their own human interests.

Some authors make a distinction between traditional anthropocentrism and “weak” anthropocentrism. According to the ideas behind “weak” anthropocentrism, people are intrinsically more valuable than non-humans, but at least some non-human beings have a worth of their own and should not merely be treated as means for human ends. A person who regard him-/herself as a weak anthropocentrist would justify protecting wild habitats from exploitation or defending an endangered species, not just because doing so might benefit some group of humans, but also because the habitat and species are somehow good in themselves, or inherently valuable. Another distinction that occurs within environmental

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90 Genesis. 1:26-29.
ethics is the one between a form of anthropocentrism that only recognises the material value of nature, i.e. its value as a resource. And another form of anthropocentrism that also takes account of the non-material values of nature, e.g. its aesthetic, recreational, and scientific values.

The early environmental ethicist John Passmore argues that the anthropocentric view contains all the seeds needed for an ethically appropriate relationship with nature. Passmore writes:

“The traditional moral teaching of the west, Christian or utilitarian, has always taught men, however, that they ought not so to act as to injure their neighbours. And we have now discovered that the disposal of wastes into sea or air, the destruction of ecosystems, the procreation of large families, the depletion of resources, constitute injury to fellow-men, present and future. To that extent, conventional morality, without any supplementation whatsoever, suffices to justify our ecological concern”.93

According to Passmore, the call for a new ethics is not urgent. It is enough to remember the old saying “nobody ought to poison his neighbour”. He also argues that the primary causes to environmental deprivation are greed and short-sightedness, problems that can be overcome with an “old-fashioned procedure, thoughtful action”.94 It follows from the anthropocentric perspective that pollution and a destruction of the natural environment is wrong because it diminishes humans’ legacy and estate by depriving them of places of refuge, fulfilment, and recreation.

The ethics of sustainable development

The state of the environment is a major worldwide concern, and sustainable development, the concept emerged at the end of twentieth century, has become an overarching goal for all human society. The notion of sustainable development got its fully acknowledgement with the Brundtland Report “Our Common Future”, and has been further developed through the two other UN documents “The Rio Declaration”, and “Agenda 21”. The Brundtland Report provided for the very first time in such a popularised edition, an assessment of the global environmental crisis. The matters of energy, species extinction, population, food production, and urbanisation were specifically elaborated in the report. In this way it acknowledge and

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gave confidence to what no longer could be disputed – the fact of the global environmental crisis. The United Nations Conference on Environment and Development (UNCED) process began with UN Resolution 44/228 of December 1989. With this Resolution the UN expressly referred to *Our Common Future* and decided to convene the UNCED to examine, among other things, “…the state of the environment and changes that have occurred since the UN Conference on the Human environment.”\(^\text{95}\) The Earth Summit was held in Rio de Janeiro on June 3-14, 1992 and resulted in, among other things, the Rio Declaration and Agenda 21. As mentioned under the introduction, the Brundtland Report acknowledged the importance for ethical and moral reflections when to deal with all environmental problems. Gro Harlem Brundtland also stated that there is a great need for “a new holistic ethic in which economic growth and environmental protection go hand-in-hand around the world”. The problem is however that none of the examined documents expressly states upon what values this “new holistic ethic” rests. It has also to be mentioned that the authors to Agenda 21 seems to be aware of this fact, since they write that the following actions should be taken:

> “Strengthening and establishing national advisory groups on environmental and developmental ethics, in order to develop a common value framework between the scientific and technological community and society as a whole, and promote continuous dialogue […] Extending education and training in developmental and environmental ethical issues to integrate such objectives into education curricula and research priorities…”\(^\text{96}\)

If people raise the notion of *sustainable development* to a new global ethics, what kind of values becomes important and which do not? Radical critics claims that the whole Brundtland Report and the notion of sustainable development is a rhetorical ploy which conceals a strategy for sustainable development rather then addressing the ecological crisis.\(^\text{97}\) The report found that today’s ecological crisis is a crisis of human survival, especially in developing countries.

> “We have in the past been concerned about the impacts of economic growth upon the environment. We are now forced to concern ourselves with the impact of ecological stress -

\(^{95}\) UN General Assembly Resolution 44/228.5.


degradation of soils, water regimes, atmosphere and forests - upon our economic prospect.  

Although the report acknowledge that change was needed, and sometimes even suggested lifestyle changes in the industrialised world. Some authors claims that the proper solution expressed in the documents emphasises the economic not the human let alone political concerns. Other solutions, expressed in the report, are for example science and technology, economic-growth in an open-market economy, and western-style management, especially resource management and risk management. These solutions do not give expression for a new holistic thinking. Instead one could argue that they characterise what Maarten Hajer in his book The Politics of Environmental Discourse calls “ecological modernization”, i.e. a new ecological consensus. The discourse of ecological modernization recognises the ecological crisis as evident, but unlike the radical environmental movements of the 1970s, it suggests that the problems can be solved in compliance with the main institutional arrangements in society. Most notably, in Hajer’s view “ecological modernization frames environmental problems combining monetary units with discursive elements derived from natural sciences. This provides a common denominator through which costs and benefits of pollution can be taken into account”.

All three of the documents states that the development of society has to be sustainable. There are of course innumerable interpretations of this concept, but a quite accepted approach, which is also expressed in the documents, is that it has to encompass three elements: economic, social, and environmental. The economic approach to sustainable development is based on the concept of the maximum flow of income that could be obtained while, at least, maintaining the stock of assets that produce these benefits. The social concept seeks to maintain the resilience of social and cultural systems and their capacity to withstand shocks. Greater equity and the reductions of destructive conflicts among humans are important aspects of this approach. Preservation of cultural diversity and cultural capital, and a better use of knowledge concerning sustainable practices are also much emphasised. The environmental perspective focuses on the resilience of biological and ecological system. The

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98 WCED, Our Common Future. P. 5.  
emphasis is on preserving the resilience and dynamic capacity of such systems to adapt to change, rather than the conservation of some ideal static situation.\textsuperscript{101}

The Brundtland Report established that sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” and that “the satisfaction of human needs and aspirations is the major objective of development”.\textsuperscript{102} This view is also settled very clearly in the Rio Declaration:

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“Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature. […] The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.”\textsuperscript{103}
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The assumption here is that only human beings are morally significant persons and have moral standing. Since the environment is crucial to human well being and human survival, then we have an indirect duty towards the environment, that is a duty, which is derived from human interests. This involves the duty to assure that the earth remains environmentally hospitable for supporting human life, and that its beauty and resources are preserved so human life on earth continues to be pleasant. The notions of sustainable development states that our indirect environmental duties derive both from the immediate benefit which living people receive from the environment, and the benefit that future generations of people will receive. On the other hand the Rio Declaration states: “States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and the integrity of the Earth’s ecosystem.”\textsuperscript{104} But when the declaration deals with the “integrity” of ecosystems it does not mean the same integrity as humans have. Instead it gives expression for a human-centred concern about the integrity of the natural environment and has a welfarist orientation, focusing on how things will be for humans, how their interests will be advanced or retarded. This orientation is often linked to concerns about distribution, such as the concern to ensure that future generations, whoever they turn out to be, are not worse off than the present generation. “States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to


\textsuperscript{104} Ibid. Principle 7 (My emphasis).
their own environmental and developmental policies”.

Words like e.g. “ecological capital“, “environmental resource” and “Earth’s resource base“ gives expression for an anthropocentric view were nature is something which human beings can use for their purposes, as long as the ecosystems capacity is not threatened or irreversible damaged. These documents manifest a view of the natural world were it is seen as a resource to be used. Consequently, the notion of sustainable developments contains the following two moral judgements, which has its origin in the view that all human beings are born free and equal:

1. Human needs are to be in centre of concern when dealing with environmental policy-making.
2. Future generations are to be taken into consideration and have a moral standing i.e. the principles of e.g. justice and equality are extended.

5.3 Nonanthropocentric ethics

Anthropocentrism has been regarded by many critics as moral equivalent of racism, and accordingly has been dubbed with the derisive names of speciesism or human chauvinism.

The nonanthropocentric ethics tries to challenge this perspective, and is an extension of ethics to require consideration not only of our duties regarding objects in our natural, but also our duties to these objects, which has moral value. Candidates for moral standing include animals, plants, species, natural objects like mountains, rivers, and wilderness areas, and even earth itself. With a nonanthropocentric perspective humans are bound to protect and promote the above mentioned candidates for their sake. Peoples duties to respect the integrity of e.g. natural ecosystems or animals, and to avoid pollution stem from the fact that these are ways in which people can help make it possible for non-human entities to achieve and maintain a healthy existence in a natural state. “Their well-being, as well as human well-being, is something to be realized as an end in itself”.

As already mentioned, there are a myriad of

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105 Ibid. Principle 3.
108 Philosophers have often discussed moral value in terms of interests (Feinberg, J., Singer, P., Reagan, T., and Goodpaster, K.). To say that an object has interests is to say that it has a “sake of its own” (Feinberg), a “well-fare” of its own (Singer, P.), “inherent value” (Reagan), or its own “well-being” (Goodpaster). All this means to say that these objects have a value that is independent of the value ascribed to them by human beings.
different theories concerning environmental ethics, and this is especially true when it comes
to the nonanthropocentric ethics. This study will address the two most common and
influential i.e. biocentrism and ecocentrism, it has to be mentioned that the terminology used
in the literature to express the responsibility to the natural environment is most varied.

Biocentrism, or life-centred ethics refers to any theory that view life as the object of
respect, life is regarded as something possessing inherent value. With this perspective all
living beings, simply by the virtue of being alive, receive moral standing. The environmental
philosopher Paul Taylor, perhaps the most influential contemporary spokesman for a
biocentric standpoint, claims that what is characteristic for all forms of life, and make them
morally significant, is their aspiration for a “better life”:

“Concerning a butterfly, for example, we may hesitate to speak of its interests or
preferences, and we would probably deny outright that it values anything in the sense of
considering it good or desirable. But once we come to understand its cycle and know the
environmental conditions it need to survive in a healthy state, we have no difficulty in
speaking about what is beneficial to it and what may harm it […] Even when we consider
such a simple animal organisms as one-celled protozoa, it makes perfectly good sense to a
biologically informed person to speak of what benefits or harms them, what environmental
changes are to their advantage or disadvantage, and what physical circumstances are
favorable or unfavorable to them. The more knowledge we gain concerning these
organisms, the better are we able to make sound judgements about what is in their interest
[…].\textsuperscript{110}

Taylor argues that it is meaningful to say that all living things have a good of their own
because they are “teleological centers of life”. By this he means that all living things act
toward some distinctive goal (telos) that determines the specific good for that individual. In
general, that goal is growth, development, sustenance, and propagation. According to Taylor,
it is only individual organisms that have a good of their own. It is not possible to speak of a
species or an eco-system having a good of their own, only its individual members.\textsuperscript{111} To
Taylor it is a matter of biological fact that all living things have a good of their own, but this
is not an ethical good in the sense that this fact does not commit us to any particular ethical
stance toward living things. Having a good of its own does not by itself confer moral standing
on a living thing, but that a living thing has a good of its own is a necessary condition for it to
have, what he calls, “inherent worth”. The normative claim that living beings have inherent

worth is explained and justified by reference to what Taylor calls the “biocentric outlook” on nature. The biocentric outlook focuses on four central beliefs:¹¹²

1. Humans are seen as members of Earth’s community of life in the same sense and on the same terms as all other living things.
2. All species, including humans, are part of a system of interdependence.
3. All living things pursue their own good in their own ways.
4. Humans are understood as not superior to other living things.

To accept these four central beliefs is to adopt the attitude of respect for nature. It is to accept the good of living things as a reason for one’s own actions, i.e. people will act in morally responsible ways toward the natural environment.

The ecocentristic point of view is often called holistic because it focuses upon the “all-ness” of nature. This approach maintains that the environment deserves direct moral consideration, and not one, which is merely derived from human and animal interest. The position of ecocentrism is the view held by Aldo Leopold in his essay *The Land Ethic*. This widely quoted and reprinted essay is perhaps the most influential statement of ecological consciousness to gain recent public attention. One fundamental feature of his idea is the extension of direct ethical considerability from people to non-human entities. Leopold argues that humans are on the brink of a new advancement in morality, which regulates conduct between people and their environment, he calls this the land ethic. For Leopold, “The land ethic simple enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively the land”.¹¹³ This approach involves a radical shift in how people view themselves in relation to the environment. In the essay Leopold attacks the current attitudes about environmental responsibility. He writes:

> “Conservation is getting nowhere because it is incompatible with our Abrahamic concept of Land. We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect. There is no other way for land to survive the impact of mechanized man, nor

¹¹¹ Ibid. P. 71.
¹¹² Ibid. Ch. 3.
¹¹³ Leopold, A. (1949) *A Sand County Almanac; and Sketches Here and There*. P. 204.
for us to reap from it the esthetic harvest it is capable, under science, of contributing to culture [...]”.

For Leopold, conservation is merely a propaganda campaign, which ultimately supports the position that environmental responsibility should be guided by what is financially beneficial for the exploiter. Leopold argues that this approach completely misses the point since e.g. species deserve consideration “as a matter of biotic right”. To develop a proper ecological conscience, Leopold claims that people need a specific mental image to focus on. He offers the image of the land pyramid. The land pyramid is the class of all food chains, where the higher depend on everything beneath it. From the bottom to top, the basic layers of the pyramid are those of soil, plants, insects, insect eating animals, omnivores, and carnivores. Humans fall in the omnivore category. Leopold argues that there is a continuous and upward flow of food energy in the pyramid, and that obstructions to the flow of energy at any level will damage the whole. He concludes his essay by offering a principle, which brings into focus the broader ethical concerns of the environment:

“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”.

What is important to notice, and that to which attention should be directed is the idea that the good of the biotic community is the ultimate measure of the moral value, the rightness or wrongness, of actions. The land ethic, in Leopold’s view, creates “obligations over and above self-interest”, and “obligations have no meaning without conscience, and the problem we face is the extension of social conscience from people to land”. In other words, any genuine ethic is possible, if it is possible to value people for the sake of themselves, then it is equally possible to value land in the same value.

Paul Taylor and Aldo Leopold represent two distinguished nonanthropocentric theories, and they have both a large numbers of supporters whom have continued to develop the original ideas. Some people mean that the representatives to the nonanthropocentric view seldom discuss the practical implications of their standpoints. As Bernard Rollin puts it: “Writings in this area by and large have tended to focus more on making case for the

114 Ibid. Foreword.
115 Ibid. Foreword.
117 Ibid. P. 223 and P. 209.
attribution of moral status to these entities than in working out detailed answers to practical issues”.¹¹⁸ For example, some authors distinguish between strong and weak biocentrism and strong and weak ecocentrism.¹¹⁹ Strong biocentrism is defined as the ethical standpoint that human beings owe equally strong duties towards individual animals and plants as towards human beings. Weak biocentrism is viewed as the ethical standpoint that human beings owe weaker duties towards individual animals and plants than towards fellow human beings.¹²⁰ Strong ecocentrism is defined as the ethical standpoint that people owe equally strong duties towards ecological wholes as towards humanity as a whole. Weak ecocentrism is defined as the ethical standpoint that humans owe weaker duties towards ecological holes than toward humanity as a hole.

5.4 Conclusions

It is clear that the theories in the three previous sections all can be used as support for the initial presumption; it is morally wrong to pollute the natural world. From the environmental anthropocentristic angle one could argue as follow: since the natural world is crucial for peoples’ well being and human survival, then we have an indirect duty to protect the environment. This involves the duty to assure that the earth remains environmentally hospitable for supporting human life, and that its beauty and resources are preserved so human life on earth continues to be pleasant. Consequently, from the anthropocentric standpoint it can be argued that it is wrong to pollute the environment. The sustainability approach adds that the duties derive both from the immediate benefit which living persons receive from the environment, and the benefit that future generations will receive.

The biocentric approach is an extension that qualifies living things as morally significant individuals. Thus, people’s responsibility not to pollute the natural world, also hinges on the environmental interests of other living things. The third and most radical theory of responsibility to the natural world, ecocentrism, establish that the environment deserves direct moral consideration. Recalling, the quotation made in section 5.3 “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community”, it fortifies the initial presumption: it is wrong to pollute the natural world.

¹²⁰ Weak biocentrism has strong resemblance with what is called “weak anthropocentrism” in section 5.2.
Chapter six

The Ethics Behind Emissions Trading

In the following chapter the ethical assumptions that underlie emissions trading systems are being analysed. The objectives are to find out if a trading scheme can find support from relevant background theories, political as well as ethical. The four different sections in this chapter are entitled “The Anthropocentric standpoint”, “The most relevant political background theory”, “The most relevant ethical theory”, and finally “Conclusions”.

6.1 The Anthropocentric standpoint

An inherent assumption behind emissions trading is that the environment can take a certain amount of pollution and that trading can ensure efficient allocation of that capacity to companies or countries that need to utilise it. Safeguarding the climate for protecting people is the most widely accepted story line underlying reduction commitments and the establishment of international emissions trading system. As climate change may endanger possessions, health, and human survival, in particular of the weaker section of the world population, many stakeholders call for urgent action. Thus, perceived vulnerability is the reason for the ethical commitment.

In traditional anthropocentric ethical thinking the pollution would be wrong if it harmed other now living people or their property. This view does not adequately address the harms caused by the emissions of CO₂, since some of the harmful effects might not occur in many years. The notion of sustainable development extends the ethical concepts such as duties and rights to include future generations. This extension gives the future generations a moral standing and the ethics behind emissions trading has been extended beyond traditional anthropocentric boundaries. But it is important to emphasis that only human beings continue to possess moral standing. The duty not to pollute is according to the UN documents a duty regarding the environment it is not a duty to the environment. The ethics of sustainable development follow in this sense the mainstream Western philosophy and hold an
anthropocentric view of moral standing. Human beings and only humans have moral standing, but the genuinely new thing about it is the extension, which gives future generations a moral standing.\textsuperscript{121} Measures taken against the global warming are matters of balancing relations among people rather than between people and nature. The notion of sustainable development views the human community as a partnership among all generation – the living, the dead, and the unborn. The principle of “intergenerational equity” is, according to John Alder and David Wilkinson, derived from utilitarian ideas in that maximising welfare should be indifferent to time.\textsuperscript{122} But, the principle might also be regarded as a deontological principle in as much as it seems to imply that future generations have inherent rights, which require present people to postpone their enjoyment. Now living humans may, as an example, owe duties to God to preserve the environment in an unharmed condition for the benefit of those who will come after.

\section*{6.2 The most relevant political background theory}

As argued in chapter 3.2 the ideas behind emissions trading gives expression for an economic rationalism, which draws from neo-classical economic theory. In short this theory is the dogma, which says that markets and money can do almost everything better than governments, bureaucracies and the law. Proclaimers of neo-classical economic theory believe that the central role of policy-making should be the establishment of a framework in which the efficacy of market forces is maximised and hence where resources can be allocated as efficiently as possible.\textsuperscript{123} From a conventional economic view, the environment appears as a storehouse of resources to be turned into value. The natural world provides the sources, sites, and sinks for societies and industrial activity, which provides valuable services and goods for people. As shown in previous section emissions trading arose in the US as a result from government and business concern that economic growth would be constrained by air quality laws. The rationale behind emissions trading is that environmental degradation arises from incomplete ownership of rights (allowances) to use valuable resources. Spokesmen for economic instruments argue that there is a strong tendency for people to overexploit and degrade common property resources.\textsuperscript{124} In situations were the natural world cannot be privately owned, access rights or user rights can be owned. The idea of right-based pollution

\begin{thebibliography}{99}
\bibitem{121} Stenmark, M. (2000) P. 49.
\bibitem{122} Alder, J. and Wilkinson (1999) P. 55.
\end{thebibliography}
control measures is to create such allowances, and establish markets in them. On these markets the participants can then buy or sell these allowances as they wish among themselves. The concept of “externalities” is the basis for much of the justification for regulations and programs such as emissions trading systems.\textsuperscript{125} Externalities are the effects on the well being of individuals and companies that are not taken into account in the markets for the goods and services whose production results in these impacts. Negative externalities are social costs incurred in the production of a good that do not appear in the market price of the good. The classic solution to this problem is to “internalising the externalities” i.e. transferring the costs to the polluter that would otherwise be external costs in the form of damages to humans’ health or to the environment.\textsuperscript{126}

Liberalism is the political theory that seems to fit most nicely into this framework. Classical liberalism compromises many different ideas, one of them is “certainly the idea that the state is an instrument for satisfying the wants that men happen to have rather than making good men (e.g. cultivating desirable wants or dispositions in its citizens).”\textsuperscript{127} Liberalism has historically been understood in terms of a sharp distinction between entities: the civil society and the state.\textsuperscript{128} According to this theory, political and social institutions ought to be structured to allow free and equal individuals the widest opportunities, consistent with the like opportunities of others, to plan their own lives and allow them to live the lives that they have planed. Individuals may pursue their own interest by co-operations, and if necessary, by competing with one another within a system of rights that is fair to all. The liberal state does not dictate the moral goals its citizens are to achieve, it respects the right of each human to pursue his or her own conception of the good life as long as his or her actions do not infringe on the same right on others. That the liberal tradition underlie the notion of emissions trading becomes pretty obvious when regarding the writings of Brian Barry:

“The state, on the liberal view must be capable of fulfilling the same self-effacing function as a policeman on point duty, who facilitates the motorists’ getting to their several destinations without bumping into one another but does not have any power to influence those destinations.”\textsuperscript{129}

\textsuperscript{126} Ibid. Pp. 6-7.
\textsuperscript{127} Barry, B. (1965) \textit{Political Argument}. P. 66.
\textsuperscript{128} Knox, T. (ed.) (1952) \textit{Hegel’s Philosophy of Right}. P. 258.
\textsuperscript{129} Barry, B. (1965) P. 74.
The emissions trading system can, with a good share of fantasy, be viewed in the same way as Barry’s policeman. The systems’ cap, secures reductions of emissions, and the system of international emissions trading facilitates for the participants to meet their commitments under the Kyoto Protocol as cost-efficient as possible, by using the possibility to buy or sell allowances as they want. The value premise in liberal thinking is, according to Allen Kneese and Blair Bower, “that the personal wants of the individuals in the society should guide the use of resources in production, distribution, and exchange, and that these personal wants can most efficiently be met through the seeking of maximum profits by all producers”.130 This seems to be well in accordance with the notion of emissions trading were countries and companies, which have the greatest potential to reduce their emissions, are to make the largest reductions. Others gain flexibility because they can buy the right to emit more carbon dioxide if on-site regulations turn out to be too expensive.

Another reason that confirms the argumentation made here, i.e. that the idea behind emissions trading has its roots in the liberal tradition lies in the sphere of international relations. One particular element inherent in liberal thoughts is the credence in international co-operation and multilateral agreements.131 The climate regime, established under the United Nations Framework Convention on Climate Change (UNFCCC), is a good example of this, according to the liberal person, preferable internationalism. The climate regime brings together the representatives from various countries all over the world in order to negotiate methods for managing the Earth climate, and the threats posted by the global warming. The liberals’ confidence in internationalism embodies an obvious belief in multilateral agreements, such as the Kyoto Protocol, and international organisations, as for example IPCC, together with the conviction that political problems can be solved and that national interest do not run counter to international co-operation. Liberals see the international arena as a place where it is possible to detect and foresee problems and apply the treatment before the damage is caused.

6.3 The most relevant ethical theory

To serve the objectives with this study it is possible to sort the political liberalism under two relevant ethical headings: deontological (or Kantian) and utilitarian (often called teleological or consequentialist). These two theories differ significantly in the way they

understand the relationship between the right and the good. The notion of *rightness* is connected to actions e.g. in so far as they are just or meet some other ethical criterion. *Goodness*, on the other hand, is attached primarily to the consequences of actions e.g. in so far as the increase happiness, enhance the welfare, satisfy preferences and so on. The utilitarian theory fits into the context of carbon dioxide emissions trading. Because the utilitarian consider an action or a decision to have the moral quality of rightness to the extent that it leads to the maximisation of good consequences, conceived in terms of social welfare or utility, over the long run. An utilitarian identify some quality or state of affairs as what is good and then define morally right actions as those actions that aim at maximisation of this good. From the utilitarian perspective, the global atmosphere is seen as a sink that overflows because of its uncoordinated use by competitive, growth-producing economies. Regulation is viewed as important and necessary, because the accumulating of emissions over and above the capacity of the sink may eventually undermine the prospects of, e.g. further economic development, human health, and natural areas. The regulation has to chain the individual tendencies to enlarge economic power. Optimising advantages for everybody in the long run by limiting the maximisation of advantage by everybody in the short run is the economic rationale for setting reduction targets. As a consequence, a utilitarian calculus of aggregate benefits and costs guides the selection of targets.

Turning to the people in favour of the deontological ideas they may very well “agree with a conception of the good that ties it to social welfare, wealth maximisation or utility, in so far as such a conception remain arguably neutral among the values that preferences, desires, or satisfactions express”. However, the deontologies insists that the rightness, fairness, or justice of decisions cannot be analysed at any level in terms of the satisfaction of preferences or the maximisation of utility. In this sense the deontologies takes the right to be prior to the good. Thus, the deontologies would not agree with the ideas behind the emissions trading systems since it legitimates something that is not right i.e. to pollute the natural world. The main difference between the deontological and the utilitarian approach is that the utilitarian allows trade-offs, which the deontological refuses to approve. As Brian Barry puts it:

> “On the surface, rights theories stand in opposition to utilitarianism, for rights, whatever their foundation (or lack thereof), are supposed to trump claims that might be...

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133 Ibid. P. 171.
134 Ibid. P. 171.
made on behalf of the general welfare. The point here is, however, that the whole notion of rights is simply a variation on utilitarianism in that it accepts the definition of the ethical problem as conterminous with the problem of conflicting interests, and replaces the felicific calculus (in which the interests are simply added) with one which does not permit certain interests to be traded off against others.\textsuperscript{135}

In the \textit{Groundwork of the Metaphysic of Morals}, Immanuel Kant offered several distinct versions of what he took to be the underlying principle of all morality. One version of the \textit{categorical imperative} is formulated “Act only on that maxim whereby you can at the same time will that it should become a universal law”.\textsuperscript{136} It is possible to say that even though most contemporary philosophers rejects Kant’s own view that this principle provides a sufficient foundation for answering all moral questions, most of them agree and do regard Kant’s principle as a necessary condition for a morally acceptable action. That is, for it to be morally permissible for a person to do X under circumstances Y it must also be permissible for everyone else to do X under circumstances Y. The action must be “universalisable” if it is to be morally permissible. Thus, deontologies following in Kant’s footsteps, claim that certain actions are obligatory, permissible, impermissible, and so on, in virtue of specific properties of the action that an agent performs or could perform. As showed in chapter five it is impermissible to pollute the natural environment from both the anthropocentric and nonanthropocentric perspectives, and also from the viewpoint of sustainable development. Therefore, the relevant maxim would be; it is wrong to pollute or destroy the natural world. With a deontological view there is no suggestion that one would look to the consequences derived from an emissions trading system. The crucial basis of this thinking would be the commitment to the principle that one ought not to pollute the environment. In the deontological perspective the rightness or wrongness of an action is a function of more than the goodness or badness of its consequences. Deontologies do not eschew consequences altogether; they contend merely that there is more to morality than pursuing good outcomes. The good, in their way does not fully determine the right.


6.4 Conclusions

The ideas behind emissions trading have their basis in anthropocentric theory, in which the fundamental assumption is that only humans can have direct moral value and that we can value other natural things in relation to human purposes and goals. But, in line with the concept of sustainable development, the traditional anthropocentric thinking has been extended to include duties and rights to future generations.

Liberalism is the political background theory that underlies the framework behind international emissions trading. This conclusion is based on the liberals’ thinking that political and social institutions ought to be built to allow free and equal persons the widest opportunities, consistent with the like opportunities of others. Thus, the liberal state does not dictate the moral goals its citizens are to achieve, it respects the right of each human to pursue his or her own conception of the good life as long as his or her actions do not infringe on the same right on others. The other reason that confirms the conclusions made in this section lies in the liberals’ confidence in international co-operation and multilateral agreements, which rimes well with the whole climate regime. The ideas behind carbon dioxide emissions trading finds support from utilitarian theory. This because the utilitarian regard an action or a decision to have the moral quality of rightness to the extent that it leads to the maximisation of good consequences, conceived in terms of social welfare or utility, over the long run. Regulation is viewed as important and necessary, because the accumulating of emissions may eventually undermine the prospects of, e.g. further economic development, human health, and natural areas. The utilitarian perspective allows moral trade-offs, with a deontological perspective there is no suggestion that one would look to the consequences derived from emissions trading systems.
Chapter seven

Striving for Equilibrium or Accepting Trade-offs?

In this last and concluding chapter I address the main objective with this study. Namely, to find out if emissions trading systems can be morally justified with the method of wide reflective equilibrium. I argue that even though emissions trading systems raises moral questions they have an important role to play in terms of future climate challenges and international co-operation. Thus, there is a possibility to defend them morally on the basis of rationality. The four sections in this chapter are entitled “Striving for wide reflective equilibrium”, “Accepting trade-offs”, “The rationality approach”, and finally “Concluding remarks”.

7.1 Striving for wide reflective equilibrium

As we have seen in chapter two wide reflective equilibrium requires that we develop support for our moral intuitions by working back and forth among judgements about particular cases, moral principles, and other theoretical considerations, both ethical and non-ethical. The study has shown that the moral intuition, *it is wrong to pollute and to perform activities which legitimates pollution*, finds support from the different positions within environmental ethics, and that emissions trading remove the polluting activity from the “criminal sphere” and legitimise it. This leads us to the conclusion that we can question whether emissions trading with carbon dioxide are morally justifiable. Should we therefore work in a direction were we try to undermine the notion of tradable allowances, and consequently also the agreements reached in Kyoto? But, on the other hand the study shows that the economic instrument is supported from a number of different background theories, such as liberalism, neo-classical economic thinking, and utilitarianism. And I have also shown that the ideas about emissions trading, plays an important and significant role in the process of
establishing co-operation among the different states, which are participating in the climate regime.\textsuperscript{137} Does this imply us to revise the moral intuition, it is wrong to pollute the environment? It has now become obvious that we have reached a dead-end, were we have faced conflicting interests. According to the method of wide reflective equilibrium, again, we are to go “back and forth” adjusting the judgements, the principles, or background theories, until we reach a situation were coherence is achieved, i.e until we have reached the equilibrium. The philosopher Norman Daniels has stated, that in a case of a conflict, there is a heavy pressure towards revising the judgements or intuitions, and that no one type of considered moral judgements is held immune to extensive revision.\textsuperscript{138} Since all intuitions are revisable, the intuition “it is wrong to pollute the environment”, is too. But this intuition is most reasonable when we regard the importance of a healthy environment for all present and future life on planet earth. Consequently, I’m not prepared to give it up unless someone presents an overwhelming better alternative, which I guess, is hard to give. So what to do when striving for wide reflective equilibrium?

Perhaps, the philosopher Henry Richardson has an answer to that question. Drawing on Aristotle and Aquinas, Richardson argues that we can determine our ends rationally, since the rationally involved in the selection and modification of our norms can be more and more adequately specified by reflection.\textsuperscript{139} Richardson writes, that the model is far “from being intended as a complete moral theory, the model of specification presupposed that one had a theory, or at least an articulated set of norms, already in hand, and asked a question that then arises”.\textsuperscript{140} He means, that by specifying one may resolve conflicting interests, and get a moral theory to bear in settling concrete issues. Other well-reputed authors, as for example David DeGrazia supports this notion, and even Tom Beauchamp and James Childress, whom criticises Richardson, but are also quite supportive to the idea of specification, at least when it comes to policy-making.\textsuperscript{141}

This line of thinking is further elaborated in section 7.3, but first, lets turn to the reasons for accepting trade-offs in the process of reaching a wide reflective equilibrium concerning the matter of emissions trading.

\textsuperscript{137} This will be further discussed in the next section.
\textsuperscript{141} Beauchamp, T. L. and Childress, J. F. (1994) Principles of Biomedical Ethics. P. 34.
7.2 Accepting trade-offs

Climate change is a global problem that needs a concerted global response. The international community has created a framework for action through agreements to the United Nations Framework Convention on Climate Change, and to the Kyoto Protocol. Broadly speaking, one could say that the Kyoto Protocol has been the outcome of two partly contradictory negotiation objectives. On the one hand, there was the move towards defining reduction commitments that are legally binding, and on the other hand, there was the ambition to maximise “flexibility” in realising these commitments. As stated in section 3.1 emissions trading is one of the three flexibility mechanisms agreed upon at the Kyoto meeting, along with Joint Implementation and the Clean Development Mechanism. All these three mechanisms have been introduced in the negotiations as measures to achieve emission reductions at high economic efficiency, allowing capital to be allocated where an additional amount of reduction can be achieved with the least amount of money. One could say that the power of the argument lies in the fact that it carries the logic governing the current wave of economic globalisation into the area of environmental policy.

This may lead us to the conclusion that economic considerations is the most powerful current factor in shaping strategies toward international environmental issues. Thus, one may put the question if it would not be better to address the various environmental problems strictly by genuine environmental concerns? But, in my opinion, we have to keep all options open, without economic considerations the opposition against reductions would be immense, and strong forces would do their best to undermine every attempt to find solutions. We have to realise that the call for substantial reductions in greenhouse gas emissions is urgent over the coming decades if we are to avoid dangerous climate change, and we also have to realise that the targets set by the Protocol are only the first steps. The commitments under the Kyoto Protocol have, according to Hargrave, Kerr, Helme, and Denne, four functions:142

1) They will have a direct though small impact on the environment.
2) They have a role in establishing co-ordination among the efforts of different states. If they are achieved they will begin to establish trust in the co-operative process necessary to achieve long run goals.

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3) They begin to establish norms for relative cost bearing both within Annex B and between developing countries and Annex B. Targets are differentiated; they are linked to historical emissions; poorer states take on less stringent targets than richer states.

4) By setting clear, relatively immediate targets they have focused policy attention on the details of designing the domestic and international institutions and regulations necessary to change human behaviour.

In my opinion, it is function number two and four, mentioned above, that are the most important. We have to remember that the Kyoto Protocol is only a first small step against the substantial objective of the Convention of Climate Change, i.e. to prevent “dangerous human interference” with the climate system. But even though it is a small step, the Protocol is an extremely important step, since a delay in decisions risks the whole agreement to fall a part and taking with it the international basis for action. This is where emissions trading systems gets their vital role. As shown in previous sections the fate of the Kyoto Protocol very much depends upon the establishment of an international trading system. In a way we feel a bit unease, since one could say that the carbon dioxide allowances give the holder the control over the emissions. This has obvious similarities with strong property rights of the kind envisaged by libertarianism, which give the owner of the thing complete control over the thing, control that includes the right to prevent others from using the thing without permission of the owner. But, how can this be? How can some company or country come to have exclusive rights over such a thing as the right to pollute our natural world? To me, this argumentation clearly speaks against the notion of tradable allowances. But, on the other hand is the fact that neither the US nor the other members of the JUSSCANNZ group will ratify the Protocol without the possibility of meeting their quantified targets by trading. Russia’s ratification of the Protocol is dependent on the possibility to sell allowances and thereby create substantial foreign earnings. Consequently, we have reached a situation were we have conflicting standpoints. The issue of climate change has no respect for national boarders and its solutions must be found in the international area. Thus, in my opinion, it is extremely important that we attend to solutions that secure further collaborations among as many countries as possible. Therefore, I am willing to renounce, or at least specify my moral intuition and accept a trade-off with; actions that legitimate pollution are wrong.

Another reason for my support is that the ideas behind emissions trading fits quite neatly within the conceptual framework for sustainable development described in section 5.2. In fact tradable pollution allowances were developed to cut costs to industry and enable economic
growth to continue as well as reduce the emissions of carbon dioxide. One can say that the concept of sustainable development is an attempt to balance two moral demands. The first demand is for development, including economic development or economic growth (mainly in developing countries). The second demand is for sustainability, ensuring that we do not mortgage the future for the sake of gains in the present. This demand arises from the interests of future generations, which just like us will need access to a healthy biosphere. But, as we all know, these two moral demands can come in conflict. In fact, economic growth is often the chief source of threats to the natural environment. This is especially true regarding climate change and the emissions of carbon dioxide. But the standpoint, in the documents concerning sustainable development, is that these two demands can be balanced. That polices can be found that “meet the needs of the present without compromising the ability of future generations to meet their own needs”.143 The concept “sustainability” has been widely accepted all over the world, countries and companies have discovered and utilised the notion of sustainable development in order to improve their social, economic, and environmental performance. In fact the broadening of the notion of protection to include economic issues makes it clear that ultimately, our understanding of the environment will have to encompass all fields of economy, culture, and society. The environmental protection on a global scale will cut across all social areas, and link nations from the North to the south.

I completely agree with Weber when she argues that perceptions of environmental changes are a critical factor in human adaptation to changes. In her study of global warming and expectations, she examines a sample of farmers to assess their expectations about global warming and their current and anticipated behavioural adjustments to this environmental concern.144 She suggests that individuals do not automatically employ a full range of adaptive responses, even if they believe in the urgent need for adaptation and change. Instead, individual differences seem to predispose them toward a certain class of responses. Additionally, engagement in one class of adaptation and risk reduction seems to limit awareness of other risk-reduction mechanisms. Weber’s results exemplify a shortcoming in the human problem-solving process. People tend to stop the search process once a solution to a problem has been identified and, as a result, may fail to generate alternative or additional solutions.145 Thus, we cannot see emissions trading as something that will solve the problem

145 Ibid. P. 339.
of climate change, since complex problems tend to have a variety of causes and call for a range of solutions that involve different aspects of the problem. The goal, I believe, should not be to develop a single, unified system of environmental control, but to develop a resilient, flexible process of examining as many different solutions and perspectives as possible with regard to each particular case.

7.3 The rationality approach

When dealing with normative conclusions that are difficult to accept, some environmental philosophers, as for example Robert Elliot, suggests a mixed ethic, containing both consequentialist and deontological components.\textsuperscript{146} Judgements based on these components must somehow be taken into account by moral agents and weighed against one another. Robert Noziks puts his finger on the most compelling problem with the deontological rules, since they may forbid a particular action in certain circumstances even though performing that action in those circumstances would result in fewer actions of the forbidden type.\textsuperscript{147} In this case of emissions trading systems, where in my opinion enough value is at stake, it may be judged permissible to act in a way that a strict deontology would proscribe. By the same token, the deontological component acts as a serious brake on consequentialist justifications of the emissions trading systems. In such mixed ethics the onus of proof would be on those who are urging action contrary to the deontological maxims, such as the maxim it is wrong to pollute or destroy the natural world. If we treat the deontological position as the initial position, which we must be given compelling reasons for giving up, it assists in ensuring that the consequentialist assessments meet these requirements.

Perhaps, one way of arguing in favour of emissions trading systems is to say that we should see them as social contracts. Contemporary spokesmen of social contractarian theories, such as for example John Rawls and David Gauthier, have tried to forge a strong link between rationality and morality. They argue that the principles of morality issue from a contract that rational persons would agree to initially, and would comply with when they are implemented. Gauthier argues:

The language of morals is […] surely that of reason. What theory of morals, we might […] ask, can ever serve any useful purpose, unless it can show that all the duties it recommends are

truly endorsed by each individual’s reason? […] But are moral duties rationally grounded? This we shall seek to prove, showing that reason has a practical role related to but transcending individual interest, so that principles of action that prescribe duties overriding advantage may be rationally justified. We shall defend the traditional conception of morality as a rational constraint on the pursuit of individual. […] Our enquiry will lead us to the rational basis for morality.”  

Gauthier’s point of departure is Hobbes’ and Rawl’s idea that society is a “cooperative endeavour for mutual advantage”, i.e. social co-operation would enable every person to do better that he or she could do in isolation. In this context, individuals enter into a social contract under which they agree to live together according to some fundamental rules. According to Gauthier, when mutually beneficial outcomes are available through co-operation, but purely selfish behaviour would disadvantage everyone, individuals have reason to work to secure mutual benefits. For a project following Gauthier’s tradition, it is indeed essential that we can establish a link between rationality and morality. If we relate this to emissions trading systems we have to acknowledge the importance of the outcome of the systems, and the results they may generate in terms of emissions cuts and cost savings, but not the least, how the climate regime continues to develop.

In my opinion, if we apply Richardson’s theory about specifying norms, it is possible to reach a position were we find coherence, and perhaps, also a situation were we have obtained a wide reflective equilibrium, which everyone in the contract situation can agree upon. As a matter of fact Richardson, who is critical to a strict reliance on balancing in the process of resolving conflicts, does acknowledges the idea that specifications can be defended on the basis of reflective equilibrium.  

He puts forward a number of reasons in favour of the notion of specifying:

1) Specifications bring the potential that justifications can be offered in terms of reasons that may be publicly stated.

2) They fulfil an important role in articulating understandings and crystallising awareness.

3) Specifications provide an action-guiding framework aiming at solving controversial issues.

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4) Specifying facilitates the collaboration of many practitioners and theorists, each of them building on the work of others.

These reasons seem to me, to have the possibility to fulfil an important role when applied to the controversial and complex issue of emissions trading. Emissions trading is, as already stated, a most complex economical instrument, intended to obtain cost-efficient reductions of the emissions of carbon dioxide. Since the concept of trading with allowances has received criticism from concerned people, it is important that the justifications in favour of the systems can be offered in terms of reasons that may be publicly stated and debated. By specifying a policy-making norm, which is to serve as a framework, guiding the actions in Annex B countries, one also facilitates the collaboration and exchange between e.g. scientists from various backgrounds, politicians, philosophers, and the public. The idea of specification can help people to better understand the complexities and the intentions behind the emissions trading, since they becomes more clearly pronounced. Thus, it will be easier to systematise and clearly articulate the concerns one may hold about the trading, and also to respond to these concerns.

How should we then proceed when we are to specify the initially held intuition, *it is wrong to pollute the environment and perform activities, which legitimate pollution*, into a more specific one? This can be done by acknowledging the point of extensive inquiry of the situation and sensitivity to context, while at the same time insisting that norms or principles must provide us with a bridge between the particular cases. We obtain a proper specification when we arrive at equilibrium between the texture of the particular case and our moral beliefs about it and qualifications we need on the principle we had thought should apply to it.

Richardson states:

> “Central to the role of specification […] is that it is defined as a relation between two norms: an initial one and a more specific one that is brought to bear on practice. Specification, then, can sometimes resolve conflict by filling out – and thereby changing, at least by addition – the set of norms”.$^{151}$

Following this line of thinking we can elaborate the intuition into a more specified one. Namely, *it is wrong to pollute the environment and perform activities, which legitimate*
pollution, as long as these activities are not instruments intended to lead to greater long-term pollution reductions. This specification follows Richardson’s recommendations that the initial norm is to be remained, and that the specification should wear its connection back to the initial norm. By this means, one give credit to the emissions trading systems, and at the same time we do not have to revise the initially held intuition, which is most urgent for protecting our natural world. Thus, we have received an intuition, which better balance the views behind the principles and the different background theories, since it articulates what all of them really wants to accomplish, i.e. a substantive long-term reduction in the emissions of carbon dioxide. But is this really a principle which people in the contractarian position would agree upon? If we continue to follow in the tradition of Richardson, we can come up with another specification, which will provide the foundation for the first one, since “a norm that is a specification of an initial norm may in its turn be specified”. One promising strategy for answering the remaining sceptics would be to specify a principle that the sceptics must accept, and than to show how that certain actions must follow from that principle. In our case, such a principle would be; we ought to reduce the emissions of carbon dioxide, and make sure that there are functioning institutions working for this purpose. Then, by propounding the arguments about the importance of emissions trading, as I did in some parts of chapter three and in section 7.2, we end up in a situation were, in my opinion, the morality of emissions trading have been provided with a suitable foundation. Thus, we have reached a wide reflective equilibrium.

It is on these grounds upon which I legitimate my opinion in favour of emissions trading systems, but it is also important to notice, when dealing with environmental problems we must look beyond the economic market for a vision to guide policy-makers. The concept of international CO₂-emissions trading is not the solution that we need to solve the problem of global warming. But, as long as there are a lack of alternatives, it is a mechanism that hopefully can cement future collaboration among the participants of the climate regime. Once alternatives have been found we may revalue the standpoints in favour of emissions trading. I totally agree with the people whom argue that we need to change our behaviours in fundamental ways if we are to save our environment. Perhaps, the greatest hope for our future are changed attitudes to the environment through education and evolving social consciousness. Were environmental concern will become encompassed in all our practices so much that they will be taken for granted. Such social changes, however, tend to come

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152 Ibid. P. 292.
153 Ibid. P. 289.
gradually, taking generations to achieve. Global climate change requires action now. It requires policy-makers, and all of us to take decisions that affect our world’s welfare and future.

7.4 Final remarks

Why has so little been achieved despite warnings, increased public environmental commitment and exhortations for businesses to “go green”? The answer lies in the complexity of the issue of global climate change: there is no quick fix. Every aspect of life of modern developed world seems to require the consumption of fossil fuels, and the most serious impediment to change is the perception that for increased economic growth there must be continuously rising energy consumption, and consequently increasing greenhouse gas emissions. It is my strong opinion that in solving the threats that the climate change is posing we have to keep all possible options open. The process of ethical inquiry and the method of wide reflective equilibrium can lead all of us to change our minds about what we think is right or wrong. We may begin with a clear view about what is right or wrong in a particular case and discover that we cannot sustain that view on a more careful consideration of other issues, relevant facts, and theories.

Some may argue that my justification of emissions trading systems is far too broad and disharmonious, mixing both deontological and utilitarian thinking, contract theory, and the ideas behind specification, with the notion of wide reflective equilibrium. But, Rawls and Daniels advanced reflective equilibrium as a model for how we may make progress in moral argument, where we have to accommodate initial disagreement on some moral judgements. In my opinion, the approach I have chosen in this study retain this attractive feature, because in my view, doing ethical inquiries may require doing many different kinds of things. Sometimes it may require doing many of them at once, and sometimes we can narrow our effort. As Daniels puts it “there is no one thing we do that is always central to solving an ethical problem for there is no one paradigmatic ethical problem”.154 The hard work in applied ethics lies not just in observations and diagnosis of the particular issue, but also in figuring out what counts as relevant moral reasons for handling specific situations the way we should. It has, for sure, not been my intention to draw up a comprehensive view on moral issues, like Kant’s or Mill’s, or to reduce principles of morality to principles of rationality. But, I hope my

study of the concept of emissions trading system has illustrated some of the ethical complexities regarding today’s environmental policy-making.

Finally, does the anthropocentric position, which permeates today’s policy-making concerning environmental issues, offer no safety or security for our environment? Well, perhaps it does, at least for the short term. After all, we as humans often acknowledge the importance of the environment’s resources, and as long as we do, then we make some trouble to keeping it intact. But, we will only do so on account of what the environment “do” for us, but if that is the reason for protecting the environment, its safety is hostage to our taste and modes of entertainment. A more promising answer to the strict anthropocentric thinking might be to attempt to dissolve the hard conceptual line that is customarily drawn between human beings and nature, and to challenge the implicit assumption that we can somehow physically detach the fate of mankind from the fate of nature. By assuming a more “ecosystemic” point of view, to regard ourselves not as masters of, but as citizens in the natural world, we may better come to clarify and perhaps even direct our moral responsibilities and conduct toward nature, and consequently toward future generations of mankind. Perhaps, this line of thinking could be the basis for “the new holistic ethics”, which is asked for in the UN documents concerning sustainable development.
References


Engels, A. (2001) *Company behaviour and market creation for CO2 emission rights in the US, the UK, the Netherlands and Germany: Early evidence and future research*


UN General Assembly Resolution 44/228,5.


**Appendix 1**

Annex B countries’ emission targets under the Kyoto Protocol as a percent of 1990 emissions.

<table>
<thead>
<tr>
<th>Country</th>
<th>Target</th>
</tr>
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<tbody>
<tr>
<td>Australia</td>
<td>108</td>
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<tr>
<td>Austria</td>
<td>87</td>
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<tr>
<td>Belgium</td>
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<td>Bulgaria</td>
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<td>Canada</td>
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<td>United States of America</td>
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Appendix 2


Opt-out: Although trading will start in 2005, individual installations or economic activities can be exempted from emission trading the final period 2005-2007. Opt-outs are however subject to approval by the Commission, on strict conditions. These notably include fulfilling the same emission reduction requirements as companies and installations participating in the scheme.

Opt-in: Member States can unilaterally include additional sectors and gases from 2008, subject to approval by the Commission.

Pooling: The agreement also provides for the possibility for companies to pool their emission allocations until 2012.

Allocation of emission rights: Allocations of emission permits will be free of charge, but Member States can auction up to 10% of allowances from 2008.

Penalties: the penalty rate foreseen for the period from 2005-2007 has been slightly reduced from 50€ per ton of CO2 equivalent emitted in excess of the allowances to 40€. It will be 100€ thereafter.