

NATURE, HUMAN NATURE AND VALUE

A Study in Environmental Philosophy

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Submitted to the University of Wales in fulfilment of the requirements of
the degree of Doctor of Philosophy

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ABSTRACT

The main concern of environmental philosophy has been to find value for nature. The thesis is an attempt to link a theory of nature, a theory of human nature and a theory of value, which Andrew Brennan stipulated for a viable environmental philosophy.

The problem is set forward in Part I where a definition of nature is explored. The complexity of the task leads to a brief history of the concept of nature (after a criticism of other historical accounts by three environmental philosophers) whereby two opposing explanations of nature and human nature are revealed: teleological and non-teleological.

Part II traces the decline of teleological explanation in favour of non-teleological explanations and the development of two main explanations of human nature in relation to nature that are prevalent today: Ultra-Darwinism (a reductionist explanation of human nature) and postmodernism. An analysis of these two positions shows that neither have an adequate metaphysics for finding value for nature, and this is revealed by an examination of two different types of environmental philosophy influenced respectively by the two opposing views.

In Part III the problem of values is discussed with particular emphasis on moral values. An argument for objective values based on objective knowledge is put forward as well as a theory of human nature which leads to the conclusion that teleological explanations link a theory of nature, a theory of human nature and a theory of value more satisfactorily than the non-teleological explanations of Ultra-Darwinism and postmodernism. The relevance of this conclusion to the problems of the environment is shown.

PREFACE

The subject of my thesis covers a broad area. It is the nature of such a broad overview that a selective approach needs to be taken, and so it was not possible to include all the major philosophers, as I would have liked. Often I had neither the space nor the time to pursue all the philosophical problems and arguments that arose. I hope my readers will be tolerant about the many paths that I have not taken because it was not possible in a thesis of this length to include everything that was relevant. I have read widely and could perhaps say that there is a lifetime of reading and exploring ideas behind the words I have written.

My main interest was in the third part of the thesis and particularly in the arguments for realism and objective value because of the importance of these concepts for a viable environmental ethics. I hope that at a future date I may be able to do further research in this area and tighten my argument. This thesis has led me to question further many of the philosophical problems I have come across. I have tried to obtain an answer to some of these problems, although of course it is the nature of these problems to be always somewhat elusive. In this way the completion of my thesis has not been for me an end, but very much a beginning.

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INTRODUCTION

Environmental philosophy as an academic discipline began in the mid-twentieth century after a century or more of writers, using various styles, had expressed their concern that a nature which was free from human interference was rapidly disappearing. The increase of industrialization across the world and an ever-expanding capitalist market eventually made it evident that the non-human world was being threatened as it had never been before. While it once had been assumed that the natural world was a never-ending resource, more perceptive people realized that what had always been taken for granted was no longer immune to human greed and human destruction. The natural world was no longer resilient in the face of the level of utilization of natural resources by humans across the world. For the last century the amount of literature written about environmental concerns has increased considerably.

The word 'environment' may be considered to have extended its meaning so that it no longer refers only to a local area, as in

'...the environment of this loch reminded me of Grasmere.'¹,

but now also has a global meaning. The entire geosphere with its hydrosphere, biosphere and surrounding atmosphere are all included in the meaning of the word

¹ *The Oxford English Dictionary*. 2nd edition. Prepared by J.A. Simpson and E.S.C. Weiner. Oxford:Clarendon Press, 1989. Vol. 5. p.315.

‘environment’. This extension of the meaning has been necessary because of the ability of humans to affect every part of the world through an increase of technological skills. In this thesis it will be assumed that the term ‘environment’ will be applied in this total way as in the ‘global environment’.

Ever since humans developed into tool-wielding animals they have inflicted change on the Earth. It is not that humans are the only animals to change the environment, for many other animals do also, but it is the extent and nature of that change which is important. With increasing technological skills humans have altered vast areas of the Earth’s surface. Humans and beavers build dams but the effect of humans’ construction on the environment is far in excess of anything that a beaver can achieve. The effects of human interference go beyond just the Earth’s surface. The atmosphere and the solar system have also been affected by human enterprise. If these effects were beneficial to the Earth then there would be no alarm, but a high proportion of the impacts of humanity on the environment are detrimental to the Earth, as well as being detrimental to humans themselves and their survival. An example of the extent of damage caused by human activity are the growing holes in the ozone layer, a result of the manufacture and use of CFCs and HCFCs, which allow more ultra-violet light through the atmosphere.

As concern grew for the environment so did the wish to correct the mistakes that had caused the concern. However, problems arose at this stage. At first this was a concern at the practical level and questions were asked about what should be done to prevent further damage to the environment. But with increasing disagreements the questions became more philosophical ones. The questions that were then asked were about why we should be concerned about the environment and,

ultimately, how we should regard nature. It was with these questions that environmental philosophy was born.

Before environmental philosophy became a bona fide academic subject there were already environmentalists who were beginning to tackle some of the philosophical problems in their writings. Aldo Leopold was a pioneer of environmentalism and his book *A Sand County Almanac* is often referred to in environmental literature. In his book he offers one of the first environmentalist codes:

A thing is right where it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.²

This statement was intended as a moral code for humans. However, it leaves out vast areas of human interrelationships and so does not qualify as a complete ethical code. In fact if followed strictly it would seriously conflict with many areas of human morality. It could even lead to the morally repugnant claim that we should kill a number of humans if that would bring about ‘...the integrity, stability and beauty of the biotic community’.

Environmental philosophers have seen a need to improve on our present ethical codes in order to take into account our behaviour towards the environment. This has developed into a branch of ethics called environmental ethics. Although some philosophers believe that the present ethical codes are adequate to include non-humans simply by extension, some have seen the need to create a completely new ethical code and even a new metaphysical explanation of the world arguing that all previous ethical and metaphysical descriptions were human centred or

² Leopold, A. *A Sand County Almanac: and sketches here and there*. Illustrated by C. W. Schwartz. New York: Oxford University Press, 1949. pp. 224-225.

anthropocentric. To avoid anthropocentrism philosophers have developed a form of ethics termed 'biocentric ethics'. Biocentric ethics refers to any theory that views life as possessing intrinsic value. Albert Schweitzer's 'reverence for life' principle is an early form of biocentric ethics:

The man who has become a thinking being feels a compulsion to give to every will-to-live the same reverence for life that he gives to his own. He experiences that other life in his own. He accepts as being good: to preserve life, to promote life, to raise to its highest value which is capable of development; and as being evil: to destroy life, to injure life, to repress life which is capable of development. This is the absolute, fundamental principle of the moral.³

For many environmentalists life is not a wide enough circle for moral consideration. These philosophers have argued for an ecocentric ethic. Non-living natural objects such as rivers and mountains should also be within the moral circle:

Ecocentric thinkers argue that biocentric approaches literally fail to see the forest for the trees. They claim that environmental concern for ecosystems and wilderness areas are not the same as concern for the individual trees, plants and animals that live within them. Wilderness areas, forests, wetlands, prairies, and lakes are valuable in their own right and deserve moral consideration.⁴

Ecocentric ethics relies on the science of ecology to determine morality. Within this explanation humans are one creature among many. The ecosystem takes precedence in any moral decision. Leopold's 'land ethic' is an ecocentric ethical theory as is the

³ Schweitzer, A. *Out of My Life and Thought*. Translated by A. B. Lamke. New York: Holt, 1990. p. 131.

⁴ Desjardins, J. R. *Environmental Ethics: an introduction to environmental philosophy*. 4th edition. Belmont: ThomsonWadsworth, 2006. p. 150.

ethical theory of J. Baird Callicott. Deep ecology also relies on the science of ecology for moral decisions. They are committed to the view that what is needed is an alternative philosophy to replace the dominant worldview and are concerned with changing people at a personal and social level. In this way deep ecology is a movement within the political and social realm as well as in the area of philosophy

Environmental philosophers have not only blamed anthropocentrism for the problems of the environment. Feminists have understood the problems of the environment to be caused by the aggressive dominance of the male. They believe that a more female caring approach to nature would solve the problems. Other philosophers view the cause of the problems to come from religious beliefs or from scientific approaches of objectivism and reductionism towards nature.

In the process of searching for an environmental ethic, problems in philosophy have appeared. One such problem is to find a place for objective values in nature:

A simpler more biocentric theory holds that some values are objectively there – discovered not generated, by the valuer.⁵

Philosophical problems, such as objective/subjective values and intrinsic/instrumental values have led to endless debates.

There are many different philosophical approaches on how to solve the problems of the environment, but as yet nothing which has really seized the imagination of the public and certainly no system of thought that has motivated people to act more in accordance with the needs of the environment. Although

⁵ Rolston, H. *Environmental Ethics: duties to and values in the natural world*. Philadelphia: Temple University, 1988. p. 116.

practical solutions are being found to some environmental problems nothing can be done really effectively without a coherent theory to underpin practical decision-making. As Andrew Brennan says in his introduction to *The Ethics of the Environment*:

...a philosophy is a general theory which explains or justifies actions, policies or positions...an environmental philosophy can be defined as a general theory linking humans, nature and values.⁶

Brennan then goes on to list the four components that he feels an environmental philosophy should have:

...a theory about what nature is and what kinds of objects and processes it contains; a theory about human beings providing some overall perspective on human life, the context in which it is lived, and the problems that it faces; a theory of value and an account of the evaluation of human action with reference to the two points above, and a theory of method.⁷

Brennan's first three theories need to be linked together in order to move to a theory of method. In this thesis I intend to examine what the connection is between nature, human nature and value and in this way hopefully clear some ground for the foundation of a coherent theory that will link at least the first the three components of Brennan's analysis. Only when this is done can we proceed to a theory of method.

⁶ Brennan, A. 'Introduction' in Brennan, A. ed. *The Ethics of the Environment*. Aldershot, Dartmouth, 1995. p. xv.

⁷ Ibid, p. xv.

PART I

NATURE

Introduction

In discussions about the environment our concept of nature and what is 'natural' is often called into question. Brennan suggests that environmental philosophy requires a theory of nature and what kinds of objects and processes it contains. Yet before we can proceed to a theory we need to find a definition of 'nature' and what is meant when this word is used in various contexts. Kate Soper in her book *What is Nature?* quotes Raymond Williams:

'Nature', as Raymond Williams has remarked, is one of the most complex words in the language. Yet, as with many other problematic terms, its complexity is concealed by the ease and regularity with which we put it to use in a wide variety of contexts.¹

As Soper rightly points out the combination of the ease with which the word is popularly used and its underlying complexity makes a precise definition impossible.

J.S. Mill made an attempt at a definition in his essay 'Nature' in *Three Essays on Religion*. He points out that the word 'nature' has gained so many connotations that it is difficult to reach a true definition without emotional bias. He says:

Nature, natura and the groups of words derived from them...

¹ Soper, K. *What is Nature? culture, politics and the non-human*. Oxford: Blackwell, 1995. p.1.

have thus become entangled in so many foreign associations, mostly of a very powerful and tenacious character that they have come to excite and to be symbols of feelings which their original meaning will by no means justify.²

The word 'nature' is elusive and heavily emotive. Mill makes an attempt to disentangle all the meanings.

In the *Shorter Oxford English Dictionary* the first definition is given as: 'The essential quality of a thing.' This is the definition Mill first looks at in his essay:

...what is meant by the 'nature' of a particular object? As of fire, of water, or of some individual plant or animal? Evidently the ensemble or aggregate of its powers or properties: the modes in which it acts on other things...and the modes in which other things act upon it.³

This is not the definition of 'nature' that is needed in environmental philosophy although it is a part of it. The 'nature' of an object is in some sense linked to the concept of nature at a broader level. John Habgood's account of this sense of 'nature' is:

To ask about the 'nature' of something is to ask what kind of thing it is, what are its essential characteristics...the nature of a thing is what is innate to it, what makes it what it is.⁴

Habgood gives another meaning for 'nature' which is the result of a generalization from the first meaning Mill gives. 'Nature' in this generalized sense can be

² Mill, J.S. *Three Essays in Religion: nature, the utility of religion and theism*. London: Longman, Green, Reader & Dyer, 1874. p. 3

³ Ibid. pp. 4-5

⁴ Habgood, J. *The Concept of Nature*. London: Darton, Longman and Todd Ltd., 2002. p.2

equivalent to 'logos' of the ancient Greeks, or the unifying force as in the pagan 'Mother Nature; or the 'Nature' of Stoic thought. It can also be thought of in terms of God, as within religious thinking, or the Laws of Nature as in science.

Mill gives a capital 'N' for his second definition of 'nature':

As the nature of a given thing is the aggregate of all its powers and properties, so Nature in the abstract is the aggregate of the powers and properties of all things. Nature means the sum of all phenomena together with the causes which produce them.⁵

'Nature' according to Mill's second definition is everything that there is, even beyond what humans can know or perceive. In a very wide sense this is true. There is nothing in the world that was not originally part of nature. Mountains, rivers and trees are obviously a part of nature. But under this all-encompassing definition so are houses, roads and nuclear power stations. These latter were made from materials that were originally in a natural state as a part of nature. Also included in this definition are humans. Humans are a part of nature: they are biological beings under the influence of physical laws. The word 'nature' can be used in this very broad sense to mean all that is in the physical world as opposed to anything supernatural or non-physical.

Clearly this definition of 'nature' is too wide to be used in discussions about the environment. In fact it is too wide for everyday speech. As Mill points out:

...it entirely conflicts with the common form of speech by which Nature is opposed to Art and natural to artificial.⁶

⁵ Mill, 1874. op. cit. p. 5

⁶ Ibid. p. 7

He goes on to say that there are:

...at least two principle meanings in the word 'Nature'. In one sense, it means all the powers existing in either the outer or the inner world...In another sense it means not everything which happens, but only what takes place without the agency or without the voluntary or intentional agency of man.⁷

When we especially talk about environmental problems we need to make the distinction.

Habgood shows that all these meanings of 'nature' have a common thread:

It seems to me that the common thread running through all meanings of nature I have been describing is a sense of givenness.⁸

We can accept Habgood's insight that the meaning of 'nature' in all its senses is 'the given', but we still have to decide what is purely given and what still remains as nature, 'the given', after some intervention from humans.

We may decide to treat 'nature' as meaning 'all that is or happens without the voluntary or intentional intervention of humans'. But if we choose this definition without exception we may find ourselves in the despair of Bill McKibben. In his book *The End of Nature* he writes that there is no more nature because everywhere we see the intervention of humans. Nothing is natural any more, he says. Even the

⁷ Ibid. p. 8

⁸ Habgood, 2002. op. cit. p. 14.

atmosphere has been changed by human agency so that the climate is unnatural. Bill McKibben has too strongly restricted the definition of 'nature':

...nature and human society are separate things. It is this separate nature I am talking about when I use the word 'nature'.⁹

His despair is over the fact that:

...we have ended the thing that has, at least in modern times, defined nature for us – its separation from human society.¹⁰

McKibben's definition seems to doom humanity to an artificial world. Perhaps because he is an American he is trapped within the concept of 'wilderness' or 'pristine nature':

One proof of the deep-rooted desire for pristine places is the decision that Americans and others have made to legislate for 'wilderness' – to set aside vast tracts of land where, in the words of the federal statute 'the earth and its community of life are untrammelled by men, where man himself is a visitor who does not remain'.¹¹

This may be a problem to Americans particularly because of their historical past. There were unexplored areas in America up to the comparatively recent past. The earliest environmentalists in America, like George Marsh Perkins, discussed environmental problems in terms of the destruction of the 'wilderness' and so the concern for American environmentalists became the restoration of pristine nature as it

⁹ McKibben, B. *The End of Nature*. London: Viking, 1990. p. 61

¹⁰ *Ibid.* p. 60

¹¹ *Ibid.* p.51

was before the arrival of Europeans. Holmes Rolston today frequently refers to 'wilderness' or to 'nature as wildness' in his book *Philosophy Gone Wild*:

Wilderness is the incubating matrix that served as the production site of the human race....Wildness does not merely lie behind, it remains the generating matrix.¹²

In England, however, the English countryside is referred to as 'nature' and yet there is no part of England that has not been altered by humans. The Lake District is particularly noted for its natural beauty, but its beauty is largely the result of farming for many centuries. The landscape of the downs and heathlands in England are completely the result of human intervention and need constant upkeep for them to be preserved as they are now. Not only has the vegetation been created artificially but the whole ecosystem, including flowers, butterflies and birds, has developed because of human intervention. The entire length of England was once covered with deciduous woodland, but this does not mean that that the hedgerows and fields and the wildlife that flourish there now are not nature. Criticisms of farming techniques today emphasize the difference between ancient forms of farming which worked with nature and those that appear to work against nature for its destruction. McKibben's definition would not allow the concept of humans working with nature nor would he be able to include humans as in some way a part of nature themselves. The land has been cultivated by Europeans for many centuries and we can still have a concept of nature. Nature can still be conceived as 'nature' even after interference from humans. So it is not possible to accept McKibben's definition of 'nature'. Nature cannot be

¹² Rolston, H. *Philosophy Gone Wild: essays in environmental ethics*. Buffalo: Prometheus Books, 1986. p.122

thought of as entirely separate from humans. This is an important point that Mill fails to reveal. If nature can still be nature after a certain level of human interference it is because humans themselves are a part of nature.

However, we come across a dilemma at this point for some human actions can be considered as a part of nature and some cannot. Human actions that are not a part of nature are considered to be a part of human culture. The problem whether humans are a part of nature or apart from nature is made evident here. At some level of interference we begin to believe humans are not a part of nature, for whatever level of interference non-humans have with nature, as when termites construct tall mounds, we still consider their actions to be a part of nature. This is not the case for humans. The nature/culture distinction is an important one:

Both distinctions presume that there are certain ways in which humanity can – and indeed must – be counterposed to the rest of nature. The distinction between the natural and the artificial, for example, implies that there is a type of productive activity or creativity that is exclusive to human beings. Humanity, that is, has seen itself as differing from the rest of nature in virtue of the fact that it both reproduces and produces, or, if preferred, in virtue of the fact that it creates both natural and artificial ‘products’. For while other living beings both produce in the sense of reproducing themselves and create objects (nests, webs, hives etc), the latter have been denied the status of artifice precisely because they are viewed as instinctual and undeliberated, as the necessarily determined ‘product’ of their nature.¹³

Human actions that are a part of culture are not instinctual, but are voluntary actions of humans that are undetermined by their nature, quite distinct from the rest of nature. However, it is a difficult line to draw between those actions of humans that can be classified as a part of culture in opposition to nature and those actions that are not

¹³ Soper, 1995. op. cit. pp. 37-38.

deliberately in opposition to nature, but rather are aiding nature, such as the care of woodlands.

To return to McKibben's strict definition of nature where only pristine nature is termed as true nature we can counter with a European's concept of nature which is not so pristine. In fact the word 'wilderness' would invoke a sense of a place that was useless and to be avoided. It must not be forgotten that until the last century wilderness would be dangerous. It is a luxury of modern technology that nature need not be viewed as hostile but in more positive terms. Technology may have destroyed the close relationship of humans to nature, but it has also allowed the leisure and comfort to be able to appreciate nature for itself. The closeness of humans to the land was always ruled by the need of survival and life was often harsh. Only in highly developed societies have humans had the time to reflect on how people should relate to nature and not been guided by survival alone. Nature, as 'wilderness' or 'the other' has an attraction for us now because we no longer fear it. We can delight in the lives of non-humans because they are no longer a threat to us. In fact, we are reassured these days by their existence because they provide us with a different perspective on our own lives. Their lives are so free from all the difficulties we encounter in a highly complex society.

Nature need not be understood only as pristine nature that has not been touched by humans. Cultivated fields, gardens and parks full of trees can also be regarded as nature. Nevertheless the concept of a pristine nature can be useful. It can be a guideline for the level of intervention by humans that is acceptable. Robert Elliot deals with the problem of restoring nature in his philosophical articles, 'Faking Nature'. He compares the restoration of nature to the reproduction of a piece of

artwork. Neither have the same value as the original. It is the origin of each that gives them value:

Origin is important as an integral part of the evaluation process.¹⁴

Elliot reveals the problem of restoring nature. We may wish to restore nature but has it then lost its original value? Can restoration be natural or is it always artificial? Only with a concept of a pristine nature or of natural processes without the intervention of humans can the problem of how to restore nature be resolved.

Bearing in mind the above reflections, my definition of the word 'nature' will be 'all that is except where the level of human interference is such that the term 'culture' would be more applicable'. This is not an entirely satisfactory definition as it leaves open to debate in some areas if the term 'nature' or the term 'culture' should be applied. The areas of particular uncertainty are within domestic breeding, genetic manipulation and agriculture. I need to have an open definition because of the complexity of the term 'nature'.

It may seem foolish to even attempt a definition. Kate Soper, in fact, evades a definition altogether as she feels that the task of systematically analysing a precise definition might not prove rewarding. She says:

But tempting as it might seem, in view of the conceptual imprecision of ordinary talk of 'nature' to want to police the term...,there are a number of reasons to resist the move. In the first place talk of the countryside and its natural flora and fauna may be loose, but it still

¹⁴ Elliot, R. 'Faking Nature' in Elliot, R. *Environmental Ethics*. Oxford: Oxford University Press, 1995. p. 88.

makes discriminations that we should want to observe between different types of space and humans use of it. If ordinary discourse lacks rigour in referring to woodlands and fields, the cattle grazing upon them, and so forth, as 'nature', it is still making an important distinction between urban and industrial environment.¹⁵

Soper suggests that we should approach these terms in a Wittgensteinian way and not attempt to specify how they should be employed, but explore:

...the way in which they are actually used.¹⁶

According to Wittgenstein as Soper interprets him:

The philosophers' task, suggested Wittgenstein, was not to prescribe the use of terms in the light of some supposedly 'strict' or essential meaning but to observe their usage in 'ordinary' language itself.¹⁷

Soper follows this type of philosophical analysis. But there is a major fault with this type of analytical style of philosophy. It is useless to examine 'ordinary' usage of words at this time when we are having a crisis in the understanding of what we mean by the nature that we refer to by using the word 'nature'. We can no longer sit back and observe and analyse the usage of ordinary language. When we come to the world of real problems, particular those of the environment, in order to make decisions about practical matters we need to be sure what we are meaning when we use the word 'nature'. What are we referring to? Individuals may use the word in a number of

¹⁵ Soper, 1995. op. cit. p.20.

¹⁶ Ibid. p. 20.

¹⁷ Ibid. p.20.

ways and in the practical world these different meanings cause mammoth problems. So it is not the philosopher's task to look at the usage of words but to attempt to find the underlying concepts that people hold that lead to the ambiguities that occur in the use of words. My own definition above, as loose as it is, is an attempt to give a more controlled meaning to the word 'nature' and the major part of my thesis will be exploring further our present concept of nature and what we mean by 'nature'.

The word 'nature' is further complicated by the fact that we often use it not only in a descriptive sense but also in a normative sense. 'Nature' used in a normative sense is highly ambiguous according to whether nature is seen as benevolent and the source of all goodness, or malevolent and 'red in tooth and claw. When taken in the latter sense, the control of nature is to be applauded, for example in the areas of agriculture and medicine. Control of nature in farming and preventive medicine helps lessen famine and disease. Nature untamed is destructive. In the former sense when nature is perceived as good, to go against nature would be wrong, as in cosmetic surgery or foot binding. These practices can be condemned as 'not as nature intended'. The excessive use of fertilizers and pesticides are upsetting 'the balance of nature' and so can also be condemned as against nature, where nature is seen as 'knowing best'. The ambiguity of the normative sense of nature is seen in the two intellectual movements of the 18th century – the Enlightenment and romanticism. These two intellectual movements developed from two concepts of human nature. Human culture was seen either as a corrective to nature, or as repressive to human nature and alienating humans from nature:

Broadly speaking, we can say that one provides the animating idea of the Enlightenment, the other of the Romantic reaction to its economic and social consequences. In releasing humanity from a Deist conception of the order of Nature as hierarchically fixed or

Providentially designed to secure the 'best of all possible worlds', the Enlightenment sought to realize the inherent dignity of the individual as a self-motivating rational and moral being: the progressive development of art, science and culture is this viewed as the vehicle for the realization of 'human nature' previously held in thrall to superstitious fears of 'nature' and theological bigotry. In the Romantic reaction, which is profoundly influenced by Rousseau's summon to attend to conscience as the 'voice of nature' within us, the integrity of nature is counterposed to the utilitarianism and instrumental rationality through which the enlightenment ideals were practically realized and theoretically legitimated: the point is not to return to a past primitivity, but to discover in 'nature', both inner and outer, the source of redemption from the alienation and depredations of industrialism and the 'cash nexus' deformation of human relations.¹⁸

Nature can be interpreted as something we need to overcome in order to express our true human nature, or it can be viewed as that which we need to discover in order to free our true human nature. This normative aspect of nature is more fully expressed in its related term 'natural'.

When we come to use the term 'natural', as in 'natural processes', we are met with many more problems than with the word 'nature'. 'Natural' is more frequently used within human cultural situations than the word 'nature'. Human behaviour can be described as 'natural' or 'unnatural'. What do we mean by 'natural'? Chambers Dictionary gives a wide range of definitions including 'produced by nature', or 'according to nature'. This brings us back to a definition of 'nature' but the use of 'natural' brings in more complications with its normative use. 'Natural' can be defined to be a part of Mill's second definition of nature. What is 'natural' is not the work of humans and this reflects Mill's definition of 'nature' as 'not by the agency of man'. This is a positive use of the word 'natural' as it is in opposition to the more negative word 'artificial'. A natural forest is more valued than an artificial forest. But

¹⁸ Ibid. p. 29.

‘natural’ can also mean ‘without adornment’ and may take on more negative connotations as where the natural is opposed to civilizing influences. ‘Natural’ may then be thought of as applying to the rough and ready as opposed to those things that have more refinement.

The use of the word ‘natural’ becomes more complicated in areas where humans interact with nature. Such problems occur when we consider cultivated nature, as, for example, cultivated flowers in the garden that are neither natural nor yet artificial. They are not artificial as flowers that are made of silk or paper, but they are not natural in the sense of ‘not the work of humans’. There is the same problem when we consider, once again, the English countryside. The fields and neat hedgerows are not artificial, for they are not pretending to be something else, nor are they artefacts. They are natural but involve the intervention of humans. The problem becomes even greater when we consider selection of crops for agriculture and the breeding of domestic animals. Once again, they are neither artificial nor are they artefacts, but their characteristics and even their existence are entirely the result of human interference. The question arises whether a cow or a chicken is a natural animal. To a certain extent they are human creations. Recent developments in genetic manipulation make this question even more problematic. I will define ‘natural’ in a similar way to ‘nature’, as ‘all that is except where the level of interference from humans is such that the terms ‘unnatural’, ‘non-natural’, ‘artificial’ or ‘cultural’ are more applicable’. As with the term ‘nature’ there are certain areas where it is difficult to decide whether we should apply the term ‘natural’ or ‘cultural’ etc.

Throughout this chapter there is the underlying ambiguity of whether humans can be understood as a part of nature or apart from nature. We can have a concept of pristine nature but we must also take into account the interaction of humans with

nature because we are a part of nature. It is the level of this interaction that becomes central to the arguments and also the type of interaction. We cannot understand ourselves as entirely a part of nature because we need to discriminate between 'natural' and 'artificial', between 'natural' and 'cultural' and between 'wilderness' and 'cultivated'. But we cannot place nature as entirely opposed to us or we will then understand ourselves as apart from nature and fail to take into account the level of interaction we need with nature. Fruit and vegetables are a part of nature but they need to be cultivated to a certain level to be beneficial to humans. Coppiced woodlands, downlands and low-intensity agricultural can still be a part of nature although they have a certain level of human intervention.

The problem that recurs in discussions about environmental problems is the level of human intervention, whether it should be limited when it appears to be doing harm to the environment or whether it should be increased as in conservation programmes. Always at the heart of these discussions, although rarely acknowledged, is the metaphysical problem of how we understand ourselves in relationship to nature: are we just biological animals and therefore all our actions part of nature so our use of nature is justified, or are we apart from nature and all our actions towards nature must be judged as interference? How far are humans separate from nature? Are humans a part of nature or apart from nature? It is this paradoxical question that underlies many arguments about the environment. When we are questioning what we mean by 'nature' we are also asking questions about ourselves. And when we ask how far we are a part of nature we also question how far we want to be a part of nature and if nature is good or bad. Questions about nature are questions about ourselves as well as questions about values.

Chapter 1

A History of the Concept of Nature

In order to understand more fully our present concept of nature it may be illuminating to attempt a history of the term 'nature'. The question that needs to be asked is 'how did people in the past think about nature?' or even 'how did people in the past relate to nature?' By unravelling the history of the term 'nature', difficult as this may be, we may be able to understand how we conceive and relate to nature today.

Often confusions arise in discussions where opponents have not understood that they are using the same word in different ways because they have derived its meaning from different conceptions (and I use the term 'conception' in the sense of an action or faculty of forming a concept.) This is particularly true of the words 'nature' and 'natural' because of their frequent use. The word 'nature' relies on the underlying concept of what we regard as nature. Our conceptions of nature have come into being through our relations with nature, whether these are for the sake of survival or through the act of contemplation. Eventually a concept of nature is fully formed. A history of the concept of nature may help to define the term 'nature' more clearly so that in discussing environmental problems we can be confident that we are all using the same terminology and employing a shared concept.

This task is extremely difficult if not impossible. History is always an uncertain discipline and is too often accused of being pure interpretation. Trying to research the history of the concept of nature may be the most difficult area of history, but as there have been many environmentalists who have looked to history to explain the present problems it seems important to review some of the interpretations that

have been put forward. In some of the earlier works in environmental philosophy writers have assumed that there was a 'Golden Age' that has been lost, and blame the present environmental problems on various events, whether real or imaginary, from the past. Carolyn Merchant blames the rise of male dominance and industrialization (a result of this male dominance in her theory) as destroying the harmonious relationship between humans and nature that once existed in the past:

The ancient identity of nature as a nurturing mother links women's history with the history of the environment and ecological change. The female earth was central to the organic cosmology that was undermined by the Scientific Revolution and the rise of a market-oriented culture in early modern Europe. The ecology movement has reawakened interest in the values and concepts associated historically with the premodern organic world...

In investigating the roots of our current environmental dilemma and its connection to science, technology, and the economy, we must reexamine the formation of a world view and a science that by reconceptualizing reality as a machine rather than a living organism, sanctioned the domination of both nature and women.¹

Merchant presents environmental problems as a result of science and technology as well as the growth of capitalism, all three labelled as 'male' activities that favour the oppression of nature and the female.

Lynn White believes the problems of the environment date from Middle Ages as a result of the doctrines of the Christian church. Christianity, according to White, had a particular attitude towards nature that allowed the introduction of new technology for agriculture. This was in the form of a more sophisticated plough as

¹ Merchant, C. *The Death of Nature: women, ecology and the scientific revolution*. London: Wildwood House, 1980. pp. xvi-xvii

opposed to the old scratch plough. It demanded a different type of approach to agriculture:

Thus, distribution of the land was based no longer on the needs of the family but, rather, on the capacity of a power machine to till the earth. Man's relation to the soil was profoundly changed. Formerly man had been part of nature; now he was the exploiter of nature.²

White introduces here the separation of humans from nature. As exploiters humans are no longer a part of nature. White blames the rise of Christianity for this separation because within Christian doctrine there is the assumption of a dualism – man and nature:

Christianity, in absolute contrast to ancient paganism and Asia's religions...not only established a dualism of man and nature but also insisted that it is God's will that man exploit nature for his proper ends...³

Ancient paganism, according to White, had a different relationship to nature:

At the level of the common people this worked out in an interesting way. In Antiquity every tree, every spring, every hill had its own genius loci, the guardian spirit. These spirits were accessible to men, but were very unlike men; centaurs, fauns and mermaids show their ambivalence. Before one cut a tree, mined a mountain or dammed a brook, it was important to placate the spirit in charge of that particular situation and to keep it placated. By destroying pagan animism, Christianity made it possible to exploit nature in the mood of indifference to the feelings of natural objects.⁴

² White, L. 'The Historical Roots of Our Ecological Crisis'. In Barbour, I.G. ed. *Western Man and Environmental Ethics: attitudes towards nature and technology*. Reading: Addison-Wesley, 1973. p.23.

³ Ibid. p.25.

⁴ Ibid. p.25.

But Thomas Berry believes that it was civilization that was the cause of all the problems with the environment. He believes that there was a 'primordial harmony' before civilization and that civilization in itself, even before the ascent of Christianity, separated humans from nature:

Our earliest human documents reveal a special sensitivity in human intellectual, emotional and aesthetic responses to the natural world...In its beginnings human society was integrated with the larger earth community composed of all the geological as well as biological and human elements. Just how long this primordial harmony endured we do not know beyond the last hundred thousand years of the Paleolithic period. Some ten thousand years ago, the Neolithic and then Classical civilizations came into being. It must suffice to say that with classical and general literate civilizations of the past five thousand years, the great cultural worlds of the human developed along with vast and powerful social establishments whereby humans became oppressive and even destructive of other life forms. alienation from the natural world increased...⁵

There are two questions that immediately spring to mind when reading Berry's account of human alienation. The first is the link he makes assuming that there is a connection between humans becoming alienated from nature and environmental problems. However, it could be the case that humans were not alienated from nature but environmental problems still occurred. It is not unknown for wild animals to overpopulate an area and cause great damage to the surrounding environment. The first question is about what makes humans alienated from nature (as Berry concludes) while other creatures are not. The second question is whether there ever was a 'primordial harmony'.

⁵ Berry, T. 'The Viable Human'. in *ReVision*. Vol. 16 (2) 1993. p. 53.

These three writers illustrate the use of historic interpretation and a concept of humans alienated from nature to support their arguments: Berry blames civilization itself for today's environmental problems; White blames the rise of Christianity; Merchant sets the date for humans' separation from nature at a later date, after the rise of science. Merchant, like many other environmentalists that accuse science as being the cause of the problems, portrays Francis Bacon as the main instigator of the new destructive order:

The fundamental social and intellectual problem of the seventeenth century was the problem of order. The perception of disorder, so important to Baconian doctrine of dominion over nature, was also crucial to the rise of mechanism as a rational antidote to the disintegration of the organic cosmos. The new mechanical philosophy of the mid-seventeenth century achieved a reunification of the cosmos, society and the self in terms of a new metaphor – the machine.⁶

Merchant, by placing the alienation of men from nature with the progress in science in technology, has her 'Golden Age' pre-dating this time. Humans were in harmony with nature in the Middle Ages, a time when Christianity was at its height in Europe:

Basic to the agrarian ecosystem of premodern Europe was the relationship between the peasant community and the land...Cooperation and interdependence maintained the health of the ecosystem.⁷

She praises the medieval theories of an organic society although they were in the main based on a Christian understanding of the world:

⁶ Merchant, 1980. op.cit. p. 192.

⁷ Ibid pp.43-44.

The medieval theory of society thus stressed the whole before the parts, while emphasizing the inherent value of each particular part. The unity of the one was of higher value than the objectives of the many. The connection between the parts was integrated through a universal harmony pervading the whole. This organic cement bound together the macrocosm, the community, and the parts of each individual being or microcosm...

The organic society was to be modelled on nature's prime examples of communal colonies – bees and ants. Civil life should imitate nature, as exemplified by the political constitution of the bee. All workers must join together in common to produce welfare for the whole and sweetness in the honey while the queen superintends.⁸

This directly conflicts with White's insistence that Christianity destroyed the balance between humans and nature.

These three theorists have very different views as to what was the major cause of environmental problems. Did these arise with the growth of science in the seventeenth century; with the rise of Christianity in the Middle Ages; or after the beginning of civilization much further back in time? The one common theme from these differing accounts is that at some point in the past humans became alienated from nature and in this way began to understand themselves as apart from nature. The suggestion is that humans should not be alienated from nature but should be a part of nature. All three accounts beg many questions about the relationship of humans to nature and therefore I shall try to assess all three claims before proceeding to a history of the concept of nature in the next chapter.

Berry claims that there once was a 'primordial harmony' between humans and the rest of nature. He dates this time as before civilization. This is the most difficult area of history because there are no written accounts and we can only acquire

⁸ Ibid. p.71.

any knowledge of human behaviour through archaeological records and possibly by studying simpler societies of today. An archaeologist writing about Stone Age hunters in the British Isles gives this caution about his discoveries:

...we have seen how archaeologists attempt to reconstruct human behaviour from its material remains, which constitute the archaeological record. This record is subject to many distortions, only some of which arise from human behaviour, while others may be considered more as natural processes. It is one of the tasks of the archaeologist to establish in what ways the record has been distorted so that this may be allowed for in reconstructions of the past. Inevitably, the need to make such allowances imposes limitations. However, a relatively incomplete, but soundly based, reconstruction is to be preferred to one which, although more complete, does not bear close scrutiny because it is based on insufficient evidence.⁹

Later he reiterates the complexity of trying to uncover the behaviour of ancient peoples from archaeological records:

The archaeological record is created by the actions of human beings but...by the time the archaeologist comes on the scene, the evidence for those actions has become distorted in a number of ways. Natural processes may have disturbed or destroyed some of the evidence and the evidence itself has usually accumulated over a period of time and is not the residue of a single event.¹⁰

He shows the same reservation about being able to reconstruct the past from the ethnographic record. Simpler societies of today that appear to live in ancient ways inhabit areas that must have demanded the continuation of a hunter-gatherer life-style as well as now being affected by modern societies of today:

⁹ Smith, C. *Late Stone Age Hunters of the British Isles*. London: Routledge, 1992. pp.38-39.

¹⁰ *Ibid.* p.41.

To begin with, today's hunter-gatherers live in marginal, atypical environments, and it seems questionable to use the deserts of southern Africa and central Australia or the circumpolar zone as a source of analogy for temperate, mid-latitude Europe. North America is a more appropriate source of analogy but the hunter-gatherers of this region have been subject to several centuries of influence from settled, farming societies of both American and European origin.¹¹

It appears that there is such scanty evidence available for trying to construct how ancient peoples used to live trying that we can hardly obtain an accurate enough picture to claim whether they lived in harmony with nature or not.

However, Berry makes the claim that:

In the beginning human society was integrated with the larger life society and the larger earth community composed of all geological as well as biological and human elements.¹²

Other environmental writers make similar claims. For example Peter Marshall states:

The harmony of nature has been destroyed by dominating and meddling humanity in the last tens of thousands of years, a fraction of evolutionary time. The natural condition of humans and all beings require no artificial rules or laws. It is the laws that have been the cause, not the remedy, of the prevailing social and ecological crisis...¹³

There are large assumptions in both these accounts. In Berry's account we need to question what he means by 'in the beginning' when referring to human society and whether it is true that there is a 'natural condition of humans' which requires 'no artificial rules or laws' as Marshall claims. In order that Berry's

¹¹ Ibid. p.21.

¹² Berry, 1987.op.cit. p. 53.

¹³ Marshall, P. *Nature's Web: rethinking our place on earth*. New York: Sharpe, 1996. p.446.

assumption can be validated we would have to find a time that was the beginning of human society. If we accept the present consensus concerning evolutionary theory then humans evolved from a common ancestor in the same way as other animals and most recently from ape-like creatures. Our nearest relatives today are the non-human primates. Paleoanthropologists are, however, uncertain when human society began:

...the ancestry of human society and the evolution of cultural traditions remain predominantly the domain of 'general theorists' working from comparative studies of fossil morphologies, of modern foragers and of living non-human primates.¹⁴

In other words, the ways of obtaining information about the beginnings of human society are very uncertain. The interpretations of these 'general theorists' are open to question and the conclusions drawn can, at most, only be probable. The assumption that modern foragers and living non-human primates resemble past early man could immediately be questioned. It may be that modern foragers have continued in their more simplistic form of living because they are in those regions of the world where it has not been necessary to evolve to a more complex way of interacting with the environment. In that case they could not be entirely similar to ancient foragers who sought out their living in environments with more opportunities for development. There is really no evidence to enable us to arrive at a conclusion. If it is so difficult to ascertain when human society began and what it was like, then the claims of Berry and Marshall cannot be accepted.

Perhaps Berry and other 'primordial harmony' environmentalists are referring to a time when humans were more ape-like than human. Humans would then be a

¹⁴ Steele, J. and Shannon, S. 'Introduction' in Steele, J. and Shannon, S. eds. *The Archaeology of Human Ancestry: power, sex and tradition*. London: Routledge, 1996. p.9.

part of nature in the way that the other higher primates are today. But this would not be a viable argument because we are talking about the particular way in which humans interact to form a human society and to create a culture that differentiates them from other higher primates. 'Culture' is a word that was first designated to humans specifically and only later applied to some non-humans when we were seeking similarities between them and ourselves. It is culture that differentiates us from nature. The defining criterion of 'human' is when humans are separated from non-humans by their culture and this immediately implies some distancing of humans from the rest of nature.

The beginning of 'culture', however basic, may be equated with the beginning of human society. This would be a more complex concept than just to be speaking of social interactions as we may do about non-human apes. Various paleoanthropologists regard the beginning of 'culture' as happening at the time when humans began making stone tools that indicate a more sophisticated form of thinking than had appeared in non-humans. The archaeologist cannot ascertain the intellectual ability of early humans directly, but only indirectly through the discovery of stone tools. It is the sophistication of these tools that can give an indication of how far first humans had developed beyond non-humans and, this is what may be thought of as the beginning of culture:

We must recognize that we can never directly ascertain the symbolic Capacities of our earliest ancestors – for the first three million years Of our genius we must gauge 'intelligence' by measuring changes In the size and shape of hominid skulls and bodies and by finding Stone tools and the remains of other objects used by our ancestors. These indirect reflections on evolving symbolic ability constitute 'culture' for the anthropologist in an analytical sense.¹⁵

¹⁵ Wenke, R. J. *Patterns in Prehistory: humankind's first three million years*. 4th edition. Oxford: Oxford University Press, 1999. p. 98.

We think of human society as consisting of much more than a basic ‘culture’ of tool-making, but the archaeological record only provides the remains of the ancient tools for us to judge what level of sophistication early humans had attained. The question is whether humans had gained a social sophistication before the making of the tools or not until much later. The primitive human was already bipedal before tool-making appears in the archaeological record, but it was with tool-making that certain styles of behaviour appeared which brought about what we would now term a human society and along with it ‘culture’:

‘Humans the toolmakers...’ –this phrase has served to distinguish the earliest toolmaking humans from other primates of the day –their ability to manufacture tools, a clear sign of that uniquely human attribute, culture. Other animals like chimpanzees make tools to dig for grubs or other specific purposes, but only people manufacture artefacts regularly and habitually as well as in a much more complex fashion. We have gone much further in the toolmaking direction than other primates. One reason is that our brains allow us to plan our actions more in advance.¹⁶

Other animals use tools but it is the sophistication of the tools made by humans and how the tools help them to change their environment combined with a growing brain capacity and erect posture that separate them from other animals. Other animals can change their environment, as can beavers when they build dams. Some creatures can cause widespread devastation to their environment, as do swarming locusts. But it is the forward planning in the making of the tools and in the changing of their environment that appears to be most significant about the difference

¹⁶ Fagan, B.M. *World Prehistory: a brief introduction*. 4th edition. New York: Longman, 1999. p. 53.

between human behaviour and that of other animals. What makes this behaviour different in kind rather than degree is the extent of the planning that appears to go beyond immediate response. If this is the case then human society begins when humans start to change their environment with premeditated planning and not just to satisfy immediate needs. 'Culture' is the result of humans adapting and changing their environment. This casts doubt on Berry's claim that in the beginning 'human society was integrated with the larger earth community'. If the beginning of human society was when humans began to forward-plan to control their environment then that also was the time when humans were no longer integrated with the rest of nature in the way we would consider non-humans were integrated. In other words, humans become what we call 'humans' because of the extent to which they control and change their environment.

So how does this lead us to understand what Berry and other writers have thought of as a 'primordial harmony' that existed between humans and the rest of nature? The dictionary definition of 'harmony' is as follows:

Harmony: combination or adaptation of parts, elements or related things, so as to form a constant and orderly whole; agreement, accord, congruity.¹⁷

'Harmony' implies many parts fitting together as a whole. Berry and Marshall are thinking of nature as being something made of several parts that, when integrated, or in harmony, make up a whole in the sense of making something complete. The word 'harmony' has the added sense of 'agreement in relation'. Thus to be disharmonious is to be in disagreement or lacking in congruity. Environmentalists like Berry and Marshall assume that there was a previous harmony when humanity was in full

¹⁷ *The Oxford English Dictionary*. 2nd edition prepared by J.A. Simpson and E.S.C. Weiner. Oxford: Clarendon Press, 1989. vol. III.

agreement with nature, but that we have now lost it. As already shown it is very difficult to have any evidence for this claim. Perhaps we could look at nature without humans to see what could be meant by this 'harmony', as the claim is that humans have now destroyed it.

The Earth has been estimated to be over 4,000 million years old. The geological record can tell us something of the Earth's past before the arrival of humans, but again we are in the area of pure theoretical suppositions. The geological record however does seem to show that the Earth has had a turbulent history: land has been formed and destroyed; continents have drifted; sea-levels have risen and subsided; species have flourished and then become extinct. In the Burgess Shale in Canada geologists have found evidence of a massive extinction that marks the end of what has been called the Precambrian era. Most species of that era were exterminated. Afterwards new and different species began to evolve. Shelled marine animals flourished in the Cretaceous period when there was a high percentage of warm shallow water. Later sea-levels rose so that these ecological niches were not so numerous and consequently the numbers of shelled marine animals diminished. As every child knows, dinosaurs dominated the Earth for millions of years and then suddenly became extinct. The history of the Earth does not show harmony in the sense of parts fitted together to make a whole. Many species have been lost and living things have been anything but in harmony with one another. There has always been a constant changing and adaptation of species throughout the Earth's history. Even over shorter periods of geological time, say within a particular climatic era, the mix of species does not live entirely in constant harmony. There may be times of relative stability where a number of species may co-exist in some balanced way, but even these times have their fluctuations.

Harmony, within environmental literature, may be interpreted as ‘ecological balance’. ‘Harmony’ implies a static situation whereas ‘ecological balance’ allows for some change:

Ecological balance is a kind of stability or persistence that is attained through counterpoised forces.¹⁸

Holland explains that although Darwinian thought revealed the natural world as an open-ended historical process, within any set period of time and particular location an appearance of ecological balance, or stability, can be found in nature. There are various controls on individual species, such as food, disease and predators, but a balance of some kind between species can be achieved which gives a degree of stability. Perhaps harmony within nature can be understood as this type of ecological balance. Holland’s ecological balance involves species being integrated into the whole (a whole being an ecological system). But species cannot be seen as being in full agreement in any of the relevant senses that the concept of ‘harmony’ would imply. If we are to understand the natural world as in ecological balance, the term ‘harmony’ seems to be inappropriate.

Further to this argument, understanding nature in terms of ‘ecological balance’ has been questioned since the widespread rejection of providential ecology within a theological explanation. Without a concept of providence, nature seems to be more about disturbance than balance:

The abandoning of providential ecology appears to mean that ecological balance can no longer function as an indispensable

¹⁸ Holland, A. ‘Ecological Balance’ in Chadwick, R. ed. *Encyclopaedia of Applied Ethics*. Vol. 2. London: Academic Press, 1998. p.2.

explanatory assumption but itself stands in need of explanation.¹⁹

According to a new account of nature, disturbance and a certain amount of chaos also have their place. Nature is a mixture of co-operation and disruptive elements. There is the co-operative behaviour in the relationship between flowering plants and their pollinators, but there is also the competitive element of the survival of the fittest, as well as entirely disruptive events as in naturally occurring forest fires. All play their part in the whole. In this way, ecological balance can be seen as a very precarious state of nature. So much of nature is dynamic and forever changing. Nature viewed in this way is not consistent with a concept of harmony.

There is thus much to doubt about the claim that there was once 'primordial harmony'. Evidence is limited on deciding categorically when human society began, and human society and culture seem to be synonymous with the time humans developed beyond living spontaneously in response to basic needs. Neither can nature be perceived in any way as in harmony.

Some environmentalists have claimed that the North American Indians lived in harmony with nature:

They lived in comparative harmony with the natural world, following the cycles of nature and developing a subtle and profound understanding of their surroundings.²⁰

¹⁹ Ibid. p.12.

²⁰ Marshall, 1996. op.cit. p.138.

However, there is doubt in this, as what is known about the North American Indians has arisen since they have been a suppressed nation. It does not appear to agree with other information about the lifestyle of these people:

That Amerindians lived 'in harmony with nature' continues to be asserted despite the blatant differences between such 'Amerindians' across the continent...and despite archaeological evidence of massive buffalo drives and the anthropological [sc. evidence] of casual cruelty.²¹

It would appear from many archaeological records that humans have always exploited the environment at whatever level they could. This is true of the Stone Age hunters of the British Isles. The archaeological records suggest that bands of hunters needed to move seasonally from place to place because they used up the resources wherever they stayed:

The hunters of the Late-glacial Interstadial may have followed a pattern of residential foraging, in which the whole band moved on as resources became depleted.²²

Foraging until an area is depleted of resources is not a description of people living in harmony. This is still exploitation even if it is at a low level. To perceive ancient peoples as living in harmony with nature is a romanticizing of the past. 'Romantics' have always looked back to a 'Golden Age' and many have seen ancient peoples as proof of this previous harmonious time. Each age appears to develop some nostalgic dream of a previous age, far enough away in time that a fantasy can be woven. The fantasy consists of a time when humans lived peacefully with all other creatures:

²¹ Clark, S.R.L. *How to Think About the Earth: philosophical and theological models for ecology*. London: Mowbray, 1993. p.25.

²² Smith, 1992. op. cit. p.167

Long ago, or far away, romantics tell us, people were unselfconsciously united with their world. Nineteenth century romantics liked to think 'the Greeks' were like that; late twentieth century ones locate the fantasy in old Europe or amongst native Amerindians.²³

It is unlikely that there was ever such a 'Golden Age' except in people's minds.

There may have been a time when humans did not take more from the Earth than the natural balance could cope with, but this was probably more from lack of technological skill than from any wish to live in harmony with nature. Humans would have needed the scientific knowledge we have today to have known about the ecological balance of any area. Presumably humans have always lived at the level that they best could achieve in any area.

To look back in nostalgia or to try to re-create some fictional past is of no help to our problems today. To pretend there was some 'Golden Age' which disappeared at some point in time and to blame all environmental problems on that particular point in time seems to be highly misleading.

The word 'harmony' proves to be an inappropriate one to use in reference to nature. Within nature there is a certain amount of co-operation as well as competition. Even though there may be times of ecological balance nature contains moments of chaos and disruption. If nature itself is not in harmony then it cannot be expected that humans live in harmony with it. One could concede to those environmentalists who perceive a time of greater harmony between nature and humanity that humans may at one time have been living in a less destructive way towards nature than now.

²³ Clark, 1993. op. cit. p.13.

Other environmentalists claim that it was not civilization in itself that brought about the destructive nature of humans but the Christian religion. According to Lyn White the axioms of the Christian religion still dominate humans' behaviour today and their destructive attitude towards Nature:

...we shall continue to have a worsening ecological crisis until we reject the Christian axioms that nature has no reason for existence save to serve man.²⁴

The claim is made by many environmentalists that Christianity, with its links to Judaism, placed humans in a superior position over nature and thus encouraged them to dominate nature and destroy it. Deep ecologists, wishing to change the attitude of humans at a fundamental level, claim that these religions cause humans to be alienated from nature. This is an argument against all the inherited traditional assumptions that underlie our present attitudes to nature. Christianity is again rebuked for encouraging humans to think of themselves as superior to the rest of nature and thus causing them to be arrogant in their attitude towards other species. Other writers, notably Robin Attfield, have offered arguments to prove that these accusations against Christianity are quite unfounded. I shall not go into the details of these arguments now, as I shall be looking at Christian attitudes to nature at a later part of this thesis. Suffice to say that in the Gospels there is little to indicate that Jesus recommended total domination over nature. In fact, in one famous passage he indicates that in some things nature is superior to humans:

Consider the lilies of the field, how they grow; they toil not, neither do they spin; and yet I say unto you, that even Solomon in all his glory

²⁴ White, in Barbour, 1973. op. cit. p.29.

was not arrayed like one of these.²⁵

In fact the basic message of Christianity, like all major religions, is a plea to cease from human greed, to leave behind worldly possessions and to turn to the things of the spirit often aided by the contemplation of the living world. In both Judaism and Christianity nature is created by God and therefore should be treated with respect and awe, and I will be looking later at some of these religious ideas about nature. For the moment I shall examine the claim that humans had a better relationship with nature before the rise of Christianity.

Again we need to refer to archaeological and historical evidence as well as ethnological research that can often be misleading. It appears true that ancient peoples had a connection to nature that we have no longer. If we can accept the evidence from ethnological studies of people who until recently lived in a similar way to ancient peoples as being valid then we can see some reason to believe in this connection. The totemic system reveals humans as having a strong identification with non-humans. The anthropologist, A.S. Elkin, gives a definition of totemism as applied to aboriginal Australians in the following way:

Totemism is more than a mechanism for regulating marriage
A view of nature and life, of the universe and man, which
colours and influences the Aborigines' social groupings
and mythologies, inspires their ritual and links
them to the past. It unites them with nature's activities
and species in a bond of mutual life-giving...
A relationship between a person, or group of persons
and (for example) a natural object or species as part of nature
imparts confidence amidst the vicissitudes of life.²⁶

²⁵ Matthew 6 v. 28-9 in The Bible. Authorized version. Editor: J. Stirling. London: The British & Foreign Bible Society, 1954.

²⁶ Elkin, A.P. *The Australian Aborigines*. 3rd edition.. Sidney: Angus and Robertson, 1954. p.133.

There have been many theories as regards totemism, such as those of Levi Strauss and Durkheim, but it is enough to assume that totemism in some way links humans to nature:

Probably we do well simply to say that totemism is yet another example of man and nature linked in a single religious pattern.²⁷

Among such people as the Australian aborigines and some Africans, there are tales that uphold this belief in the unity of humans with the animal world. A similar but more sophisticated view of this closeness to nature is seen in the tales of Ancient Greece that were eventually recorded in Ovid's *Metamorphoses*. The famous tale of Apollo and Daphne, in which Daphne is changed into a laurel tree, is typical of these stories:

The story is one of the many folk-tales concerning the conversion of mortals into trees which Ovid has so gracefully elaborated in his *Metamorphoses*, and which assumes a new importance now that we can trace them back into that old world when tree and man and indeed all living things were held to be so near akin. It is sufficient for us that they demonstrate the survival of very ancient modes of thought amongst races who had otherwise reached a high degree of civilization.²⁸

The close identification humans had with nature still lingered in the myths of ancient Greece and Rome. The ancient Britons also appear to have had a close identity with

²⁷ Ferguson, J. *Gods Many and Lords Many: a study in primal religions*. Guildford: Lutterworth Educational, 1982. p.9.

²⁸ Philpot, J.H. *The Sacred Tree: or the tree in religion and myth*. First published in 1897. Facsimile reprint. Felinfach: Llanerch, 1994. pp.77-78.

nature and this has remained, surprisingly enough, in some folk rituals that are continued today in England. I am thinking particularly of *Jack-in-the-Green* who appears every May Day morning in Oxford. A person parades the streets of Oxford very early in the morning covered in leaves:

Beltane (end of April/beginning of May) was the Celtic festival traditional to invoking and enlisting the aid of the tree spirit and occurs throughout Europe at about the same time. The Maypole represents the transplanting of a special tree in the village area, but the Maypole was once a living tree, brought into the village with its dryad. The dryad was called upon to help the village and ensure an abundant harvest. Later this became a Maypole, and the tree spirit was symbolically represented by a mummer or player who usually dressed in green, wore a mask of woven branches or a suit of plaited boughs. This character was called the Green Man or Jack in the Green.²⁹

Nature was often seen as benevolent and the seat of gods. Trees were often seen as homes for the gods and evidence for ceremonies concerning worship of trees is found throughout the ancient world:

Very frequently, especially in early times this home or haunt of the god was a tree; his ceremonial worship was conducted beneath its shadows and the offerings of his worshippers were hung upon its branches or placed at its foot, or again a table by its side, and assumed thereby to have reached the god.³⁰

The positive aspect of this association of gods with trees was that some trees became sacred and thereby became a place to take sanctuary because of the benevolent god residing there:

²⁹ Kindred, G. *The Sacred Tree*. Nottingham: Glennie Kindred, 1995. p.6.

³⁰ Philpot, 1994. op. cit. p. 25.

However little benefit the votaries of trees and images derived from their observances apart from the subjective strength and solace that flow from every act of worship, there was at least one tangible service the gods could render them – the right of sanctuary and asylum. For the sacred tree, sharing as it did in the protective power of the indwelling deity, offered an inviolable refuge to the persecuted, and the god's forgiveness to the sinner who implored it.³¹

Ancient peoples venerated trees and often there were sacred groves. An example of sacred groves can be found in Celtic Britain. The evidence for these groves leads some environmentalists to assert that ancient people respected nature more than we do today and that our lack of respect is due to the introduction of Christianity. Ronald Hutton admits that superficially it appears that there is evidence for ancient people having respect for nature:

The Roman authors Lucan and Pomponius Mela wrote of Gaul as worshipping in groves of trees, and Tacitus and Dio Cassius attributed the same practice to the British... Pagans all over Europe venerated certain groves of trees as sacred. The Romans believed that all natural things were associated with spirits which had to be respected, while the Irish Celts believed that every district was under the protection of a goddess, whose custody of the land had to be honoured. Christians on the other hand taught that the whole natural world had been given into the dominion of humans and cut down the old sacred groves.³²

However, Hutton also points out that this first impression is soon revoked when archaeological and historical records are examined more closely:

The followers of Christ may have felled the groves, but they sanctified many springs in the name of their own faith and they stopped the slaughter of huge numbers of animals in the course

³¹ Ibid. p.49.

³² Hutton, R. *The Pagan Religions of the Ancient British Isles: their nature and legacy*. Oxford: Blackwell, 1991 p. 252.

of rituals.³³

Although we can hold that humans identified closely with nature in pre-Christian societies and that nature was often viewed as benevolent, this is not the whole story. Early societies had to survive in environments about which they had little knowledge. Seed-time and harvest were important to them. Unfavourable weather conditions at planting or at harvest would prove disastrous and so certain rituals were carried out in order to secure a successful harvest, rituals that are now known to have nothing to do with the success or failure of a crop. Presumably, before there were settled farmers, hunters would have similar rituals to ensure a successful hunt and there is some evidence for this from ethnological studies. These rituals indicate that humans were fearful of their lack of control of the environment. In many early societies there were beliefs that mischievous spirits might destroy all their labours and ruin the harvest. Such fears are illustrated in the behaviour of tribal societies of today such as the Dasun of North Borneo:

The Dasun of North Borneo are an agricultural people, dependent on the rice harvest, and it is natural that many of their ceremonies are directed to securing this. These ceremonies are directed to protecting the crops against blight and other attacks by mischievous spirits, protecting the community from the results of offences they may have committed, and propitiating the rice souls. This we might call the spirit of the rice.³⁴

Environmentalists often forget today how science and technology have freed us from the uncertainty and fear that haunted humans for centuries in the face of nature. In many societies peoples' relationship to nature was in the form of

³³ Ibid. p.252.

³⁴ Ferguson, 1982. op. cit. p. 50.

propitiation of harmful spirits. Rituals of appeasement of evil spirits or propitiation towards the gods have come down to us today in the folk festivals of modern Europe, although most of them have lost their original meaning. An illustration of this type of tradition is once again that of the Mayday celebrations held in Oxford every year. Originally these celebrations were for the securing of fertility and abundance for the coming year. They were a form of propitiation for the spirits of the Earth. As mentioned before, trees were often seen as the abodes of these spirits and so trees were worshipped in order that the spirit would give its blessing:

The gods or spirits of those far-off times had their habitation, or at least manifested their activity, in the tree. The gifts of rain and sunshine were in their hands. They made the crops to grow, the herds to multiply and women to give increase... Eventually the ceremony of carrying the branch around the village, the primitive purpose of which was to make each house a sharer in the benevolent offices of the tree-spirit, degenerated into a meaningless observance, a pretext for indulging in festivities. But there can be no doubt that the securing of fertility and abundance together with the supply of rain and sunshine necessary therein, was originally the root idea of the world-wide spring observances.³⁵

These spring observances, although initiated by fear of evil spirits, were in many respects harmless. However, sometimes the gods required the ultimate gift for appeasement. This was sacrifice. Even those who wish to perceive humans of earlier societies identifying with other living beings have to accept that this identification did not prevent the people of those societies from committing the wholesale slaughter of animals. Early societies killed for food but sacrifices demanded the death of many animals. Sometimes the sacrifice had to be human. The ancient Celts, together with other contemporary peoples, sacrificed humans as well as animals:

³⁵ Philpot, 1994. op. cit. pp. 153-154.

Unlike the Mediterranean world, both classical and Christian, where religious ceremonial was largely conducted in the stone-built temples and churches and cathedrals of ecclesiastical architecture - the Celts had practised their rituals, which were firmly believed to have involved human sacrifice, amid the organically sculpted cathedrals of forest and mountain. Most of their sanctuaries were simple clearings by way of human architecture, at most perhaps a timber-built shrine. These forest sanctuaries were out-of-the-way places where Druidical rites could be held in secrecy, away from the prying eyes of would be suppressors. In the first century A.D. Tacitus described the animal sacrifices of the forebears of the Germanic Alamanni which took place in a sacred wood: seven centuries later Abbot Pirman found it necessary to speak out against local propitiatory rites of prayer and magic still carried out in the same forest clearing.³⁶

In these earlier societies gifts were given to show respect for another. The best were offered to the gods and a sacrifice was often seen to be the best gift. Fear led to wholesale killing and even murder. Evidence of sacrifices can be found throughout the world amongst these earlier societies including the North American Indians as well as in the East. Sacrifices were particularly evident in the late Vedic period of India:

The maintenance of the cosmic order was now seen as being dependent on the due and proper performance of the sacrificial ritual... Since prosperity and good fortune were believed to be dependent on the sacrifice, a threatened scarcity of cattle or food would lead to an increase in the number of sacrifices offered and in aggressive activity on the part of the warriors. Success in the latter enterprises also required sacrificial offering beforehand so there would be further reason for increasing the frequency of sacrifice.³⁷

³⁶ Douglas, A. *The Beast Within*. London: Chapman, 1992. p.76.

³⁷ Ling, T. *A History of Religion East and West: an introduction and interpretation*. London: MacMillan, 1968. pp. 50-51.

The lack of control humans had over the environment resulted in fear and belief in the supernatural. Everyday life involved using strange rituals to ward off 'evil spirits'. This does not suggest that humans in these earlier societies lived more in harmony with nature. It gives a picture of more alienation than we have today when we can enjoy the things of nature without fear.

Furthermore, there is evidence that ancient people had just as great a disposition for destroying and manipulating the natural world as humans have today. In Britain alone there is evidence for humans wilfully damaging the environment throughout the Mesolithic, Neolithic and Bronze Ages. Hutton describes the Mesolithic Age:

Once again, humans responded to the alteration of their environment not merely by adapting to it but by challenging it. They domesticated the dog and used fire to remove woodland on a larger scale than before. Where the natural ecosystem was fragile, the trees never grew back as the people moved on, and heaths and bogs came into being. In the clearings they created, humans seem to have penned, if not bred, cattle and deer.³⁸

The picture Hutton gives us of earlier societies' attitude to nature is not one of 'let beings be'. Nor is it one opposed to domination of nature. It is much more likely that humans have always exploited nature as far as their technology would allow them. If there were less damage done to the environment before Christianity then it would simply be the result of low populations (kept low by disease and famine) and less advanced technology. Environmental damage was happening long before Christianity across the whole of Europe and parts of Africa too:

³⁸ Hutton, 1991. op. cit. p.14.

...the Iron Age Celts in what became England may have had their holy stands of trees, but that did not stop them from clearing virtually all the large areas of forest spared by their predecessors, especially in the midlands. Under the pagan Roman empire, the remaining woods were stripped from much of the North African coast, producing an ecological catastrophe when most of the ploughed up soil was washed into the Mediterranean. It seems to have been the same period that the lion was exterminated in Europe, the elephant and the hippopotamus in North Africa and the bear in England. Christianity was absolutely irrelevant to the process.³⁹

When studying the lifestyle of earlier societies it may at first appear that humans at those times lived more harmoniously with nature than we do today. However, this is to overlook the fear that was often behind their every action towards nature and also that they were not adverse to changing their environment sometimes to the great harm of other species. From the knowledge we have of their ritual and belief systems they evidently felt a need to control their environment in whatever way they thought might have an effect. This often involved sacrifice. It is no coincidence that Christianity, being a more intellectual approach to spiritual matters, was a background in which science could eventually flourish and humans could begin to control the environment in a more productive way without the use of empty superstitions:

Science is possible only because we live in an ordered universe which complies with simple mathematical laws. The job of the scientist is to study, catalogue and relate the orderliness in nature not to question its origin. But theologians have long argued that the order in the physical world is evidence for God. If this is true, then science and religion acquire a common purpose in revealing God's work. Indeed it has been argued that the emergence of Western scientific culture was actually stimulated by the Christian, Judaic tradition, with its emphasis on God's intentional organization of the cosmos – an organization which could be discovered by the use of rational scientific inquiry.⁴⁰

³⁹ Ibid. pp. 252-253.

In other words, first comes the concept of a divine intelligence that gives order to the world before the concept that the world can be understood by searching for the laws underlying that order. It cannot be denied that science has helped humans to be able to live healthy, fulfilled lives without the fear of famine and disease.

Further, it is also no coincidence that within Christian doctrines the Christ was seen to be the final sacrifice to end all sacrifices. Christianity brought with it the abolition of all irrational fears and emptied nature of its 'evil spirits' that needed to be appeased. Both Christianity and science have been able to diminish the fears of 'everyman' and this positive aspect of them both should not be forgotten.

Merchant accuses science of destroying an organic, female concept of nature and developing a cold, mechanistic one. There may be some truth in this interpretation, but it tends to forget that science has improved the standards of living for both male and female. Science, which has done so much to improve the material situation of so many people, cannot be blamed for environmental problems. The problem must be in the way we use science; and the way we use science rests within a metaphysical background of how we understand nature and our relationship to it. The myths that humans before civilisation, Christianity, science or industrialization, lived more harmoniously with nature should not be accepted. We need not accuse any past events for our present problems.

It is more important to discover the reason why humans are not motivated to solve the problems of the environment now and this may be because of our present concept of nature. What is our concept of nature now? I shall now look at the history of the concept of nature in order to answer this question. Because this is a thesis in

⁴⁰ Davis, P. *God and the New Physics*. London: Penguin Books Ltd. , 1990. p.144.

philosophy I shall be researching into the intellectual thinkers of previous times and the concepts of nature they present in their writings. The assumption is that in the main intellectual thinkers reflect the attitudes of the societies in which they find themselves, as well as being influential in the moulding of those attitudes. It is presumably a two-way process.

Chapter 2

Ancient Greece and Rome

1. Teleological Explanations of Nature

I will start my investigation into the history of the concept of nature with the ancient Greeks and Romans. The close identity of humans to non-humans is shown within the myths of Ancient Greece. Ovid's *Metamorphose* gives a more sophisticated account of tales that had appeared in various forms in ancient civilizations. The accounts of the metamorphosing of human to nonhuman indicate that the belief existed that humans and non-humans were closely connected.

From archaeological records it is also evident that the Greeks and Romans had respect for nature. They believed that deities inhabited specific features of the landscape:

Rivers had gods, springs had nymphs called naiads, and lakes had limniads. There were oreads for mountains, napaeae for valleys, and leimoniads for meadows.¹

There were also sacred places which were dedicated to a god, and sometimes a temple was built there. Romans inherited much of the religious attitude towards nature from the Greeks, but an agricultural element was added so that there were gods and goddesses for the spirit of every major growing crop, such as Ceres for grain, Liber for wine etc.

Yet in spite of their propensity to reverence wild places and natural processes, the people of the Ancient World continued the environmental damage in the same

¹ Hughes, J.D. *Pan's Travail: environmental problems of the Ancient Greeks and Romans*. Baltimore: John Hopkins, 1996. p.49.

way as earlier societies. There was the clearing of land for agriculture; overgrazing by cattle, sheep, goats and swine; growing urbanization and deforestation, often followed by erosion and siltation. The damage done was often irreversible:

Much more permanent and damaging was the de-vegetation of steep slopes by logging and grazing and their resultant vulnerability to rains, which are often torrential in the Mediterranean winter. Erosion swept away fertile soil, leaving rocky slopes where trees could scarcely have grown even if they had been protected. Silt, sand and gravel from the mountains was deposited in lowlands and along the coasts, choking ports and creating poorly-drained, silt-clogged marshlands. Deforestation, over-grazing and erosion produced the most visible, far-reaching and relatively permanent changes in the Mediterranean landscape of all those caused by human activities in ancient times.²

This dual attitude towards nature, on the one hand showing reverence towards it and on the other being destructive, was also evident in the ancients' treatment of wildlife. Wild animals in sanctuaries were preserved as sacred to the gods and to kill them incurred punishment. But at the same time this did not exclude other animals from being hunted both for food and pleasure. Many wild animals were killed in the Roman arenas, for example.

The clearance of land for agriculture also had its effect on the populations of wildlife. Lakes and marshes were drained and forests cut down. Greeks and Romans continually exploited wildlife as if there would always be plenty to replace those animals they destroyed. Unfortunately the exploitation of wildlife had irreversible consequences as species were made extinct. Domesticated animals such as goats and cats were in competition with natural species as well as destroying the vegetation on

² Ibid. p.90.

which they depended. The result was depletion and extinction of wildlife and an impoverishment of the environment.

Mining and urbanization were polluting factors as much as they are today:

Air pollution resulted not only from wood and charcoal smoke, but also from the fumes of various noxious substances that were heated or burned. Speaking of metallurgists in Spain, Strabo observes: *They build their silver-smelting furnaces with high chimneys, so that the gas from the ore may be carried high into the air, for it is heavy and deadly.*³

Accounts from ancient Greece and Rome reveal that there were no reservations at that time about the exploitation of nature. Certainly domination over nature and exploitation of wildlife was well established long before Christianity influenced people. Urbanization and civilization did not change this exploitation but it did change people's awareness of it.

As with many other areas of knowledge, the complex attitude we now have towards nature has its roots in ancient Greece and Rome. Many of the ideas found in environmental writings today were first expressed in Ancient Greek writings, including nostalgia for a 'Golden Age'. In this thesis I cannot attempt to look at this area in any depth but must necessarily offer only generalizations of major themes of ancient times.

Habgood traces back the three main meanings for the term 'nature' (as outlined in the introduction to this part of my thesis) to the Ancient Greeks. For the first definition of 'nature' meaning 'the character or quality of something' the Greeks used the word 'phusis' which had a similar meaning to the Latin 'natura'. This term in

³ Ibid. pp.105-106.

its generalized form (which is the second meaning of 'nature') was the study of natural philosophy, 'that which makes everything what it is'.

Whatever the precise reasons, the Classical Age began the search for intellectual coherence and the concept of Nature as a unifying force, an energising ground of things, was one way of expressing the intelligibility of the universe. It becomes possible to talk about Nature doing this or that, or even to personify it, as in the phrase 'Mother Nature' which clearly has religious overtones...At a still later stage the idea of Nature as somehow underlying reality or cause of things could undergird the concept of the laws of nature, whether scientific or moral.⁴

The third meaning of 'nature' is simply the entire physical world and the Greeks seemed to have been the first to give the same name 'physis' to the whole of physical reality, as well as to the unifying power which they saw as underlying that reality and the particular character of each part of it.

The concept of nature at any time is closely intertwined with cosmology, theology and metaphysics. Concepts of nature involve all aspects of humans' awareness of themselves in the cosmos. The inevitable question of why there is what there is brings in problems of creation and a divine purpose:

If we seek after the nature of God, we must consider the nature of man and the earth, and if we look at the earth, questions of divine purpose in its creation and the role of mankind on it inevitably arise.⁵

The Greek and Roman concept of nature evolved from those of the primordial Mediterranean world. In ancient belief systems the Earth was perceived as a mother.

⁴ Habgood, J. *The Concept of Nature*. London: Darton, Longman and Todd, 2002. p.4.

⁵ Glacken, C. *Traces on the Rhodian Shore: nature and culture in western thought from ancient times to the end of the eighteenth century*. Berkeley: University of California Press, 1967. p.35.

Nature was then understood to be about fertility and about caring and giving in abundance. Philo the Jew gives a view of the background to Greek and Roman thought on nature:

Philo the Jew, living in the rich mixture of Hellenistic Alexandria at the beginning of the Christian era, saw this already old conception clearly and believed in it. Nature has bestowed on every mother as most essential endowment teeming breasts thus preparing in advance for the child that is to be born. The earth also, as we all know, is a mother, for which reason the earliest men thought fit to call her 'Demeter', combining the name 'mother' with that of 'earth', for as Plato says earth does not imitate women, but women earth. Poets quite rightly are in the habit of calling earth 'All-mother' and 'Fruitbearer' and 'Pandora' or 'Giveall', inasmuch as she is the originating cause of existence and continuance in existence of all animals and plants alike. Fitly therefore on earth also, most fertile of mothers, did Nature bestow, by way of breasts, streams of rivers and springs, to the end that both the plants might be watered and all animals might have abundance to drink.⁶

However, not all of nature was depicted as kindly in these ancient myths. The gods of Greek mythology were personifications of nature and they could be either kindly or threatening. They acted wilfully for their own amusement, often adding misfortunes to the lot of humans.

The dual aspect of nature of being either kindly or wild and threatening is later expressed in more reasoned accounts of nature. Often accounts will emphasize either one or the other aspect of nature. Linked to these two ideas is the further dichotomy of order and chaos. Nature is perceived either as an organized harmonious whole, or a chaotic system happening by chance. This particular confusing aspect of nature is reflected in the pre-socratic writers.

The Ionian philosophers are considered to be the first philosophers. They can also be considered as the first scientists. Their approach to understanding the world

⁶ Ibid. p.14.

around differs in certain respects to mythological explanations. They leave behind the stories of wilful gods and explain the world through experience and reason. In their accounts of the cosmos we can take 'nature' to be 'all that is' as in the third definition of 'nature'. One of the major concerns of these first philosophers was the apparent chaos of nature. But in a chaotic system nothing can be known for certain: all events are random. The Ionian philosophers sought for order in the chaos, a pattern, a rule, an underlying 'something' that could help to make sense of everything, or at least provide a means of knowing with more certainty:

They looked for something permanent persisting through the chaos of apparent change; and they thought that they would find it by asking the question: *What is the world made of?* The world as our senses perceive it seems restless and unstable. It exhibits continual and apparently haphazard change. Natural growth may proceed or may be thwarted by blind external forces...Philosophy started in the faith that beneath this apparent chaos there exists a hidden permanence and unity, discernible if not by sense, then by mind.⁷

In their rudimentary scientific search for an explanation or cause of nature the later Greek philosophers came across a major metaphysical problem: was the universe an ordered living whole or was it the outcome of random mechanical events?:

...throughout their philosophy of science we may discern a preoccupation with the question how much, if at all, it is appropriate for the rational investigator of the universe's inhabitants and processes to seek to explain them in terms of the ends, goals and purposes they subserve. Is the universe a complete structure, unified by the way in which the various functions of its parts are conducive to its overall operation (is it, then, as Plato and the Stoics believed, a kind of animal, and under the direct control of God)? Or is it merely the functional outcome of an agglomeration of initially random and undirected mechanical particular interactions (as the Atomists were to argue)? Or is there, as Aristotle held, some coherent, middle way

⁷ Guthrie, W.K.C. *The Greek Philosophers from Thales to Aristotle*. London: Routledge, 1989. p.24.

between the view that the cosmos is the work of God on the one hand and the purely mechanistic physics of chance on the other? Can Nature itself, intrinsically, exhibit a type of purposiveness which serves to explain its regularity and stability without appealing to some super-intelligence.⁸

These two distinct approaches to explaining nature divide the Greek philosophers into those who accepted a teleological explanation of nature and those that gave a non-teleological explanation. The acceptance of a teleological explanation or a non-teleological explanation of nature influences and changes the concept of nature significantly. I shall first deal with those philosophers who were led by their processes of thinking to a teleological explanation of nature.

The Ionians solution to the problem of finding permanence in the chaos was to suggest that nature was made of one basic substance. Thales suggested water and Anaximenes air. Anaximander had a slightly different approach and suggested the 'apeiron' – the boundless or unlimited. From the 'apeiron' all things came. What is interesting in these early philosophies is that the thinkers were first aware of chaos, of illusion and change. In order to explain the world they sought an underlying something. They were the first scientists because they wanted to find the basic truths about the world in terms of which an account of it can be structured. In general a scientific explanation will pick out those more fundamental facts about the structure of the universe on the basis of which things can be explained. Science is inherently reductionist and the Ionians tried to 'reduce' the complexity of world to one basic substance which could be the explanation for everything else. In this way they could find some order with which to understand the world. This search for hidden order has

⁸ Hankinson, R. J. *Cause and Explanation in Ancient Greek Thought*. Oxford: Clarendon Press, 1998. pp. 5-6.

been the goal of science. The success of science rests on the assumption that there is some order to be discovered if there is to be any knowledge at all. Experience of the fickleness of nature that controlled the lives of humans, as represented by the gods of ancient Greece and other civilizations, led to this need to find order and to assume there was an order to find.

Pythagoras moved away from the search for an underlying substance to the assumption that the essence of real identity of a thing is not determined by the stuff of which it is made, but by its structure. Geometrical structures – the abstract shape of things – seemed to answer all the awkward questions that the Ionian philosophers could not deal with in their theories of matter. The form, or pattern of things, seemed to provide better answers. Mathematics led the Pythagoreans to the idea of perfect harmony within the cosmos. Pythagoras applied his discoveries in the field of acoustics to other areas of nature and the history of science has shown this to have been an useful insight. Often it is the underlying pattern that helps towards understanding how the world works, for example in atomic physics or in the basic building blocks of living things such as proteins. The Pythagoreans turned their discovery into a mystic belief: the cosmos was one of order, perfection and beauty.

Through Heraclitus' work comes the idea that knowledge cannot be obtained only through the senses but must be linked to reason. The only factor in the world not subject to change is the Logos, an objective overall controlling force which determines the nature of the world. The world can only be known as far as the souls of humans are part of the divine Logos. The Logos is supreme reason, a divine law for everything in the world to follow:

This *logos* holds always but humans always prove unable to understand it, both before hearing it and when they have first

heard it. For though all things come to be in accordance with this *logos*, humans are like the inexperienced when they experience such words and deeds as I set out, distinguishing each in accordance with its nature and saying how it is. But other people fail to notice what they do when awake, just as they forget what they do while asleep. (*Sextus Empiricus. Against the mathematicians* 7.132 = 22B1)⁹

Those who understand the Logos can understand the workings of the cosmos, but not everyone can do so if locked into the illusions of change. The Stoics were influenced by Heraclitus' physics and metaphysics. Heraclitus' philosophy presents the world as one that is composed of intelligible processes which humans are capable of understanding. Reason is required to understand the world beyond mere appearances.

Anaxagoras also claims that the senses are misleading. Knowledge is possible only through the understanding contributed by the Mind. Mind, or Intellect, sets everything in order:

The rest have a portion of everything, but Mind is unlimited and self-ruled and is mixed with no thing, but is alone and by itself... For it is the finest of all things and the purest, and it has all judgment about everything and the greatest power. And Mind rules all things that possess life – both the larger and the smaller. *Simplicus, commentary on Aristotle's Physics*. 164.24-25; 156.13-157¹⁰

These early philosophers saw the need for order if there was to be any understanding of the world about them. They related this order to mind and intellect and assumed that there must be some supreme mind that first gave this order.

Plato also believed that this order was not imposed by us but was an underlying necessity of nature. Trapped in our senses, he believed that the order is

⁹ Curd, P. ed. *A Presocratics Reader*. Indianapolis: Hackett Publishing Company, 1996. p.30.

¹⁰ *Ibid.* pp.56-57.

not always obvious to us, but that it is an important aspect of nature and it is our duty to try and understand it. The senses confuse us so we can only find the order through the use of our intellect. If the intellect is so important to discover the order, Plato argues, then the natural world must be ordered by intelligence. The outline of his theory is in the dialogues *Phaedo*, *Timaeus*, *Republic* and *Laws*.

According to Plato's theory originally there was disorderly material but this was gathered up into kinds. The state of the natural world without the ordering would be chaos, so that we would be unable to make sense of it. Plato assumed that there had always been matter but that at some time it must have been ordered and this ordering cannot have been arbitrary but, being rational, had to be an intelligible necessity.

For a thing to be rationally ordered, it must be possible to see that it had to be ordered like that. If I arrange things in one way, then my choice of arrangement is arbitrary and not rational. Therefore, the order which is imposed, the kinds that there are and the relation between them, is an order which has to be – not products of the ordering, or its disposition would be arbitrary and not rational, but intelligible necessities given as much to the supreme mind which orders as to our minds which try to understand.¹¹

Although Plato believed that the original chaos was now ordered he also held that the natural world does not conform perfectly to the order imposed upon it. It is like a clock that has run down and so has lost some of the original order:

We live in a running down phase, and that means that the universe as we know it 'remembers', but only imperfectly, the original divine order.¹²

¹¹ Crombie, I.M. *An Examination of Plato's Doctrines: II. Plato on knowledge and reality*. London: Routledge & Kegan Paul, 1963. p. 154.

¹² Ibid. p. 155.

In this way Plato could account for the immediate chaos that nature presents to the senses and the ability for humans, through the use of reason, to find the original order. His epistemology requires this underlying order which can be discovered through reason; otherwise no certain knowledge is possible.

Plato inherited the mathematical discoveries of Pythagoras. Pythagoras sought to understand the world through his knowledge of mathematical forms. Plato further developed this idea with his theory of Forms. The theory of Forms applied to all parts of nature. Form or structure, not matter, was therefore what really constituted the nature of things. But:

...Form is not perceptible like the things that go to make up the natural world; it is intelligible.¹³

It was inevitable that from this thinking Plato should discredit knowledge obtained through perception. Within his theory perceptible things could not be real because they were subject to change; they were illusory. The unchanging Form or Idea was the object of true knowledge. Reality is beyond what we can perceive and can only be obtained through the intellect:

It is for Plato a proof of the unreality of things which go to make up the natural world that they are liable to change: not merely that they can be changed by the action upon them of external forces, but they change of themselves and thus show themselves to be inherently transitory...

If Plato calls the sun unreal, he does not mean that when we say 'There is the sun' there is in fact nothing there at all; what he means is that the thing which is really there does not possess firmly and unconcealedly the qualities which when we call it the sun we

¹³ Collingwood, R.G. *The Idea of Nature*. Oxford: Clarendon Press, 1945. p.54

think it to possess; these qualities it only enjoys for the time being; they are not its inalienable property; we think they are but we are deceived.¹⁴

Knowledge was possible because there was an order in the universe to be found. If there was no order, or pattern, there would be nothing certain to know and we would be victims to our unreliable senses.

Looking for order within the cosmos led the Greek philosophers to the concept of a designer. For them order within nature also meant beauty and harmony and they concluded from this that there must be a creator or, at least, a designer. The Greeks mainly held that there had always been matter, but they argued that if there is order in nature then there must be a mind, or some being, that had given that order. The Pythagoreans perceived nature as permeated by an intelligent mind as did Diogenes of Apollonia:

Intelligence is required, he said, for the underlying substance 'so to be divided up that it has measures of all things – of winter and summer and day and rain and wind and fair weather'. The argument is based on the weather and seasonal and diurnal change.¹⁵

That intelligence is required within the cosmos appears also in Plato's philosophy. In the *Timaeus* Plato argues that nothing comes into existence without a cause and that therefore everything that exists must be caused ultimately by a 'creator'. Plato gives an explanation for why the divine craftsman made the universe:

Let us therefore state the reason why the framer of this universe of

¹⁴ Ibid. pp.56-57

¹⁵ Glacken, 1967. op. cit. p.39.

change framed it at all. He was good, and what is good had no particle of envy in it; being therefore without envy he wished all things to be as like himself as possible. This is as valid a principle for the origin of the world of change as we shall discover from the wisdom of men, and we should accept it. God, therefore wishing that all things should be good, and as far as possible nothing be imperfect, and finding the visible universe in a state not of rest but of inharmonious and disorderly motion, reduced it to order from disorder, as he judged that order was in every way better.¹⁶

The 'creator' is good and therefore has no envy. He wishes that everything should be good. It is not that the 'creator' creates matter but that he is an organizer, working with pre-existing materials. The world is good because it exhibits structure and order, the attributes of Mind or intelligence. The Greeks were fascinated by the way their own intellect could make sense of the world around them. If using their intelligence enabled them to find order then, they reasoned, the order must be put there by an intellect in the first place. There could not be order without intellect to create it. Furthermore Plato believed that the 'creator' had given intelligence to the world but this was only possible if the world has a 'soul'. 'Soul' is a complex word with various meanings in Greek, but it seems to be for Plato the seat of reason:

It is impossible for the best to produce anything but the highest. When he considered, therefore, that in all the realm of visible nature, taking each thing as a whole, nothing without intelligence is to be found that is superior to anything with it, and that intelligence is impossible without soul, in fashioning the universe he implanted reason in soul and soul in body, and so ensured that his work should be by nature highest and best. And so the most likely account must say that this world came to be in very truth, through god's providence, a living being with soul and intelligence.¹⁷

¹⁶ Plato. *Timaeus and Critias*. Translated with an introduction and an appendix on *Atlantis* by H.D.P. Lee. Harmondsworth: Penguin Books Ltd., 1971. p.42,

¹⁷ *Ibid.* p.42

Plato accepts the Pythagorean belief that the world, or nature as a whole, is permeated with soul. It is because of soul that intelligence is possible for reason is found within the soul, and because of reason the order that the 'creator' has given to the world can be found by humans. There is order because of intelligence and only through intelligence can order be found. Reason within the soul is the tool for making discoveries about the world.

Aristotle was also concerned with order and with form rather than matter. But he criticized Plato's version of the Forms for he was not concerned with the problems of epistemology and so was able to embrace change and movement as real rather than illusory. As a philosopher of his time he was trying to come to terms with the idealism of Plato as well as the materialism of other philosophers. He accepts that within nature there is always change and movement and that they are eternal. He rejects Plato's ideal Forms while still emphasizing that form is more important than matter.

Aristotle's philosophy does not lead him to a 'creator' in the sense that Plato devised, but to a 'First Mover'. In Aristotle's philosophy the world of nature is a world of self-moving things. Like Plato and many other Greek thinkers, Aristotle perceives nature as imbued with a soul. All of nature has movement, growth and change:

Nature, then, is 'innate impulse to movement'. That this exists is obvious from experience and needs no proof.¹⁸

Aristotle follows Plato and rejects the Ionian theories concerned solely with matter.

He promotes the idea of the form as identical to the nature of things:

¹⁸ Ross, D. *Aristotle*. London: Methuen, 1964. p.67

This Aristotle holds to be more properly the nature of a thing than is its material, since a thing is what it is, has its nature more fully when it exists actually, when it attains its form, than when it exists potentially, ie. when the mere matter for it exists.¹⁹

The ability for change or movement within nature, such as growth, Aristotle understands as due to the form:

He habitually identifies nature as power of movement with nature as form. The form or mode of structure of a thing – eg. of an animal – is just that by virtue of which it moves, grows and alters and comes to rest when it has reached the terminus of its movement.²⁰

Aristotle links the first meaning of ‘nature’ to the second generalized meaning.

Individual substances have natures. The natures of things are provided by those characteristics inherent to them and determine how each substance behaves.

Aristotle’s explanation of nature is deeply teleological:

Each finite substance, having its own nature, has its own ideal state. This is especially clear (and poignant) in living things. Biological substances have ideal states toward which they develop-if they can. they have individual goods to pursue. The acorn is self-directed toward its fulfilled state in becoming a productive oak tree, under fortunate circumstances. This is what is meant by having a distinct nature, an essential character bringing about internal self-development.²¹

¹⁹ Ibid. p.68

²⁰ Ibid. p.68.

²¹ Ferre. F. *Being and Value*. Albany: State University of New York, 1996. p.60.

Each individual in nature has a goal which it attempts to achieve. Aristotle tackles the problem of change with his famous four causes: material cause, formal cause, efficient cause and final cause.

When discussing the whole of nature in the generalized second meaning of 'nature', Aristotle defines it as also having a nature like everything else within nature, because it too has a final cause. Nature has a purpose. However purpose is not given from outside of nature, as Plato assumed. Nature is both agent and patient at the same time. Since nature is self-moving then there does not need to be an external power to account for changes. Like previous Greek thinkers Aristotle assumes that matter has always existed: nature is a self-causing and self-existing process. He did not have a concept of laws of nature as his emphasis is on growth and development, processes from the potential to the actual, but his philosophy did need a first unmoved mover who begins all the processes:

Aristotle, identifying God with the forms, conceives one single unmoved mover with a self-contained activity of its own, namely self-knowledge...thinking the forms which are the categories of its own thought, and since that activity is the highest and best possible inspiring the whole of nature with desire for it and a nisus towards reproducing it, everything in its degree and to the best of its power.²²

The first unmoved mover gives nature the forms through its own thinking and is the 'creator' of all movement as everything within nature is striving towards the fulfilment of its own form as given by the unmoved mover.

The First Unmoved Mover never changes. It is pure actuality without the need for change. Aristotle equates pure actuality with thought and this 'thought' is the final cause to which everything aspires. In this way the First Unmoved Mover is a

²² Ibid. p.68

‘creator’ at least in the sense that it is the ultimate nature which gives meaning to everything else. The First Unmoved Mover’s activity is simply thinking because there is no distinction between thought and the object of thought with the final cause:

The intrinsic object of thought is what is intrinsically best, and the intrinsic object of absolute thought is the absolutely best. And in apprehending its object thought thinks itself. For it too becomes an object for itself by its contact with, and thinking of, its object, so that the thought and its object are one and the same.²³

Aristotle’s First Unmoved Mover is, like a deity, the reason for all, as the harmony and good order in the world ultimately depends on it. Everything is striving to imitate it, to aim for the eternal and divine, but each in their own way. Individuals die, but by the process of reproduction the species are maintained forever. These rhythms of life and ceaseless interchanges arise from the stars emulating the divine’s activity by their eternal movement. Humans alone of all creation possess something of the divine ability to engage in pure thought.

Within the philosophy of the two great thinkers of Ancient Greece is a search for order in the universe, and from this search comes the logical step of there being some first Being that gives order or sets it in motion. These are teleological concepts of nature. Plato perceived nature to be a rational scheme in which everything has a purpose because the world is a perfect image of the whole of which all animals, both individuals and species, are parts. Aristotle’s concept of a well-ordered universe also leads him to assume that everything has a purpose as everything strives towards its best possible state.

²³ Ibid. p.374.

The teleological concept of nature was most strongly developed within the philosophy of the Stoics. They linked the idea of a purposive world with that of a Creator. The concept of nature was interwoven with the concept of God. Their thinking is important for the influence it later had on Christian thinking.

The Stoics used the term 'nature' in a number of different but interrelating ways:

First some examples of the use of the term in Stoicism: (1) the power or principle which shapes and creates all things (SVF ii 937); (2) the power or principle which unifies and gives coherence to the world (SVF ii 549, 1211); (3) fiery breath (or artistic fire) self-moving and generative (SVF ii 913); (4) necessity and destiny (SVF ii 913); (5) God, providence, craftsman, right reason (SVF I 158, 176,iii 323).²⁴

The Stoics' universe is a materialist, pantheistic one. Stoics linked the concepts of reason, or logos, god, necessity and nature. Many of these ideas were a development on those of the Ancient Greeks. The original idea from the Greeks where reason, or an intelligence, is needed so that there can be order is now expressed fully in the concept of a god. Intelligence permeates throughout the Universe in the form of a particularly fine substance, the *pneuma*, and this intelligence the Stoics equate with god.

The identification of god and nature led to an ethical code. Everything was interdependent and therefore to live a good life was to live in accordance with nature. In this way each could relate to the other as well as to the whole cosmos. As reason governs the cosmos, and so a good life was also one that followed reason; in this way the individual could feel they belonged to the whole:

²⁴ Long, A.A. *Hellenistic Philosophy; Stoics, Epicureans, Sceptics*. London: Duckworth, 1974. p.148. (SVF = Stoicorum Veterum Fragmenta.)

In Stoicism to be a good and happy man is to be related in a certain way to Nature or God. The psychological need to relate – to oneself to one’s society, to the world – was sensed acutely by the Stoics. Like William James, or Jung, or Fromm, they detected an all-inclusive desire to ‘feel at home in the universe’. The Stoic philosophy of nature provides a cosmic orientation for personal identity which, far from neglecting human relationships, makes them implicit in life according to reason. ‘We have come into being for co-operation’. (Marcus ii. 1): ‘the good of rational being consists in communal association’. (v.16).²⁵

The whole of the universe is endowed with sensibility as well as with reason and intelligence and so, the Stoics reasoned, it must be god. Because of the existence of a creator the whole of the universe from the beginning of time is under the care of divine providence. The divine providence guides and directs nature so that everything is as it ought to be:

I affirm then, that the universe and all its parts were established and set in array in the beginning and have been administered through all intervening time by divine providence. We Stoics as a rule discuss this hypothesis under three general heads of which the first has to do with proof of the existence of the gods. If that be conceded, it follows logically that the universe is guided and directed by their wisdom. Under the second head, we seek to prove that all things are subject to the power of sentient Nature and that by her the affairs of the cosmos are conducted with supreme effectiveness. If this point be regarded as satisfactorily demonstrated, then it must be admitted that everything in the universe sprang from animate elements. Under the third head we deal with the admiration which fills our hearts as we contemplate the celestial and terrestrial worlds.²⁶

The Stoics believed that they lived in a world where everything is rightly ordered.

The good life was then to accept the ways of nature because whatever happened was

²⁵ Long, 1974. op. cit..p. 163.

²⁶ Cicero, M. T. *Brutus; On the Nature of the Gods; On Divination; On Duties*. Translated by H.M. Poteat with an introduction by R. McKeo. Chicago: University of Chicago Press, 1950. p. 255

as it should be. This is in one sense a complacent philosophy, and those who followed it would have been calm in all circumstances. It is a teleological explanation of nature and leads to a positive concept of nature. The wonder of nature is that everything fits so well together that nothing could have happened by chance: it has all been planned with purpose. This leads to admiration. But because the Stoic philosophy excludes chance it is at the same time a deterministic and fatalist philosophy. The Stoics attempted to maintain human freewill in their philosophy, but freewill did not fit easily into a nature that was governed by Providence.

The important point to notice about these thinkers of ancient times is their belief in human reason which is capable of perceiving order in nature and which allows humans to understand and to a certain extent control nature. Following from this was their belief that if humans had reason to reveal order in the world around them, then there must be an order amongst the seeming chaos of sense perceptions to be found which could only be there because it had been created by a higher reason and intelligence. In this way the search for order led to the concept of a god that maintained everything in nature. For the Stoics, God is the underlying intelligence within nature. The positive aspect of the teleological explanation of nature is that nature is perceived as a whole in which every part has a purpose in the whole, and that includes a role for humans. I shall be returning later in my thesis to teleological explanations of nature, but in the next section I shall be looking at non-teleological explanations of nature in the Ancient World.

2. Non-teleological Concepts of Nature

Greek and Roman philosophers also postulated a non-teleological concept of nature. The pre-socratic philosopher, Empedocles, understood the world to be made of four elements: earth, air, water and fire. These elements were driven by Love and Strife and were forever changing from the One to Many. Love tries to unite all things into the One while Strife breaks things into the Many so that there is constant battle between them. At the present time it is Strife that is more successful. All living things are made by chance. Love brings them together into whole beings but Strife is always separating them so that monsters can sometimes be formed. It is only by chance that living beings can survive:

But I shall turn back to the path of song I traced before, leading off from one argument: when strife had reached the lowest depth of the whirl and love comes into²⁷ the centre of the eddy, in her then all these things unite to be one only; not immediately, but coming together from different directions at will. And, as they were being mixed, countless types of mortal things poured forth, but many, which Strife still restrained from above, stayed unmixed, alternating with them which were combining, for it had not yet perfectly and completely stood out as far as the farthest limits of the circle, but part remained within and part had gone out of the frame. And in proportion as it continually ran on ahead, a mild, immortal onrush of perfect love was continually pursuing it. Immediately what were formerly accustomed to be immortal became mortal, and formerly unmixed things were in a mixed state, arising to the exchanging of their ways. And, as they were being mixed, countless types of mortal things poured forth, filled with all kinds of form, a wonder to see.²⁷

In Empedocles' account of creation there is no Mind or Intellect that gives order to matter. There is no designer or creator but two impersonal forces at war with one another. There is instead a destruction of the One to make the Many and all that come into being adopt all sorts of forms and do so purely by chance. This account is in

²⁷ Wright, M. R. ed. *Empedocles: the extant fragments*. New Haven: Yale University Press, 1981. Fragment 47 (35).

some ways a precursor of modern day evolutionary theory where natural selection and survival of the fittest are the chance elements that bring about the many different species. It is an account of the beginning of all things that excludes a teleological explanation. Nothing can be described as having a purpose since nothing was designed for anything.

Leucippus, possibly a pupil of Zeno, was the first to put forward the theory of atomism together with his pupil Democritus. Modern atomism can only loosely be attributed to these two early philosophers, as modern science relies heavily on mathematics and the particles of science today are thought by some to have only a functional role. The atomist theory of Democritus is purely philosophical and not scientific.

Democritus, according to Aristotle, believed the world to be made of space, or the void, and small physical matter, the atoms. These atoms are of various shapes and sizes. Visible matter is made of these atoms interacting with one another:

The reason why the substances stay together with one another up to a point, he finds in the overlappings and interlockings of the bodies; for some of them are scalene, some hooked, some convex – and they have innumerable other differences. Thus he thinks that they hold on to one another and stay together for a time, until some stronger necessity comes upon them from their surrounding, shakes them about and scatters them apart. (Simplicius 213 Fr. 200. 68 A 37.)²⁸

There is no purposeful design in this account but a physical necessity. There is no purpose within the physical world, although there is in the human soul. However, Democritus shows in his ethical writings that this purpose is limited, for he suggests

²⁸ Barnes, J. *The Presocratics Philosophers*. (The Arguments of the Philosophers.) London: Routledge, 1999. p. 343.

that humans have only the purpose of pursuing pleasure, or at least a state of calm and stability:

The state is achieved by not engaging in much business, either private or public, and by not trying to exceed one's capacities; it depends on one's mental and psychological state and 'does not live in cattles or in gold'; to reach it you 'must not take your pleasures in mental things.' Above all, you must practice moderation.²⁹

There is some parallel of this ethical theory in the Utilitarianism of Bentham although Utilitarianism offers a moral guide to behaviour between people that the philosophy of Democritus does not. An encouragement for the individual to achieve stability is somewhat short of a guiding ethical theory:

All that amounts, I suppose, to a moderately coherent plan of life; and we may, if we wish, call it a practical system. Lovers of anachronism (among whom I happily enrol myself) may begin to think of a Benthamite Utilitarianism: if he did not invent a felicific calculus, at least Democritus prepared the way for one, and Bentham's moral system was adumbrated at Abdera. But that suggestion is wholly mistaken: Democritus' hedonism has nothing at all to do with morality; it does not pretend to tell us what, morally speaking, we ought to do, or how to live the moral life. It is a recipe for happiness or contentment, not a prescription for goodness: the system sets up a selfish end for the individual and counsels him on how to attain it; it does not set up a moral goal and offer advice on its achievement.³⁰

Nevertheless, although Utilitarianism is a moral theory that gives advice, its emphasis is on the pursuit of happiness and not the search for goodness itself, for goodness is defined in terms of happiness, and in that Barnes is right to draw a parallel with Democritus' code for living.

²⁹ Ibid. p. 532.

³⁰ Ibid. p. 533.

The Democritean physical explanation of the world leads to determinism. The atoms collide by an inner necessity; there is no mind that directs them. The metaphysical explanation of physical necessity gives little basis for an ethical theory. In a physically determined universe, humans, whose souls alone are not determined, have no further need than to seek a stable life for themselves. A non-teleological explanation of the universe gives no necessary role to humans. Democritus' theory lacks a creator to give humans that role.

In a similar way the Epicureans were opposed to the idea of a creator or of perceiving design and purpose within the world of nature. In Epicurus' letter to Herodotus he says:

Nay more: we are bound to believe that in the sky, revolutions, solstices, eclipses, risings and settings, and the like, take place without the ministrations or command, either now or in the future, of a being who at the same time enjoys perfect bliss along with immortality. Hence, when we find phenomena invariably recurring the invariableness of the recurrence must be ascribed to the original interception and conglomeration of primary particles whereby the world was formed.³¹

Epicurus had inherited the atomic theory of Democritus. He modified this doctrine but took the fundamental principle that everything was made of atoms, or minute particles, and void. With this doctrine, explanations of causes could be made without recourse to a divine being, or to teleology:

The atomist system seemed to him to provide an explanation of the structure of things which was compatible with empirical data and psychologically comforting, in that it did away with the need for divine causation and any form of teleology.³²

³¹ Gaskin, J. *The Epicurean Philosophers*. London: Everyman, 1995. pp. 26-27.

³² Long, A.A. *Hellenistic Philosophy: Stoics, Epicureans, Sceptics*. London: Duckworth, 1974. p. 39.

Thus Epicurus rejected the teleological explanations of Plato and Aristotle. Socrates, or Plato, had found the emphasis on mechanistic explanations in the presocratic philosophers a defect, but Epicurus saw it as a merit. The world is so obviously imperfect that it could not possibly have been designed. He did not accept Plato's explanation that the world was now imperfect because it had lost the perfection it first had from the Forms.

Epicureanism became the main doctrine in opposition to the Stoics. Against the Stoics' philosophy of a purposeful, created world permeated with intelligence and in which we as humans have a valid place, the Epicureans presented a world of chance that had no direction. Lucretius, the Roman disciple of Epicurus, puts forward strong arguments for a non-teleological view of the world in his *De rerum natura*. He argues avidly against gods, which are those of Greek and Roman mythology, having any impact on the material world. He sees a belief in gods as a restricting fear:

This dread and darkness of the mind cannot be dispelled by the sunbeams, the shining shafts of day, but only by an understanding of the outward form and inner workings of nature. In tackling this theme, our starting point will be this principle; Nothing is ever created by divine power out of nothing. The reason why all mortals are so gripped by fear is that they see all sorts of things happening on the earth and in the sky with no discernible cause, and these they attribute to the will of a god. Accordingly, when we have seen that nothing can be created out of nothing, we shall then have a clearer picture of the path ahead, the problem of how things are created and occasioned without the aid of gods.³³

³³ Lucretius. *On the Nature of the Universe*. Translated by R. E. Latham. Revised with an introduction and notes by John Godwin. Harmondsworth: Penguin Books, 1994. p. 13.

Things are created without the aid of gods. The basic building blocks of the world are many different kinds of atoms or seeds. As nothing comes from nothing they must come from somewhere, so things of nature come from their own types of seed:

Surely because each thing requires for its birth a particular material that determines what can be produced. It must therefore be admitted that nothing can be made out of nothing, because everything must be generated from a seed before it can emerge into resisting air.³⁴

Lucretius is opposed to Plato's rationalist concept of knowledge. He is one of the first empiricists. Knowledge can only be obtained through the senses and this includes the concept of truth:

You will find, in fact, that the concept of truth was originated by the senses and that the senses cannot be rebutted. The testimony that we must accept as more trustworthy is that which can spontaneously overcome falsehood with truth. What then are we to pronounce more trustworthy than the senses? Can reason derived from the deceitful senses be invoked to contradict them, when it is itself wholly derived from the senses?³⁵

Lucretius' world is one without a creator and without design, so teleological explanations of nature are to be avoided. Lucretius warns against the dangers of seeing purpose in the objects of nature. Whatever is in nature comes first by chance and then it is used in the best way for it:

In this context, there is one illusion that you must do your level best to escape – an error to guard against with all due

³⁴ Ibid, p. 15.

³⁵ Ibid. p. 107.

caution. You must not imagine that the bright orbs of our eyes were created purposely, so that we might be able to look before us; that our need to stride ahead determined our equipment with the pliant props of thigh and ankle, set in the firm foundations of our feet; that our lower arms were fitted to stout upper arms, and helpful hands attached at either side, in order that we might do what is needful to sustain life. To interpret these or any other phenomena on these lines is perversely to turn the truth upside down. In fact, nothing in our bodies was born in order that we might be able to use it, but whatever thing is born creates its own use.³⁶

This is a type of argument that is used in evolutionary theory today. Nothing occurs in nature for a purpose, but comes about through natural selection, evolving over the years. Whatever is selected for can then be used for certain tasks. Lucretius has no strongly developed understanding of how natural selection works, but nevertheless his ideas are similar to evolution theory today.

In Greek and Roman thought we have a fundamental opposition in the understanding of nature. On the one hand there is a created, purposeful world filled with living things that have their allotted place, and on the other there is the world of chance. Both opposing thoughts are concerned with change in the natural world but whereas the former thinkers seek for the unchanging and the eternal, the latter thinkers accept change as the fundamental principle underlying nature. The teleological thinkers perceive the world as perfect. This is most fully expressed in the Stoic philosophy. They took this view to its logical but unsatisfactory conclusion that as everything was for the best, and that even pain had a worthwhile place in nature. The non-teleological thinkers perceive a world that is imperfect and they use this argument as proof against a creator. Lucretius views humans as having a hard time in

³⁶ p. 116.

a cruel, ruthless world. Humans need to work to subdue nature and in this way progress. Nature is too flawed to be useful to humans left as it originally was:

But even if I knew not what are the primary particles of things, yet this I would dare to affirm from the very workings of heaven, and to prove from many other things as well; that by no means has the nature of things been fashioned for us by divine grace: so great are the flaws which it stands beset. First of all that the huge expanse of heaven covers, half thereof mountains and forests of wild beasts have greedily seized; rocks possess it and waste pools and the sea, which holds far apart the shores of the lands. Besides about two thirds of it burning heat and the ceaseless fall of frost steal from mortals. Of all the fields and land that remains, yet nature would by her force cover it up with thorns, were it not that the force of man resisted her, ever wont from his livelihood to groan over the strong mattock, and to furrow the earth with the deep-pressed plough. But that by turning fertile clods with the plough share and subduing the soil of the earth we summon them to birth, of their own accord the crops could not spring up into liquid air, and even now sometimes, when won by great toil, things grow leafy throughout the land, and are all in flowers either the sun in heaven burns them with too much heat or sudden rains destroy them and chill frosts, and the blasts of the winds harry them with headstrong hurricanes.³⁷

Lucretius describes a tough world which humans must subdue for their own survival.

The Earth was once young and gave birth to many things but now it is tired. Humans must labour hard to gain anything from nature:

Already the life force is broken. The earth which generated every living species and once brought forth from its womb the bodies of huge beasts, has now scarcely any strength to generate tiny creatures. For we assume that the races of mortal creatures were not let down into the fields from heaven by a golden cord, nor generated from the sea or the rock-beating surf, but born of the same earth that now provides nurture. The same earth that in her prime spontaneously generated for mortals smiling crops and lusty vines, sweet fruits and gladsome pastures, which now can scarcely be made to grow by our toil. We wear down the oxen and wear out the strength of farmers, we wear out the ploughshare and find ourselves scarcely

³⁷ Gaskin, 1995. op. cit. pp. 235-236.

supplied by the fields that grudge their fruits and multiply our toil.³⁸

This is an earth that is running down to its inevitable end. There is no purpose for its existence as it happened by chance. There is no greater good which is concerned for the whole. Things come into being and then decay: death is the end for all. Lucretius portrays death as a comforting thing for it can take away all the sorrows that humans have endured while alive:

If the future holds misery and anguish in store, the self must be in existence, when that time comes, in order to be miserable. But from this fate we are redeemed by death, which denies existence to the self that might have suffered these tribulations. Rest assured that we have nothing to fear in death. One who no longer is cannot suffer, or differ in any way from one who has never been born, when once this mortal life has been usurped by death the immortal.³⁹

Lucretius takes this line of thought to comfort those who fear what there might be in an afterlife. There is no afterlife to worry about, he assures them. However, his message is one that leads to the conclusion that each person should live as best one can for the time they are alive. It is a philosophy for the individual moment for each person. There is little in his philosophy to encourage plans for the future. An individual cannot assume that they have any purpose within the whole for everything has to pass away to make room for the new things:

The old is always thrust aside to make way for the new, and one thing must be built out of the wreck of others. There is no murky pit of Tartarus awaiting anyone. There is need of matter so that later generations may arise; when they have lived out

³⁸ Lucretius, 1994. op. cit. p. 66.

³⁹ Ibid. p. 88.

their span, they will all follow you. Bygone generations have taken your road, and those to come will take it no less. So one thing will never cease to spring from another. To none is life given in freehold; to all on lease.⁴⁰

Life is so transitory that there is little purpose other than enjoy life as much as possible and survive as well as nature will allow. There is no grander plan or a purpose to which each and everyone is a part. Humans are simply one of the many chance things that happen to have come into existence. The Earth brought humans into existence but everything changes and, presumably, like other species, humans will also cease to exist at some time in the future:

Then, because there must be an end to such parturition, the earth ceased to bear, like a woman worn out with age. For the nature of the world as a whole is altered by age. Everything must pass through successive phases. Nothing remains forever what it was: everything is on the move. Everything is transformed by nature and forced into new paths. One thing, withered by time decays and dwindles. Another grows strong and emerges from ignominy. So the nature of the world as a whole is altered by age. The earth passes through successive phases, so that the earth which used to be able to bear can do so no longer, while mammals which could never bear in the past can now produce.⁴¹

This philosophy leads to acceptance of one's lot in life and the transitory nature of one's own lifespan and may be comforting for some. But it also suggests a certain *laissez-faire* attitude. If things are coming and going, forming and reforming from different combinations of atoms there is little need to have a direction in life. One simply accepts what one is given.

Writers today perceive Lucretius as ahead of his times:

⁴⁰ Ibid. p. 91.

⁴¹ Ibid. pp. 149-150.

This world outlook he applies to the evolution of plant, animal and man and puts forward a theory of biological and social evolution that goes far beyond anything propounded in classical antiquity.⁴²

Lucretius' ideas would seem very acceptable to many scientists today. But unlike the great philosophers, Plato and Aristotle, he gives little guidance in his thought for humans dealing with social and ethical problems. His only concern is that the fear of death should be taken away. His philosophy has no real ethical content. It also gives no role to humans within the whole of nature.

These two opposing points of view differ in another respect. Although both are anthropocentric, the teleological explanations are more so. This can be seen as a positive or negative element of the teleological point of view. The teleological viewpoint led thinkers to understand humanity to be the central reason for the existence of everything in nature and this is why it was heavily anthropocentric. Environmentalists have wrongly accused Christianity for this emphasis on humans within nature, but the concept was developed far earlier. Aristotle expresses the anthropocentric view of nature in his *Politics*:

In like manner we may infer that, after the birth of animals, plants exist for their sake and that the other animals exist for the sake of man, the tame for use and food, the wild, if not all, at least the greater part of them, for food, and for the provision of clothing and various instruments. Now if nature makes nothing incomplete and nothing in vain, the inference must be that she has made all animals for the sake of man.⁴³

⁴² Winspear, A. D. *Lucretius and Scientific Thought*. Montreal: Harvest House, 1963. p.3

⁴³ Jowett, B. 'Politica' in Ross, W.D. *The Works of Aristotle*. Oxford: Clarendon Press, 1921. vol. 10. p. 1256b.

Aristotle credits nature with making everything for the sake of humans. There is nothing in nature that is not there for some purpose for nature is a whole and every part of the whole is necessary.

The Stoics believed that humans had a central role on Earth. The heavens were for the gods and the Earth for the use of humans. The idea that life was for the benefit of gods and humans was expressed by Stoics, like Strabo:

The geographer, Strabo, a Stoic, says that the region around the modern city of Toulouse is so harmoniously arranged and its people are so industriously engaged in their various ways of life that one might well credit the workings of Providence, 'such a disposition of these regions not resulting from chance, but from the thought of some [intelligence]'. Providence is a 'broiderer and an artificer of countless works' who has created all life for the gods and for man. Providence has given the heavens to the gods, and earth to man, fashioning it for his use.⁴⁴

The special placing of humans within nature is because they alone of all living things partake of the permeating intelligence of the universe. In Cicero's *De Natura Deorum*, Balbus the Stoic implies that it is for humans to use nature and to improve it for their own use:

We enjoy the fruit of the plains and of the mountains, the rivers and the lakes are ours. We sow corn, we plant trees, we fertilize the soil by irrigation, we confine the rivers and straighten or divert their courses. In fine, by means of our hands we try to create as it were a second world within the world of nature.⁴⁵

Providence has designated the purpose of changing and improving the Earth to humans. In looking after the earth humanity is fulfilling a destiny inherent in

⁴⁴ Glacken, 1967. op. cit. p.61.

⁴⁵ Cicero. *De Natura Deorum; Academia*. With an English translation by H. Rackham. London: Heinemann Ltd., MCMXXXIII II 60, 150-152 p. 271.

Providence's design. In this scheme of things humans have a very important role to play as regards the rest of nature: they are in the world to improve nature. The influence of Stoic thinking can be seen in the use Romans made of the land. The Romans divided land neatly and mathematically: it was a form of large-scale gardening. All work on the land was perceived as improving nature to help it to yield more.

In non-teleological philosophies the relationship of humans to nature is perceived very differently. Although nature is full of wonderful things for humanity to enjoy, nevertheless it is a struggle for humans to survive. The Earth is in fact a fitter environment for animals and plants than for humanity:

Again, why does nature feed and breed the fearsome brood of wild beasts, a menace to the human race by land and sea? Why do the changing seasons bring pestilence in their train? Why does untimely death roam abroad? The human infant, like a ship-wrecked sailor cast ashore by the cruel waves, lies naked on the ground, speechless lacking all aids to life, when nature has first tossed him with pangs of labour from his mother's womb upon the shores of the sunlit world. He fills the air with his piteous wailing, and quite rightly, considering what evils life holds in store for him. But beasts of every kind, both tame and wild, have no need of rattles or a nurse to lull them with babbling baby-talk. They do not want to change their clothes at every change in the weather. They need no weapons or fortifications to guard their possessions, since every need is lavishly supplied by mother earth herself and nature, the clever inventor.⁴⁶

Nature looks after all living creatures but humanity alone suffers and has to take from nature what it needs: humans are not favoured by nature. Epicureans therefore believed that humans should improve nature to make life more pleasurable. Both Stoics and Epicureans alike believed that humanity's influence on nature was always for the better. Both schools of thought perceived nature as freely available for

⁴⁶ Lucretius. 1994. op. cit. p.134.

humanity's use although the reason for this came from two very different metaphysics. Stoics improved nature because it was a part of the plan of Providence and Epicureans improved it for the sake of survival. This anthropocentric attitude towards nature probably resulted out of necessity. Humans needed to survive in an environment that was often precarious. Although nature gave all and was perceived in a positive way as a provider, it also needed to be tamed in order that humans could live well. This attitude appears exploitative and most likely would have led to some environmental problems at the time. But the problems were not so acute as they are today and nature still appeared plentiful. There was no urgent need to change their exploitative attitude.

Chapter 3

From Medieval Europe to the Beginnings of Science

Although Christian thought dominated Medieval Europe, there were also strong influences from the classical philosophers, at first from Plato and the Neoplatonists and later, in the twelfth century, from Aristotle. Within the domain of Christianity the teleological concept of nature presided. There is little evidence of non-teleological concepts at this time. On the whole writers of the time accepted that the world had been created by God, and that everything that was created had a purpose. It was the premise on which all thinking had its foundation. The works of both Plato and Aristotle were referred to in support of the belief that nature was purpose-filled. The thinking of the Stoics was also included in Christian concepts of nature.

The main theological interest of these times was the relationship between the Creator and His creation. One problem that concerned the early Christian thinkers was that of good and evil. God the creator was perfect and therefore what He created must be perfect. However there were obvious imperfections in the world including evil. The Gnostics solved the problem by believing in two Principles and not just one God. There was an Evil Principle as well as a Good Principle:

This world and all that is in it was made, they claimed, by the evil principle.¹

The Gnostics were a strong religious sect in the first two centuries of Christianity. Their belief that an Evil Principle created the world meant that they

¹ French, P. and Cunningham, A. *Before Science: the invention of the Friars' natural philosophy*. Aldershot: Scolar Press, 1996. p.,179

perceived nature as evil. The Good Principle, God, was not a part of the material world. He was transcendent and removed from the world in which people lived:

The alien God is the key to Gnostic thinking. With regard to the world or what Christians have called creation, the Gnostic deity is absolutely transcendent. The life of this God is utterly removed and disconnected from mundane reality, which the Divine neither created nor governs. Compared to the light of the Divine, the material world, for the Gnostic mind, is a self-contained and distant realm of darkness...A fundamental conviction of Gnosticism, accordingly, is that the earth and everything contained in it is evil.²

Gnostics believed that humans should try to escape an evil world. Nature, under this theology, was a negative environment that was to be scorned. But this was not an acceptable theology for many Christians. St. Augustine in particular argued against the conclusions of the Gnostics. It was contrary to Christian doctrine that the world of creation, nature itself, should be perceived as evil. It was a fundamental belief of Christians that the world was created by God and therefore must be good.

The early Christians were always concerned to show that there was order and harmony within nature. They wished to support the belief that it was the one true God who had created everything. Augustine, in his fight against the Gnostics, said that there was one God, timeless and unchanging. He is the creator and the created order is complete. Everything, both as an individual and as a part of the whole, is good. Augustine's concept of the Creator is very much influenced by Plato.

St. Augustine has no interest in human dominion over nature. His interpretation of 'dominion' is in terms of humans being able to judge all things.

² Santmire, H.P. *The Travail of Nature: the ambiguous ecological promise of Christian theology*. Philadelphia: Fortress Press, 1985. p.33

Humans have dominion over all things because they have understanding. Being created in God's image, humans are created to imitate the governance of God:

For this governance, as we have seen, is for Augustine a rule not of arbitrary power but of wisdom and propriety, a dominion that allows all things to be and to function in ways appropriate to their natures. The divine governance is one of *concursus*, and so, *mutatis mutandi*, is the human relationship with nature, as Augustine depicts it.³

Nevertheless, there yet remains a paradox within the Medieval concept of God. If God was understood to be the perfect being that was the embodiment of good, following the concept of the Idea of the Good in Plato's thinking, then He was a spiritual being to be seen as the perfection that humans should strive towards, forsaking everything in this world. On the other hand, as the creator He is understood to have given all that is on the Earth and humans therefore should care for the things of nature. These two concepts of God are present within the thoughts of Christian writers throughout the history of Christianity. If God was the perfection to which one strove, then the Earth was of little account. On the other hand, if God is perceived as 'goodness' then He permeates creation and humans should attend to the Earth as part of God's plan.

Medieval Christians positively encouraged the knowledge of nature. Christians must have inspired a protective attitude towards nature because it was sacred as the work of God. St. Bernard saw value in nature because it was the revelation of God through his works. A Christian could learn about God through all growing things, he said. In his oft-quoted letter to Heinrich Murdach St. Bernard writes:

³ Ibid. p. 70.

Believe me, I have discovered that you will find far more in the forests than in the books: trees and stones will teach you what no teacher permits you to hear.⁴

That the things of nature could teach good advice was a strong aspect in European thought.

But although nature gives lessons that God has placed within it, St. Bernard also saw the need to change nature. Humans are partners with God, so it is part of creation for humans to change and improve nature as long as it is done for the glory of God. This latter concept would put a restriction on humans' exploitation of nature, for if the improvement is done for God's glory it limits actions to being those that come from good motivations and not those that would be the result of human greed. The active side of Christianity believed that the improvement of nature was part of the work God had allotted to humanity on earth. Contrary to many descriptions by environmentalists of Christianity's impact on the environment, the Christian attitude as outlined above was entirely positive and not exploitative.

Even on the contemplative side of Christianity there appears a respect for nature. The Franciscans demonstrate this. St. Francis emphasized a communion with nature. He praises God and all His creatures and implores the latter to praise God also. He perceived all non-human life as having its own dignity and purposes. Within the writings of St. Francis can be seen the way he humanized all of nature to bring it closer to human understanding:

⁴ Glacken, C. J. *Traces on the Rhodian Shore: nature and culture in western thought from ancient times to the end of the eighteenth century*. Berkeley: University of California Press, 1967. p.213.

In *The Canticle of Brother Sun*, written by St. Francis during the illness of his last two years of life, the saint has praise for the Lord and all his creatures; for Sir Brother Sun, a symbol of the Lord, for Sister Moon and the stars ('In the sky You formed them bright and lovely and fair'), for Brother Wind ('And for the Air and cloudy and clear and all weather, / By which You give sustenance to Your creatures. '), for Sister Water (useful, humble, lovely, chaste), for Brother Fire (beautiful, merry, mighty and strong), for our Sister Mother Earth ('Who sustains and governs us, and produces fruit with colourful flowers and leaves.')

The thought of St. Francis suggests that he believed that every part of nature exists in its own right and for God's purposes. His understanding of the relationship of humans to nature is not a practical one, but mystical. Looking at the visible things of nature was an act of contemplation. Nature for the Franciscans was symbolic and allegorical, for in the contemplation of nature, humans could see things of symbolic significance that helped to direct their thoughts heavenward. Although the contemplative attitude towards nature is very different from that of the Benedictine's more active attitude, yet both approaches view nature with reverence. The environment should be loved and cared for. The Earth should not be exploited, but brought to fruition as it once had been.

But it is one thing to bring a barren earth once more to fruitfulness and quite another to take more from the environment than is sustainable. The main message of Christianity may have been positive towards the environment, but on the everyday practical level the spiritual message of Christianity appears to have been lost. Social and economic changes put pressure on the environment. What had begun as a positive attitude in the use of land that needed cultivation, under increasing wealth and settlement became gradually exploitative.

⁵ Ibid. p.214.

Although changes in thinking happen in a gradual way over the course of time, yet the Copernican revolution can be seen as one of those great landmarks in history that was the beginning of an entirely new way of understanding the world. Its major revelation was that the earth could no longer be perceived as the centre of the universe. The return of the central position of science and technology can be seen to have its beginning with the Copernican Revolution. With science came its fundamental tool: mathematics.

Mathematics had lost its importance in Medieval Europe but by the fourteenth century it was again beginning to be explored more positively. Leonardo da Vinci was one of the new scientists who saw mathematics as important to scientific theory:

...two centuries after Bacon, the great and many-sided thinker Leonardo da Vinci, stands out as a leader in this development. The importance of mathematics in scientific inquiry is strongly stated:

‘He who is not a mathematician according to my principles must not read me.’ ‘Oh, students, study mathematics, and do not build without a foundation.’⁶

In fact mathematics came to be taken as the key to understanding all of nature.

This mathematical view of the world was encouraged by the new astronomical discoveries coupled with the renewed interest in Plato and the growth of Neoplatonism:

For the question went pretty deep, it meant not only is the astronomical realm fundamentally geometrical, which almost anyone could grant, *but is the universe as a whole, including our earth, fundamentally mathematical in its structure.*⁷

⁶ Burt, E.A. *The Metaphysical Foundations of Modern Physical Science: a historical and critical essay*. London: Kegan Paul, Trent, Trubner & Co, 1925. pp. 30-31.

⁷ *Ibid.* p. 40.

Scientists of the time believed that the real world was a mathematical harmony that could be discovered by investigation. Both Kepler and Galileo held this view. Nature for both these scientists was a simple, orderly system where every procedure was thoroughly regular and necessary. Nature worked through immutable laws. Galileo's words are quoted within Burt's text:

Further this rigorous necessity in nature results from her fundamentally mathematical character – nature is the domain of mathematics. 'Philosophy is written in that great book which ever lies before our eyes – I mean the universe – but we cannot understand it if we do not first learn the language and grasp the symbols in which it is written. This book is written in the mathematical language and the symbols are triangles, circles and other geometrical figures, without whose help it is impossible to comprehend a single word of it, without which one wanders in vain through a dark labyrinth'.⁸

Galileo held that nature can be understood only through mathematics, but he was in full support of knowledge from the senses. He criticizes Copernicus for putting reason above the senses although he follows Kepler in his acceptance of the doctrine of primary and secondary qualities. The doctrine of primary and secondary qualities arose from the emphasis laid upon mathematics. Mathematics is the main tool for understanding nature; so this leads to the conclusion that only that which can be measured is real and these are the primary qualities. Other qualities that arose through the senses could only be illusory: these are the secondary qualities:

We begin now to glimpse the tremendous significance of what these fathers of modern science were doing, but let us continue with our questions. What further specific metaphysical doctrines was Kepler led to adopt as a consequence of this notion of what constitutes the real world? For one thing it led him to appropriate in his own way the distinction between primary and secondary qualities, which had been noted in the ancient world by the atomist and sceptical schools, and

⁸ Ibid. p. 64.

which was being revised in the sixteenth century in varied form... Knowledge as is immediately offered the mind through the senses is obscure, confined, contradictory and hence untrustworthy; only those features of the world in terms of which we get certain and consistent knowledge open before us what is indubitable and permanently real... *The real world is a world of quantitative characteristics only; its differences are differences of number alone.*⁹

Here we have returned to the beliefs of Pythagoras and, to a certain extent, Plato. The abstract world of mathematics leads us to the real, certain world. Senses cannot be trusted. To be able to understand the real world it is necessary to go beyond the illusory world of the senses and see the pattern beyond. But the re-discovery of mathematics did not lead the thinkers to the concept of a perfect world over and above the world we perceive, but to emphasizing the importance of measurement. The world that could be measured was the real objective world. This emphasis on the primary qualities meant that the secondary qualities became relegated to the subjective realm. The subjective realm of immediate human experience was illusory and thereby not part of reality. This thinking led to major philosophical problems as the subjective realm of humans became separated from the rest of nature:

The natural world was portrayed as a vast, self-contained mathematical machine, consisting of motions of matter in space and time and man with his purposes, feelings and secondary qualities was shoved apart as an unimportant spectator and semi-real effect of the great mathematical drama outside.¹⁰

Unlike Plato's doctrine where humans had a place within a harmonious whole (for the world of political and social organizations were to reflect the whole cosmos), the

⁹ Ibid. p.56

¹⁰ Ibid. p.95

philosophy which was the background to the science of post-renaissance did not have any grand scheme to include the subjective, purposeful side of humans. The scientists of that time still worked within the accepted metaphysics of Christian doctrine and failed to realize that their new view of nature opened a chink that would grow wider with the growth of science. This chink was the breakdown between the objective and subjective views of the world, the consequent limitations put on subjective knowledge and the relinquishing of any sense of purpose within the whole cosmos. Mathematics became the new god.

Mathematics was the new god, but the scientific method of Bacon was its helpmeet. Bacon was enthusiastic about a systematic acquisition of knowledge which would benefit humanity. It was the combination of mathematics and the scientific method that created a revolutionary change in the concept of nature. From this time on nature was accepted as a mechanical object suitable for study by humanity. Still holding on to the Christian concept of the immortal soul which alone had purpose, humans were envisaged as apart from nature, the subjective element within the objective, mechanical whole.

Bacon criticized the philosophy of Plato and Aristotle and also that of the scholastics. He particularly criticized the use of final causes in an explanation of nature. Previous to this time thinkers had always asked the question 'why?' when looking at nature and therefore needed final causes in their answer. Bacon believed that the search for final causes was incorrect and futile. Material and formal causes were the only way to discover the truths of nature. The question asked became 'how?' and not 'why?' and therefore final causes were inappropriate as an answer. The inquiry into final causes thus became perceived as misplaced. Final causes did not lead to obtaining knowledge about nature:

But this misplacing hath caused a deficiency or at least a great improficiency in the sciences themselves. For the handling of final causes, mixed with the rest in physical enquiries, hath intercepted the severe and diligent enquiry of all real and physical causes, and given men occasion to stay upon these satisfactory and specious causes to the great arrest and prejudice of further discovery.¹¹

Bacon's argument is that searching for final causes stops new discoveries and therefore knowledge cannot advance. Looking for final causes is inappropriate to the acquisition of scientific knowledge.

However, Bacon was a religious man and therefore did not discard final causes entirely. He outlines strict limitations on the way that knowledge is obtained. It should not be done for self-glory but only for the benefit of humankind as God would wish it. Final causes were justified according to Bacon but only within metaphysical explanations and theology. They were completely unjustified within science and therefore reference to divine causes was to be excluded from any scientific research. Only the study of material and efficient causes was useful in research about the physical world. This bracketing away of metaphysics from science gave scientists immense freedom. Bacon and the scientists that followed him worked within the framework that they were discovering truths about God's creation. But the chink that Bacon opened, grew into a vast chasm and, for some thinkers, metaphysics eventually became discredited. Final causes became obsolete within science and science and religion parted company. For many thinkers, metaphysics was sterile and empty of content.

¹¹ Bacon, F. *The Advancement of Learning*. Edited by G. W. Kitchen. Introduction by A. Johnston. London: Dent, 1973. p. 97.

Bacon was unaware where his scientific method would lead in people's concept of nature. He was only concerned that science should be of great benefit to humankind. His book *New Atlantis* outlines his thinking in this area. In *New Atlantis* there would be no disease. Technological skills would be used for the development of agriculture so that there would be no hunger. The increase of knowledge through science would lead humans to have complete control over nature so that no one would suffer again. Science would lead to such knowledge that anything would be possible:

The end of our foundation is the knowledge of Causes and secret motions of things; and the enlarging of the bounds of Human Empire, to the effecting of all things possible.¹²

Environmental philosophers have accused Bacon of encouraging a highly controlling role for humans over nature. They are correct in this but have perhaps forgotten that they live in a world today that is the result of this attitude and therefore are largely freed from many of the anxieties that beset the people prior to the rise in science. The freedom from childhood diseases is one of the many advantages that humans' control over nature has brought. Bacon was concerned about the elimination of all diseases and famine and the West has greatly benefited from this attitude. Bacon could not have envisaged the type of scientific research that has been carried out since his time. He does, however, insist that humans should assert their natural authority over nature:

Concerning the condition of the sciences: that it is unprosperous, not much improved; and that a way completely different from the one known before should be opened for the human intellect, and other help devised to let the mind exert its proper authority over the nature of things.¹³

¹² Bacon, F. *The Great Instauration and New Atlantis*. Edited by J. Weinberger. Arlington Heights: AHM Publishing Corporation, 1980. p. 70.

¹³ Bacon, F. *The Instauration Magna Part II*. Oxford: Oxford University Press, 2004. p. 11.

This attitude of Bacon's has been severely criticized. However, the fundamental belief that the lot of humanity should be improved is a worthy one from which we have all gained.

Like the scientists of the age Descartes was entranced with mathematics. He developed a conviction that mathematics was the sole key needed to unlock the secrets of nature. He saw the importance of the link between mathematics and physics and believed that all physics could be reduced to geometrical qualities alone:

The existence and successful use of analytical geometry as a tool of mathematical exploitation presupposes an exact one-to-one correspondence between the realm of numbers ie, arithmetic and algebra and the realm of geometry ie. space. That they had been related, was, of course, a common possession of all mathematical science; that their relation was of this explicit and absolute correspondence was an intuition of Descartes... Whatever else the world of nature may be, it is obviously a geometrical world, its objects are extended and figured magnitudes in motions.¹⁴

Descartes was so fixated by mathematics that he believed that only arithmetic and geometry were sciences of sure and indubitable knowledge. Thus he came to believe that only those things that could be understood in mathematical terms were real in nature. The real things in nature are the things that can be measured, that is extension and motion. Descartes took the general trend of thought at that time and perceived the world as a mechanical world. For Descartes the whole spatial world becomes a vast machine, including even the movement of animal bodies and human physiology. Notoriously he decided that animals were nothing but machines. There was no need of the concept of spirit or soul within the world at large. Everything in it could be

¹⁴ Burt. 1925. op. cit. p.97.



explained in mechanical terms. But Descartes was a religious man. The mechanical world was governed by the laws of nature which were kept constant by God. The human soul, or mind, was separate from this mechanical explanation.

Descartes' enthusiasm for a mechanical human body that could be explained from an objective, scientific point of view made possible a complete physical description of human. In fact Hobbes with his material monism took just this route. Although Hobbes still kept his belief in God, it was a god that was only necessary as the first cause to initiate all the motions that made up the universe:

Curiosity, or love of the knowledge of causes, draws a man from consideration of the effect, to seek the cause; and again, the cause of that cause; till of necessity he must come to this thought at last, that there is some cause, whereof there is no former cause, but is eternall; which it is men call God. So that it is impossible to make any profound enquiry into naturall causes, without being inclined thereby to believe there is one God Eternall; though they cannot have any Idea of him in their mind, answerable to his nature... a man may conceive there is a cause of them, which men call God; and yet not have an Idea or Image of him in his mind.¹⁵

The god of Hobbes is totally unknowable and seems only to exist in the minds of men to halt an infinite regress of causes. This is a god born out of logic and has little to do with nature or humanity.

The division between those that perceived nature as purposeful and those that understood it as happening by pure chance had already begun in ancient times. The Middle Ages had been dominated by teleological explanations of nature. With the rise of science, teleological explanations began to be defunct. Nature was no longer a realm of substances in qualitative and teleological relations, but a realm of bodies

¹⁵ Hobbes, T. *Leviathan*. Edited with an introduction by C.B. Macpherson. Harmondsworth: Penguin Books, 1968. p.167.

moving mechanically in space and time. Hobbes included humans within this mechanistic explanation. Unlike Descartes, he did not perceive a soul or mind that lies outside the mechanistic descriptions of the rest of nature. He saw no difference between the works of man and the works of God (nature):

For seeing life is but a motion of Limbs, the beginning whereof is
In some principall part within; why may we not say, that all *Automata*
(engines that move themselves by springs and wheeles as doth a
watch) have an artificiall life? For what is the *Heart*, but a *Spring*; and
the *Nerves*, but so many *Strings*; and the *Joynts*, but so many *Wheeles*,
giving motion to the whole body, such as intended by the Artificer?¹⁶

But at the same time there were those, particularly within the biological sciences of the time, who argued extensively for the overall purpose of nature. They did not want to see the demise of teleological explanations and argued against a mechanistic concept of nature. At the forefront of these arguments were the Cambridge Platonists such as Ralph Cudworth and Henry More. These men, as well as William Derham and John Ray, wrote in support of divine providence. They fought against the notion of unguided mechanism. They perceived nature as plastic and not mechanical, the revelation of a wise God and therefore a nature filled with purpose. Many, like More, saw nature as useful as well as beautiful and therefore it was consistent with man's duty to understand it and to learn how to control it for humanity's advantage. More believed that humanity was in the world to improve nature and that humans were the only beings on the Earth able to complete God's creation. Humans participate in the improving of the creation by such activities as plant and animal selection. More's approach is a strongly anthropocentric approach to nature.

¹⁶ Hobbes. 1968. op. cit. p. 81.

Learned men of the time considered the state of the Earth to be largely constant. However there were also those who believed in the senescence of nature. Francis Shalton believed in the corruption of the Earth. His *Blazyng Starre* of 1580 describes the Earth as in decline. In fact the idea of a decaying world had taken hold so much at this time that George Hakewell felt compelled to write at length in defence of a divine providence who kept nature constant. In his book *Apologie, or Declaration of the Power and Providence of God in the Government of the World*, he expresses his concern that to believe in the senescence of the earth was a denial of God's providence and a cause for people to lose hope. His well-researched arguments defeat those who had argued for a decline in the earth. He argues that environmental health is in the hands of humans, for what may seem to be less fertile fields can be improved with careful management by humans.

The scientists of the time continued to believe in a benevolent God. Like Bacon and Descartes, Robert Boyle held that final causes should not be disregarded, for divine ends could be observed within the workings of nature. He accepted teleology as a valid metaphysical principle, but nevertheless denied its application in physics. He had no doubts that there was a benevolent creator:

That the consideration of the vastness, beauty and regular motions of the heavenly bodies; the excellent structures of animals and plants; besides a multitude of other phenomena of nature, and the subserving of most of these to man, may justly induce him as a rational creature to conclude, that this vast, beautiful, orderly, and (in a word) many ways admirable system of things, that we call the world, was framed by a creator supremely powerful, wise and good, can scarce be denied by an intelligent and unprejudiced considerer.¹⁷

¹⁷ Burt, 1925. op. cit. p. 189.

However, in opposition to Descartes he believed that God could change the laws of nature whenever he chose. He also argued that the primary qualities were no more real than the secondary qualities in the universe as a whole, but since humans are a part of the universe then both of them are real.

Newton differed from Boyle in his metaphysics. He followed Descartes in his belief that the primary qualities belonged to the real world. The human soul, outside scientific explanations, was an irrelevant spectator to the laws of nature. The cosmos was a vast mathematical system whose regular motions ran according to mechanical principles. The real world was colourless, silent and a world of quantity only and no quality. Purpose lies in God and within the soul of humans; it was not a part of nature. Newton believed in God for he understood Him to be necessary as the first cause and to have set the mechanical world in action. The sensations and perceptions of living beings are a problem within Newton's understanding of a mathematical world, but he sees them as an indication that there must be an incorporeal being that has given the ability to perceive the world to living creatures:

How came the bodies of animals to be contrived with so much art, and for what ends was their several parts? Was the eye contrived without skill in optics, and the ear without knowledge of sounds? How do the motions of the body follow the will: and whence is the instinct in animals? Is not the sensory of animals that place, to which the sensitive substance is present; and into which the sensible species of things are carried through the nerves and brain, that they may be perceived by their immediate presence to that substance? And these things being rightly dispatched, does it not appear from phenomena that there is a Being incorporeal, living, intelligent, omnipresent, who in infinite space, as it were in his sensory, sees the things themselves intimately, and thoroughly perceives them, and comprehends them wholly by their immediate presence to himself: of which things the images only, carried through the organ of sense into our little sensories are seen and beheld by that which in us perceives and thinks. And though every true step made in this philosophy brings us not

immediately to the knowledge of the First Cause, yet it brings us nearer to it and on their accounts to be highly valued.¹⁸

In Newton's mechanical world nature has no purpose in itself. It is also bereft of colours, sounds and all the qualities that make the human perception of the world so rich. These secondary qualities lie within the mind of humans, the faculty of reason that makes humans aware of their creator. Newton's concepts of the universe, humans and the creator are reflected in Addison's poem *The Spacious Firmament on High*:

What though in solemn silence all
Move round the dark terrestrial ball?
What though no real voice nor sound
Within the radiant orbs be found?
In reason's ear they all rejoice
And utter forth a glorious voice
Forever singing as they shine
The hand that made us is divine.¹⁹

Newton and other scientists of the time held to the belief that science could not explain everything that was in the universe. However, later the mechanical concept of the world became fully established and developed into the notion of a self-perpetuating machine. Within this explanation there was no need of a first cause, and so later thinkers discarded the concept of a divine being. Without a purposeful being to give purpose to his creation, teleological explanations at a metaphysical level as well as at a scientific level became obsolete.

The scientists of the time kept their science and their religious beliefs separate. It was the philosophers who were concerned to try and understand the world in a more

¹⁸ Newton, I. *Opera Quae Exstant Omnia* Commentaris illustrabat S.Horsley. Tom.IV Londini:Johannes Nichols. MDCCLXXXII p. 238.

¹⁹ Addison, J. 'Ode' in Howard, A. *The Beauties of Literature, Consisting of Classic Selections from the Most Eminent and Foreign Authors*. Vol. 9. London: T.T. and J. Tegg, 1833. p. 185.

coherent form. Descartes' philosophy had led him to the belief in two basic substances, but he left unsolved the problem of how the material and the non-material could interact. The rationalists, fully convinced of the power of mathematics, sought systems that would prescribe how the world could be made intelligible to human reason. Mathematics was the paradigm subject that used pure reason and gave certain knowledge. The concept of pure reasoning, or intellect, is common to Descartes, Spinoza and Leibniz, but Spinoza found that accepting the two substances of Descartes' world would lead to contradictions. For Spinoza there is only one substance; God or Nature. But this is not the god of theology and Spinoza ridiculed final causes.

The other rationalists of the age took a different approach to the problem of mind and matter. Like Spinoza and Descartes, Leibniz believed that reality is both physical and mental, possessing both extension and thought, but unlike Spinoza he maintains the need for both efficient and final causes. He also held to the view that there was harmony and order in nature

Harmony and order within nature were traditionally linked with a purposive view of nature. Leibniz's philosophy echoed many of the thoughts of the Stoics. On the other hand, there were those who perceived nature as chaotic and capricious and therefore having no purpose other than the ones humans wished to create. Natural catastrophes were cited in support of the latter view. Baron d'Holbach denied that nature was created or had any purpose. Order does not lie in nature itself, but is projected by humans who wish to see it there:

Order, however, is never more than the faculty of conforming himself [sic. Mankind] with the beings by whom he is environed or with the

whole of which he forms a part.²⁰

The order and harmony that humans perceive has simply resulted from the interactions of humans with the environment and their adaptation to different climates and vegetation of the world. If environmental factors were different then humans would be different. In contrast to Leibniz, Baron d'Holbach does not perceive a world that is the best possible world or the only one that could be this way. This world is one of many possibilities. Humans delude themselves into thinking the world is the best possible world:

It is this aptitude in man to co-order himself with the whole that not only furnishes him with the idea of order but also makes him exclaim *Whatever is, is right*, whilst everything is only that which it can be, and the whole is necessarily what it is, and whilst it is positively neither good nor bad.²¹

Humans hold no privileged position as regards nature or the cosmos. At this time humans are adapted to the present environment, but some day humans may cease to exist and other beings may take their place:

In conclusion we can see that the two opposing concepts of nature, which first appeared in the ancient world, find expression again in the beginning of the scientific age. The one view is to conceive of nature as designed with a particular order and harmony in which humans have a particular role to play: the other view is to conceive of nature as not created and having no order. The order humans perceive is simply the result of adaptation of the individual parts, but it is not the only possible way

²⁰ Baron d'Holbach. *The System of Nature*. Adapted from original translation by H. D. Robinson, 1868. Introduced by M. Bush. Greek and Latin translation by A. Jackson. Manchester: Clinamen Press Limited, 1999. p. 45.

²¹ Ibid. p. 64

things could be. There is no purpose within the whole and therefore the individual parts also have no purpose. In the former concept, humanity has an important role to play in the whole of nature; in the latter concept the part humanity plays is often regarded as incidental. The beginnings of science and the description of the world in mechanical terms opened the way to explain nature without recourse to teleology. Although some philosophers and scientists decided to keep the idea of a religious purpose confined to humans and thereby perceived humans as in some way apart from an otherwise mechanical nature, the trend was to give an explanation of humans in a similar way to the rest of nature. In the latter explanation humans would be in all respects perceived as a part of nature and thereby an object of scientific study.

Chapter 4

Hume and Kant

The rise of mechanistic explanations of nature in the 17th century did not directly lead to a non-teleological explanation of the world but a step was taken in that direction. In the 18th century discussions about whether the world was created by design became more frequent. Also important at this time was the question whether the Designer cared or did not care for His creation. The explanations of science allowed for the whole of creation to work, like clockwork, without any intervention from a creator. The main question was whether the world and the humans within it were created for a grand purpose, or whether everything had happened by chance and humans were in charge of their own ends. So once again the two opposing views of nature that had been expressed in the ancient world predominantly by the Stoics and the Epicureans from their respective points of view became a part of intellectual discussions in 18th century Europe.

The teleological and non-teleological explanations of nature are put in opposition in Hume's *Dialogues Concerning Natural Religion*. Hume puts forward the three main arguments in the form of dialogues. He was concerned, not so much about the arguments themselves (although he wished to reveal the various inconsistencies within the arguments) but the psychological reason for the arguments held. In *The Natural History of Religion* he outlines his belief in the psychological states of humans that lead them to particular metaphysical conclusions:

We are placed in this world, as in a great theatre, where the true spring and causes of every event are entirely concealed from us; nor

have we either sufficient wisdom to foresee, or power to prevent those ills with which we are continually threatened. We hang in perpetual suspense between life and death, health and sickness, plenty and want; which are distributed amongst the human species by secret and unknown causes, whose operation is oft unexpected, and always unaccountable. These *unknown causes*, then become the constant object of our hope and fear, and while the passions are kept in perpetual alarm by an anxious expectation of the events, the imagination is equally employed in forming ideas of those powers, on which we have so entire a dependence.¹

The protagonists in his dialogue, Philo, Cleanthes and Demea, are arguing for and against the existence of a deity and this leads them to discuss the argument from design and their respective views on nature. Cleanthes represents those who see design in nature and Philo represents those who do not. Although Cleanthes uses the ancient arguments, he also uses the discoveries of science at that time to support his beliefs. Cleanthes clearly is convinced that the new discoveries in science enhance the argument for design. Philo, however, is convinced otherwise. The argument from design uses the analogy of human production to understand the creation of nature by a deity. But Philo criticizes Cleanthes. He does not accept that the new discoveries give support to the design argument as Cleanthes does:

The discoveries by microscope, as they open a new universe in miniature, are still objections, according to you; arguments according to me. The further we push our researches of this kind, we are still led to infer the universal cause of all to be vastly different from mankind, or from any object of human experience and observation.²

¹ Hume, D. *Principle Writings on Religion including Dialogues Concerning Natural Religion and The Natural History of Religion*. Edited with an introduction by J. C. A. Gaskin. Oxford: Oxford University Press, 1993. p. 140.

² Hume, D. *Dialogues Concerning Natural Religion*. Edited with an introduction and notes by M. Bell. Harmondsworth, Penguin Books, 1990. p. 76.

Cleanthes replies to Philo's description of the discoveries in anatomy, chemistry and botany:

These surely are no objections... These only discover new instances of art and contrivance. It is still the image of Mind reflected on us from immeasurable objects.³

Philo has a non-teleological concept of nature. He refers back to the Greek and Roman thinkers, and Hume seems to show an influence from Lucretius in the arguments he gives his character:

Now if we survey the universe, so far as it falls under our knowledge, it bears a great resemblance to an animal or organized body, and seems actuated with a like principle of life and motion. A continual circulation of matter in it produces no disorder. A continual waste in every part is incessantly repaired. The closest sympathy is perceived throughout the entire system. and each part or member, in performing its proper offices, operates both to its own preservation and to that of the whole. The world therefore, I infer, is an animal, and the deity is the soul of the world activating it and activated by it.⁴

Philo's concept of the world is of a self-regulating system that looks after itself and corrects all faults in the system. It has no creator and it does not need human assistance. It is eternal and, having no beginning and no end, it has no purpose or direction. Cleanthes argues back that the world cannot be eternal because of progression in history which suggests a beginning and a final end. Philo believes in an inherent principle of order and that progression is an illusion. If the world

³ Ibid.p. 76.

⁴ Ibid. pp.80-81.

resembles an animal then its beginnings must be like that of an animal. There is no designer within nature, but everything occurs by chance:

If the universe bears a greater likeness to animal bodies and to vegetables, than to the works of human art, it is more probable that its cause resembles the cause of the former than of the latter, and its origin ought rather to be ascribed to generation or vegetation than to reason or design.⁵

Cleanthes argues against this view because he believes that if it was so then things could have happened in many different ways without fitting together, whereas in the world as we see it everything has a particular place in the whole and nature supplies everything that humans need. Demea adds that ‘chance’ is a word without meaning. There must therefore be an ultimate cause and it must be one with reason. These two opposing arguments are similar to those of the ancients as expressed by the Stoics and Epicureans, and Hume shows in his dialogues that these differing concepts of nature led to two different attitudes towards humanity’s place in nature as it did to the ancients. Cleanthes is optimistic about life and nature:

Health is more common than sickness: pleasure than pain: happiness than misery. And for one vexation which we meet with, we attain, upon computation, a hundred enjoyments.⁶

Philo is pessimistic. His view on the lot of men is similar to that of Lucretius. Life is difficult. Humans must work hard to gain some happiness. Nature is blind and uncaring:

⁵ Ibid. p.86.

⁶ Ibid. p.110

Look around this universe. What an immense profusion of beings, animated and organized, sensible and active. You admire this prodigious variety and fecundity. But inspect a little more narrowly these living existences, the only beings worth regarding. How hostile and destructive to each other! How insufficient all of them for their own happiness! How contemptible or odious to the spectator! The whole presents nothing but the idea of a blind nature, impregnated by a great vivifying principle and pouring forth from her lap, without discernment or parental care.⁷

Within this system Philo projects there is no right or wrong. Nature just happens, one event following another.

Hume is most likely expressing himself through the character of Philo. Although he never professed himself as an atheist or a total sceptic, he brings through his empiricism a sceptical position as regards metaphysical questions, for he denies that we can provide any antecedent justification for reasoning as we do from causes and effects, and therefore we cannot assume that the conclusion we reach must be true. On the other hand we normally are persuaded by the inferences that we make. His conclusion is that we can only accept the way we are. Much that we believe about the world, which we think is the result of reasoned argument, is in fact the result of emotional, imaginative responses to our situation in life. He attacked the argument from design as he believed that to perceive order or the causes of order in the universe is probably the result of an analogy to human intelligence. He claimed that the argument from design lacked a determinate base in experience, that it is untestable, unrevisable and claims a dogmatic finality and uniqueness inimical to genuine scientific enquiry.

⁷ Ibid. p.121.

Hume's conclusions on metaphysical questions are the result of his epistemological theory that relies on 'impressions' and 'ideas'. The extreme reductionism of his theory leads him to some unsatisfactory conclusions as regards to our ability to use reason and to find basic truths about the world. His emphasis on 'passions' and psychological states of humans as an explanation of human beliefs about the world questions many of the intellectual insights of the ancients. What Hume missed is that there are things that we learn which are neither things that we just do, nor things which could have conceivably been otherwise. We identify permanent objects in space and look for their causes and effects. In a Humean world there would be no order or persistent identities and we could learn nothing from it.

The consequence of Hume's philosophy is the annihilation of all rationalistic metaphysics and ethics. Instead he opened the door for a purely descriptive role for natural science and the inclusion of human thought and action as natural processes within the province of biology and psychology. But in his eagerness to ground all human knowledge as resulting from the input of the senses, he left many questions about the possibility of human knowledge unanswered. He also undermined the previous status of reason and regulated values to be only the result of the 'passions'. The extreme empiricism of Hume has had some serious consequences in later philosophy, of which not the least is the problem of the fact/value dichotomy. I shall be returning to this problem in the third part of my thesis.

As is well known in the philosophical world, Kant was inspired to write his three critiques in response to the scepticism of Hume's extreme empiricism. In a thesis of this length I am again limited as to how much of Kant's philosophy can be

included. I shall therefore be concerned only with those areas of his philosophy that have immediate relevance to the issue in hand.

Hume's scepticism led Kant to examine the limits of human knowledge. He considered it important to unite the rationalist and empiricist thinking that had divided the thinkers of the 17th century. Hume had been highly sceptical about the usefulness of metaphysical thinking. But Kant accepted the fact that metaphysical thinking was a part of human thinking in general and was interested in what could be claimed as metaphysical truths. In the *Critique of Pure Reason* and the *Critique of Practical Reason* Kant explored the extent of our cognitive powers which allow us to discover *a priori* truths about the world, such as the existence of objects, space and time, the order of nature, ourselves, freedom of the will and the possibility of morality and God.

In his thinking Kant was led to believe that the human mind in itself has an important role in the attempts of humans to understand the world in which they find themselves. Knowledge is gained through certain faculties and categories that the human mind supplies. Space and time, therefore, are not realities of the world as such but are the means by which humans conceptualise the world. These he calls intuitions:

Time and space are, therefore, two sources of knowledge, from which, *a priori* various synthetical knowledge can be drawn. Of this we find a striking example in the knowledge of space and its relations, which form the foundation of pure mathematics. They are the two pure forms of all intuitions, and thereby make synthetical propositions *a priori* possible. ⁸

⁸ Kant, I. *Critique of Pure Reason: a revised and expanded translation based on Meiklejohn*. Edited by V. Politis. London: Dent, 1993. p. 59.

Similarly there are a number of categories through which humans comprehend the world. There are twelve of these which are made up from four groups (of three categories each) under the headings of quantity, quality, relation and modality. These categories, as well as the intuitions of space and time, enable us to make synthetic a priori judgements, judgements which could not have come simply from empirical observations. Such judgements are that all properties in nature must inhere in substances, and that every event in nature must have a cause. The human mind can only make sense of what there is through these intuitions and categories and thereby Kant creates a division between what there is and what there appears to be to us. Kant calls things-in-themselves *noumena* and things-as-they-appear *phenomena*. Humans have access only to *phenomena*. The *noumena* can never be truly known. It can be immediately seen that Kant's division between *noumena* and *phenomena* would lead to problems in epistemology, for how can we ever know what there is if we have no immediate access to the things-in-themselves?

In his *Critique of Practical Reason* Kant deals with human freedom. He understands human freedom as outside the world of natural causes. Human freedom is concerned with the moral law and this is in the practical sphere of living. This thinking led Kant to assume that there are two different realms of reason: one that is concerned with natural concepts and one that is concerned with the concept of freedom in relation to humans alone. Again there is a division in Kant's philosophy, this time between the world of nature, which can be known through pure reason, and ourselves as beings that possess freedom, which can be known through practical reason. He sums up his philosophical account of the first two *Critiques* in the *Critique of Judgement*:

Our entire faculty of cognition has two realms, that of natural concepts and that of the concept of freedom, for through both it prescribes laws a priori. In accordance with the distinction then, philosophy is divisible into theoretical and practical.

The function of prescribing laws by means of concepts of nature is discharged by understanding and is theoretical. That of prescribing laws by means of the concept of freedom is discharged by reason and is merely practical. It is only in the practical sphere that reason can prescribe laws; in respect of theoretical knowledge (of nature) it can only (as by the understanding advised in the law) deduce from given laws their logical consequences, which still remain restricted to nature.

Understanding and reason, therefore, have two distinct jurisdictions over one and the same territory of experience. But neither can interfere with the other. For the concept of freedom just as little disturbs the legislation of nature, as the concept of nature influences legislation through the concept of freedom.⁹

Here Kant distinguishes between the laws of nature (scientific knowledge and causal laws) and the will. Humans are free and outside the laws of causation. It is in practical reality that we meet the concept of freedom. These two realms are vastly different from one another:

Albeit then, between the realm of the natural concept, as the sensible, and the realm of the concept of freedom, as the supersensible, there is a great gulf fixed, so that it is not possible to pass from the former to the latter (by means of the theoretical employment of reason), just as if they were so many separate worlds, the first of which is powerless to exercise influence on the second.¹⁰

Humans according to Kant's philosophy are, as a result of their freedom, apart from nature; they are free from its causal laws. But this strict division would leave an

⁹ Kant. I. *The Critique of Judgement*. Translated with analytical indexes by J.C. Meredith. Oxford: Clarendon Press, 1952. pp. 12-13.

¹⁰ Ibid. p.14

unsatisfactory account of the world. Kant, however, wishes to heal the breach and postulates the supersensible (the substrate that underlies the world of nature as it appears to us) that joins the world of nature and the world of human freedom:

There must, therefore, be a ground of the unity of the supersensible that lies at the basis of nature, with what the concept of freedom contains in a practical way, and although the concept of this ground neither theoretically nor practically attains to the knowledge of it, and so has no peculiar realm of its own, it still renders possible the transition from the mode of thought according to the principle of the one to that according to the principle of the other.¹¹

In the *Critique of Judgement* Kant deals with the problem of how to connect these two realms. Although some thinkers may find the *Critique of Judgement* the most difficult part of Kant's work to accept, it does appear to show how important to Kant was the concept of the supersensible structure in his philosophical thinking.

It is in the *Critique of Judgement* that Kant introduces the concept of the 'purposiveness' of nature. Kant held that we could not say that natural objects, or the world of nature, were designed for a specific purpose. To say this would be to imply that natural objects were not natural but artificial. The mode in which he used teleological explanations was different from previous thinkers in his understanding of nature. Prior to Kant the teleological explanation of nature was understood in an objective way in that the purpose of nature was held to be within natural objects themselves. But for Kant teleology as applied to nature is an epistemological principle. The concept of purposiveness helps us to reflect on the objects of nature. Teleology, in this way, has a heuristic or investigating value and it does not necessarily explain the way things are:

¹¹ Ibid. p.14.

Now the concept of an object, so far as it contains at the same time the ground of the actuality of this object, is called its end, and the agreement of a thing with that constitution of things which is only possible according to ends, is called the finality of its form. Accordingly the principle of judgement in respect of the form of the things of nature under empirical laws generally, is the finality of nature in its multiplicity. In other words, by this concept of nature it is represented as if an understanding contained the ground of the unity of the manifold of its empirical laws. The finality of nature, is therefore, a particular a priori concept, which has its origin solely in the reflective judgement. For we cannot ascribe to the products of nature anything like a reference of nature in them to ends, but we can only make use of this concept to reflect upon them in respect of the nexus of phenomena of nature – a nexus given according to empirical laws. Furthermore, this concept is entirely different from practical finality (in human art or even words) though it is doubtless thought after this analogy.¹²

In this passage Kant uses his constant guideline of ‘as if’. We cannot look at nature as having a final cause or purpose in reality, but in order to have any knowledge of it we need to think of it in that way, *as if* it had a purpose. This is particularly true of the biological sciences. So this notion of final causes as regards nature is, as Kant called it, a transcendental principle of judgement and not a metaphysical one. (‘Transcendental’ in Kant means ‘concerning the necessary conditions for the possibility of experiencing things and of describing what we experience’). It is only a judgement that attributes to nature a transcendental finality. This is the only way we can have knowledge of nature:

For, if it were not for this presupposition, we should have no order of nature in accordance with empirical laws and, consequently, no guiding-thread for an experience that has to be brought to bear upon

¹² Ibid p. 20.

these in all that variety, or for an investigation of them.¹³

Kant seems to be suggesting that, although nature may or may not have purpose within it, nevertheless in order to understand it we must view it teleologically. We give purpose to nature in order to understand it. But nature does not have objective finality and Kant criticized Plato who saw final causes in nature as objective. For Kant, this intellectual finality was 'simply formal, not real'. He also criticized those who saw nature having natural ends because so many things are as they are because of adaptation. For example pine forests grow where there is sand. He derided the notion of purposes in nature just for the sake of humans. For example, there are many natural products in cold climates that are useful for people who live there, but there is no necessity for them to be living there in the first place:

In cold lands, snow protects crops from the frost. It makes it easier for people to get together (by means of sleighs). In Lapland, the people find animals (reindeer) that they use to get together. These animals find adequate nourishment in a dry moss that they have to scrape out for themselves from under the snow. But they are also easily tamed and willingly permit people to deprive them of their freedom even though they could easily support themselves on their own. For other peoples in the same frigid zone, the sea holds rich supplies of animals that provide them not only with food and clothing, and with timber that the sea floats to them, as it were, as building material for their homes, but also with fuel for heating their huts. So here we have an admirable collection of cases where nature relates to a purpose: that purpose is the Greenlander, the Lapp, the Samoyed, the Yakur etc. And yet it is not clear why people should have to live in those regions at all...rather, we ourselves would then consider it impudent and rash even to demand that there be such a predisposition and to require nature to pursue such a purpose (on the ground that otherwise only people's extreme inability to get along with one another could have scattered them all the way to such inhospitable regions.)¹⁴

¹³ Ibid. p.25

¹⁴ Kant, I. *Critique of Judgement*. Including the First Introduction. Translated, with an introduction by W. S. Pluhar. With a foreword by M. J. Gregor. Cambridge: Hackett, 1987. p. 247.

Kant seems to mean here that it is the fault of humans where they live and it is not up to nature to supply the necessary means of survival. Human folly sends them to inhospitable places.

Kant argues against a mechanical nature. In this area he favours the vitalist's concept of nature over that of the mechanistic descriptions of Descartes and Hobbes:

Hence an organized being is not a mere machine. For a machine has only motive force. But an organized being has within it formative force, and a formative force that this being imparts to the kinds of matter that lack it (thereby organizing them). This force is therefore a formative force that propagates itself – a force that a mere ability of one thing to move another (ie. mechanism) cannot explain.¹⁵

But the capacity for nature to organize itself means, for Kant, that the analogy of a designer just does not work:

In considering nature and the ability it displays in organized products, we say far too little if we call this an *analogue* of art, for in that case we think of an artist (a rational being) apart from nature. Rather, nature organizes itself, and it does so within each species of its organized products; for though the pattern that nature follows is the same overall, that pattern also includes deviations useful for self-preservation as required by circumstances.¹⁶

Although there is no necessity for a designer, yet the objects of nature often appear to have been made for an end. Particularly within the natural sciences it is often difficult for scientists to free themselves from a teleological explanation:

¹⁵ Ibid. p.253.

¹⁶ Ibid. pp. 253-254.

It is a familiar fact that those who dissect plants and animals in order to investigate their structure and gain insight into the reasons why and to what end these plants and animals were given those very parts, their position and combination, and were given precisely that internal form assume this maxim as inescapably necessary – ie. the maxim that nothing in such a creature is *gratuitous*. They appeal to it just as they appeal to the principle of universal natural science – viz. that nothing happens by chance. Indeed, they can no more give up that teleological principle than they can this universal physical principle. For just as abandoning this physical principle would leave them without any experience whatsoever, so would abandoning that teleological principle leave them without anything for guidance in observing the kind of natural things that have once been thought teleologically, under the concept of natural purposes.¹⁷

Natural scientists may use a teleological principle, but this extrinsic finality of natural things does not mean there are ends in nature which justify that existence. Kant does not see final causes as a justifying explanation of the whole. Rivers are not there for the purpose of humans to be able to travel inland, although they are useful in this way. There is a difference between estimating anything as a physical end in virtue of its intrinsic form and understanding its existence as an end in nature.

It is in this latter understanding of an end in nature that Kant finds he needs to turn to the ‘supersensible’. It is this concept of the ‘supersensible’ that is the foundation of all Kant’s thinking, for the supersensible unites nature, human freedom and moral law, God and immortality. The moral law leads us to endeavour to achieve the final purpose. The supersensible substrate can never be known, in the sense that the things of science can be known, and so Kant does not say anything substantive about it. But the concept of the supersensible is almost certainly the essential basis of his philosophical thought and only through the acceptance of this

¹⁷ Ibid. p. 256.

concept can Kant's philosophy really be understandable. Although his philosophy argues against the superficial teleological explanations of nature, his own concept of nature is a teleological one. Later writers on Kant have not always acknowledged this side of his philosophy and some have even deliberately belittled this part of his thinking. Nevertheless it seems that if Kant's concept of the supersensible had been taken into account some of the philosophical problems that arose after his work would not have arisen. There is strong evidence in his work that Kant understood that it is through human freedom, humans as noumenon, that there is a link to the supersensible substrate. And it is only through humans that a final purpose can be reached:

Now, in this world of ours there is only one kind of beings with causality that is teleological, ie. directed to purpose, but also so constituted that the law in terms of which these beings must determine their purposes is presented by these very beings as unconditioned and independent of conditions in nature, and yet necessary in itself. That being is man, but man considered as noumenon. Man is the only natural being in whom we can nonetheless cognize, as part of his own constitution, a supersensible ability (*freedom*), and even cognize the law and the object of causality, the object that this being can set before itself as its highest purpose (the highest good in the world).¹⁸

It is through humans, as moral subjects, that there is a final purpose to creation:

Only in man, and even in him only as moral subject, do we find unconditioned legislation regarding purposes. It is this legislation, therefore, which alone enables man to be a final purpose to which all of nature is teleologically subordinated.¹⁹

¹⁸ Ibid. p. 323.

¹⁹ Ibid. p.323.

As moral beings humans are concerned with final purposes and this leads humans to making the assumption that there is a moral cause to the world if they are to be morally consistent.

Kant's teleological explanation of nature rests on his interpretation of humans as moral creatures through their freedom. In this way he understands humans as in some vital way apart from nature. As noumenon humans are a part of the supersensible substrate. Kant equates nature's purposiveness with some supersensible basis of the purposiveness which links together the other two concepts of the supersensible, nature as itself and that as required by the moral law. But the weakness of his account is that he can say nothing about the supersensible, for he admits that it can never be known. This gave problems to later thinkers who were inclined to reject anything that could not in essence ever be known. The noumena were dismissed as irrelevant.

Ultimately Kant's account of nature leads to humans being considered outside the laws of nature. We can only know nature through our own subjective judgements and the values of nature become human dependent. Kant did not intend this conclusion himself because his concept of God and the supersensible substrate prevented such a conclusion. But later thinkers de-emphasized his stance on God and adopted a more subjectivist interpretation. At the same time later thinkers were inclined to disregard the metaphysical arguments of the *Critique of Judgement* and to prioritise Kant's position in the first and second *Critiques*. However this was to lead to a vast division of thinking that has caused numerable social and philosophical problems, not least among them those within environmental ethics and ethics in general today.

PART II

HUMAN NATURE

Introduction

With Kant's philosophy we now have reached the point where our present concept of nature began to have its formation. It is at this point that the emphasis changes to the concern about the concept of human nature. This is because the problem increases as to how humans relate to nature, whether they are a part of nature or apart from nature, in the modern and postmodern contexts. There is an immense amount of literature that could be included but which will have to be passed over in a thesis of this length. I can only give some important trends that developed in the thinking of the nineteenth century which have strongly influenced the present day concept of nature and are the background to the debates in environmental philosophy today.

It was in the 18th and 19th centuries that writers began to express a concern for the amount of destruction humans had caused the environment. In general there was still a positive attitude towards humanity's control of the environment, but there was a growing awareness that human power could upset the balance of nature. This was most noticeable in America where primordial land was being destroyed at a rapid rate. The change of the environment in Europe had happened over such a long span of time that the extent of human impact on the countryside was not so obvious.

At this time science and technology were making tremendous strides and have ever since. Geology, geography, biology and the physical sciences were all areas of knowledge that were expanding rapidly. The increased knowledge increased humanity's control over the environment. With the increased control the damage that

could be done to the environment became more intense. This was a time when writers began to reflect on the power humans had over nature and questioned the relationship humans had to nature. It was also a time when the teleological explanation of nature was under attack. The world of science had become prominent and within science any explanation in terms of final causes was firmly discouraged.

The growth of humanity's power over nature and the extent of the change to the environment were both seen as positive by many:

The cultivation and great cities are reminders of power and of glory showing sufficiently that man, master of the domain of the earth has changed it and renewed its entire surface and that he will always share the empire with nature.¹

Those who followed this type of thinking showed their adherence to a concept of nature being wild and dangerous for humans. Under this ideology a tamed nature was a good nature. For others the extent of the change was seen as negative. Thinkers began to reflect back, much as the ancient Greeks had done, to a Golden Age. This was a reaction to the Enlightenment and many questioned the rational and mechanical foundations of western civilization. Writers became interested in 'primitive' forms of life. Travellers brought back tales of other societies that gave the illusion that there were other more peaceful and harmonious forms of existence. American Indians and Tahitians seemed to live idyllic lives compared to the Europeans. Many thinkers believed there had been a previous age when all of humanity must have lived this primitive, ideal life.

¹ Buffon, Georges Louis Leclerc, Comte de: *Histoire naturelle, generale et particuliere*. Paris: Imprimerie Royale, puis Plassan, 1749-1804. Vol. 12 pp. xiii – iv.

This cult of primitivism, which either looked back historically to a Golden Age, or geographically to a country far away, was most clearly expressed in the writings of Jean-Jacques Rousseau. Rousseau's theory was that humans had been corrupted by civilization and so had become tyrants over themselves and over nature. Humans should, according to Rousseau, return to nature. He opened his treatise on education with:

Everything is good as it comes from the hands of the author of nature, everything degenerates in the hands of man.²

Rousseau gave positive accounts of nature at a time when western civilisation was developing rapidly, but he failed to realize that he had the luxury to do so. As already shown in this thesis primitive humans were in the hands of the vagaries of nature and their relationship with nature had to be entirely pragmatic. In Europe of the 18th and 19th centuries many of the fears people had about nature had been diminished. With the growth of cities and the wealth that accumulated for many, there were those who had the leisure to reflect upon nature and view it aesthetically. The movement of the Romantics developed at this time. Romanticism was a reaction to the scientific revolution. From the comforts of an economically secure position, the Romantics criticized the scientists for their objective view of nature and refused to see it as only a potential for practical use. The German and English Romantics began to look at the environment from an aesthetic point of view and understood nature as having its own integrity, in some cases a purpose and meaning. In the literature of the Romantics,

² Rousseau, J-J, *Emile; or treatise on education*. Translated by W.H. Payne. Great Books in Philosophy. New York: Prometheus Books, 2003. p.1.

nature was viewed as dynamic and organic. Romanticism tried to defend a qualitative science in which humanity is not separate from nature. It is this aspect of their views that has been a welcome restraint on the growth of the scientific enterprise.

Wordsworth scorned the man of science who saw nature only in a quantitative way:

One that would peep and botanize
Upon his mother's grave.³

The Romantics encouraged a different approach to animals. Other species were not created just for human use but had intrinsic value. The poet William Blake expressed an identity with other creatures in many of his poems:

Am not I
A fly like thee?
Or are not thee
A man like me.⁴

The poets widened the moral community not only to animals but also to plants.

Wordsworth wrote:

I would not strike a flower as many a man would strike his horse.⁵

³ Wordsworth, W. 'A Poet's Epitaph' in Wordsworth, W. *Poems*. Vol. 1 edited by J.O. Hayden. Harmondsworth: Penguin, 1977. p. 396.

⁴ Blake, W. *Poems of William Blake*. Selected and introduced by P. Ackroyd. London: Sinclair Stevenson, 1995. p. 17.

⁵ Wordsworth, W. 'I Would Not Strike a Flower' in Wordsworth, W. *Lyrical Ballads, and Other Poems*. 1797-1800. Edited by J. Butler and K. Green. Ithaca: Cornell University Press, 1992. p. 312.

The settled society, economic wealth and control of nature brought this kind of romantic reaction. Well-fed and well-clothed people could begin to think of being vegetarian. Thinkers such as John Ray believed a vegetable diet was preferable to the 'butchery and slaughter of animals'. Arguments for vegetarianism became more widespread at this time. Jeremy Bentham in the 18th century changed the status of animals by giving the criterion of suffering as most important for moral consideration.

The Romantics not only opened the door to the appreciation of other species of animal but to wild nature in general. Before this time the cultivation of land was understood to be a positive occupation against the evils of the wilderness. But as more and more land was cultivated and Europe became prosperous there was nostalgia for what was lost and people began to appreciate unspoiled nature. Deserts, mountains, seas, woods and marshes were appreciated for what they represented – the primeval, the non-human, the instinctual and the natural. The wilderness became no longer the evil place to be feared but the source of spiritual renewal. Those who viewed nature in this new way were not those who had to earn a living from it. However, they brought to everyone's consciousness the fact that the growing power humanity had over nature was not entirely good. The right of humanity to have power over nature was first questioned at this time.

The dream of mastery over nature was almost a reality and this has continued today. Nature is no longer an immediate threat in many parts of the world: nature itself is threatened. With this power over nature the separation of humans from nature becomes more striking. However evolutionary theory revealed another way of understanding the relation of humans to nature. In the 19th century, Darwin's *Origin of Species* caused an outcry. Evolutionary ideas affirmed that humans were truly a

part of nature. Nowadays the ideas of genetic theory and natural selection are accepted in every day life as explanations for human nature.

In order to understand how we relate to the environment we need to understand how we perceive ourselves in relationship to nature. In the history of the concept of nature it is evident that there were two major concepts of the relationship of humans to nature that were implicit in the way people thought about themselves and how they interacted with the world around them. These two conflicting concepts are concerned with the question of whether humans can be considered as a part of nature or apart from nature. Thinkers of the past have assumed one or the other of these concepts of humanity. This puzzling aspect of ourselves influences us today in many of our practical decisions.

We need to untangle some of the problems that we have inherited. In the past people have failed to be clear and consistent about the nature of humanity. The idea of humanity as apart from nature had its origins in religious thought. People believed that they had souls which were separate from their bodies and could exist after the death of their bodies. The concept of soul, or spirit, had its origins early in the history of humanity and certainly was expressed by the ancient Greeks, particularly Plato, and, of course, was a central dogma in Christianity. But at the same time, humans understood themselves to be a part of nature not differing from other species in kind but only in degree. In this scheme of things people are mortal and there is no immortal soul. This dualistic view of ourselves is still prevalent today.

The *cogito ergo sum* of Descartes' philosophy encouraged the religious view of humanity being of two substances: that of the mind and the body. I am the thing that thinks and therefore essentially soul. In this view the external world is less real. It can lead to radical subjectivism and the problem becomes how we can know the

external world outside our own perspectives. This is the subjective view of ourselves: humans are apart from nature. But at the same time, through the influence of science, humanity is considered to be under the rule of physical laws in the same way as any other part of nature and human behaviour can be studied according to scientific laws as in psychology. This is the objective view of ourselves: humans are a part of nature. I shall look at the way these two views of human nature in relation to nature have developed in modern thinking.

The religious view of humans assumes that aesthetic and moral values are given by God. These values can be found by anyone because the spiritual side of us links us to the immortal. Outside the religious framework values are the concern of the individual but the search for values becomes problematical. Science views the universe as morally and aesthetically neutral. Morality and beauty are in the eye of the beholder. I shall look at the problem of finding value in post-Kantian philosophy.

Post-Kantian philosophy has seen a division in philosophy involving two very different methods or approaches. On the one hand there is what is termed Continental philosophy, largely coming from philosophers in Europe although not entirely, and on the other hand there is analytical philosophy that developed in England, but also had followers in Europe, and that spread across to America. Analytical philosophy based itself on science. It looked at problems and tried to clarify them in order to make sense of them. It has sometimes been sceptical at language's ability to communicate meaning. The point of the analytical enterprise is to develop a systematic theory of meaning. It tries to rid words and phrases of the ambiguity that results from sloppy thinking and writing and reduce the imprecision of everyday language to bring out the real underlying meaning. The scientific method is followed in all areas of philosophy,

even in ethics, and the philosopher becomes a professional problem-solver much like a scientist or mathematician.

Continental philosophy, however, looks at the broader picture and is interested in social and political aspects of humanity. This wider area of interest has probably led Continental philosophy to have more influence on the general public. Recently philosophers have tried to bridge the gap between analytical philosophy and Continental philosophy, but for over a century the two have dealt with the same problems in very different ways. Their difference in style masked their similar concerns. They were both influenced by Kant's philosophy, but each took from his philosophy a very different starting point.

I shall now look at these two reactions to Kant in the following chapters and examine their interpretations of human nature. The impact of science and the scientific method on analytical philosophy has been highly significant, so I shall also examine the assumptions within science, its tendency to reductionism and its influence on our concepts of nature and human nature. But first I shall look at the influence of Continental philosophy on the concept of human nature and our relationship to nature.

Chapter 1

Continental Philosophy

Kant had argued that we cannot understand the world through intuition alone but only through the synthesis of intuition and concepts. We cannot know the world as ‘thing-in-itself’, but only through an intellectual intuition. Continental philosophers took this part of Kant’s thought as their starting point.

Fichte, a follower of Kant, emphasized this point of Kant’s philosophy. He described self-knowledge as an intuiting of the self and that this was the only intellectual intuition. The idea of the self was further developed within Continental philosophy after Fichte and led to an emphasis on the subjective stance:

Underlying knowledge, yet outside its purview, is the free and self-producing subject. The destiny of the subject is to know itself by ‘determining’ itself, and thereby to realize its freedom in an objective world. This great adventure is possible only through the *object*, which the subject posits, but to which it stands opposed as its negation. The relation between subject and object is dialectical – thesis meets antithesis, whence a synthesis (knowledge) emerges. Every venture outwards is also an alienation of the self, which achieves freedom and self-knowledge only after a long toil of self-sundering. The self emerges at last in possession of the Holy Grail: an intellectual intuition not of itself only but of the whole world contained in itself as in a crystal ball.¹

The self is separated from the not-self, and, although it strives for a unity with the whole outside itself, it has not yet achieved it. Continental philosophy, with its involvement with the self, is also concerned with human freedom, with self-knowledge and with the concept of humanity constructing their world around them.

¹ Scruton, R. ‘Continental Philosophy’ in *The Oxford Illustrated History of Western Philosophy*. Oxford: Oxford University Press, 1994. pp.197-198.

Kant's concept of the *noumena* is rejected because it can never be known. Without the metaphysical underpinnings of Kant's philosophy, Continental philosophers became entangled with the self and the way the self can construct its world. The problem of the subject (self) and object (not-self or external world) becomes complex without the metaphysical foundation of that which underpins Kant's philosophy.

Fichte offered a metaphysical solution to the problem of the human condition. He believed that the self would eventually possess an intellectual intuition of itself and the whole world contained in itself. Schelling, following Fichte, offered a different solution to the subject/object dichotomy. He developed Kant's transcendental idealism by presenting two philosophies: the subjective, dealing with the self and its freedom; and the objective, dealing with the natural world. These two worlds have a common source in the transcendental subject. Schelling was strongly influenced by Kant's *Critique of Judgement*. Through the aesthetic experience we can harmonize nature and intellect, object and subject, non-conscious and conscious activity.

Continental philosophy, with its emphasis on the self, understands nature as outside of the self. The thinking eventually led to the idealism of Hegel. Hegel introduced a historical, evolutionary perspective to philosophy:

In rough outline, however, he saw the world as a whole on the model of a mind, a mind which, as it were, projects an object ('nature') of which it can be *conscious*. This object develops by stages into men, and they become conscious not only in various ways of nature but of the cosmic mind itself and its relationship to nature. The emergence of men and the growth of their understanding represents the increasing *self-consciousness* of the cosmic mind. This self-consciousness is completed by Hegel's own system, in which the whole process has become entirely transparent to us.²

² Inwood, M. *Hegel*. London: Routledge, 1983. pp.1-2.

Inwood describes the way in which Hegel understands the human condition to be one which is a journey to a final goal. The final goal is to be the achievement of absolute knowledge. Later thinkers rejected the final goal, but accepted Hegel's concept of the journey.

Hegel understood the human consciousness to be not just of the individual but of the entire human culture of each period of time in history. The human consciousness, in its entirety, developed through various stages. At each stage consciousness, or *geist* (spirit), adopts a certain way of understanding the world (including itself) only to find out that this is incoherent and thereby a more adequate conception evolves. Therefore our understanding of the world is caused by a continuing conceptual revolution. All cultural changes and developments within the sciences are a result of the spirit changing the categories in which it interprets the world around it. Hegel did not mean that these changes occur haphazardly and will continue to do so throughout human existence, for his philosophy was governed by a belief in a general progression towards the final goal. Without this belief there is no progression and changes are random.

The concept of self in Hegel's philosophy is an introspective one: a person's body is an extrinsic part of the individual, as simply one of the objects of which the self is aware. Thinking, however, is identical with the self. Hegel emphasizes the concept of ourselves as thinking things separate from the external world. We determine the external world by our use of categories and it is therefore understood in a mediated manner. Our knowledge of ultimate reality is never direct. Inwood summarizes Hegel's belief in the prominent part active thinking takes in humans obtaining knowledge of the external world:

It is only by applying thought to my sensations and thus organizing them in a coherent and interconnected way that I can think of them as representing external objects; and it is only if I can do this that I can distinguish between what is objective, external things, and what is subjective, my conceptions for example and my sensations; the application of thought to my sensations is therefore necessary if I am to be aware of what is mine and what is not.³

Hegel's idealism colours his perception of nature in a particular way. He understands humans as separated from a unity with nature because of evil. We can relate to nature in two ways: either in a practical day-to-day way, or in a theoretical way. It is this latter way that causes us problems when we think about our relationship to nature. Hegel asks: 'What is nature?':

It is through the knowledge and the philosophy of nature that we propose to find the answer to the general question. We find nature before us as an enigma and a problem, the solution of which seems to both attract and repel us; it attracts us in that spirit has a presentiment of itself in nature; it repulses us in that nature is an alienation in which spirit does not find itself.⁴

It is because of our consciousness that we find ourselves separated from nature. By looking at nature in a theoretical way, as in science, we find problems about ourselves in relationship to nature:

...we... find that the theoretical approach is inwardly self-contradictory, for it appears to bring about the precise opposite of what is intended. We want to know the nature that really is, not something which is not, but instead of leaving it alone and accepting it as it is in truth, instead of taking it as given, we make something completely different out of it. By thinking things we transform them into

³ Inwood, 1983. op. cit. p.37.

⁴ Petry, M. J. ed. tr. *Hegel's Philosophy of Nature*. Edited and translated with an introduction and explanatory notes by M.J. Petry. London: Allen and Unwin, 1970. p.194.

something universal; things are singularities however, and the lion in general does not exist. We make them into subjective things, produced by us, belonging to us, and of course peculiar to us as men; for the things of nature do not think, and are neither representations nor thought.⁵

Hegel seems to mean that by trying to understand nature we change its very essence and thereby become alienated from it. His philosophy puts an emphasis on the subject; so human consciousness is always obstructive to understanding the external:

Our aim is rather to grasp and comprehend nature however, make it ours, so this is not something beyond and alien to us. This is where the difficulty comes in. How are we as subjects to get over into the object? If we venture the leap over this gap, and, while failing to find our footing, think we have found nature, we shall turn that which is something other than we are into something other than what it is.⁶

This problem became a difficulty for later thinkers, but within Hegelian philosophy this alienation from nature can eventually be overcome. It is part of his metaphysical system that all things are in a state of becoming and eventually all will be spirit. The teleological aspect of Hegel's thinking gives a solution to human alienation.

Hegel also developed the idea of will and power. Kant first introduced the concept of will as regards to the nature of humanity, but in Hegel the emphasis on the will is increased because of his concept of the self. The self tries to possess the world and make it belong to itself. It wants, or desires, the world about it. But then there is opposition. The world is not merely passively unco-operative but actually resists the demands of the self. It becomes the other. Hegel describes the 'life and death

⁵ Ibid. p.198.

⁶ Ibid. p.198.

struggle with the other', in which the self begins to know itself as will, or power, confronted by other wills.

Schopenhauer also substantially accepts Kantian philosophy. The world cannot be known only through perception but needs also the veil of intellect to be understood. Space, time and causality are given by the intellect. Kant held that beyond the veil of perception there exists the real world of *noumena* which can only be reached by humans through the exercise of the free will. Schopenhauer develops this area of Kant's philosophy but he rejects Kant's metaphysics and denies that humans are linked by free will to God and immortality and thereby to ultimate reality. Ultimate reality for Schopenhauer is a blind, universal, eternal force or urge and striving – the metaphysical will.

Schopenhauer begins his argument with the self: things exist for me only as I perceive and understand them. The world of perception is then divided into the 'I', the subject of perception, and the objects that are perceived. The things in the material world exist (for oneself) as perceived objects. But subject and object cannot be separated. Intelligence and matter are a necessary part of one another. Therefore intelligence as well as matter is part of the world of representation. But the things of intelligence are an illusion. Schopenhauer thinks that through introspection we can reach reality, for via introspection we can find our own will. Will and action are the same thing; so the body becomes a representation of the will. The one reality is the will and this will is one will undivided without reason or purpose. Reason is unitary but has plural manifestations which are the world we see. All nature whether organic or inorganic, is a manifestation of the will. This metaphysical will just *is* with no value, purpose or reason. Individuals may manifest this will as if it had purpose but this is part of the illusion.

In his book *On Human Nature* Schopenhauer offers a very bleak picture of humanity. His pessimism leads him to recognize only the evil actions of humans and to be blind to any positive attributes that humans may possess. He has an extremely negative view of human nature:

In every man there dwells, first and foremost, a colossal egoism which breaks the bounds of right and justice with the greatest freedom, as everyday life shows on a small scale, and as history on every page of it on a large. Does not the recognized need of a balance of power in Europe, with the anxious way in which it is preserved, demonstrate that man is a beast of prey, who no sooner sees a weaker man near him than he falls upon him without fail? and does not the same hold good of the affairs of ordinary life? But to the boundless egoism of our nature there is joined more or less in every human breast a fund of hatred, anger, envy, rancour and malice, accumulated like the venom in a serpent's tooth, and waiting only for an opportunity of venting itself, and then, like a demon unchained, of storming and raging.⁷

Schopenhauer sees the striving of will throughout nature, but humans are different in the particularly unpleasant expression of that will. Only humans can be diabolically cruel, unlike any other creature. Schopenhauer does not perceive this as evil in human nature, but the frustration of the will to live:

It is a fact then, that in the heart of every man there lies a wild beast which only waits for an opportunity to storm and rage, in its desire to inflict pain on others or, if they stand in his way, to kill them. It is this which is the source of all the lust of war and battle. In trying to tame and to some extent hold it in check, the intelligence, its appointed keeper, has always enough to do. People may, if they please, call it the radical evil human nature – a name which will at least serve those with whom a word stands for an explanation. I say, however, that it is the will to live, which, more and more embittered by the constant sufferings of existence, seeks to alleviate its own torment by causing torment to others.⁸

⁷ Schopenhauer, A. *On Human Nature: essays (partly posthumous) in ethics and politics*. Selected and translated by T.B. Saunders. London: Swan Sonnenschein & Co., 1902. p.20.

⁸ Ibid. pp.22-23.

Schopenhauer's philosophy is at odds with the mechanical description of the world found in science. The nature of Schopenhauer is that of desires and struggles, the expression of the striving of the will. The will is life, but it is blind and selfish, without purpose.

The emphasis on the self in German Idealism appears again in existentialism. Søren Kierkegaard is often regarded as the first existentialist. Existentialism is a philosophical movement which puts the emphasis on the individual's responsibility to himself. Here again are the themes of continental philosophy: choice, subjectivity and isolation. This developed in more recent philosophy to viewing the human condition as one of despair.

Kierkegaard's existentialism is developed within a Christian perspective. However it is his break with the rationalist thinking of many philosophers, including that of Hegel, that is important. For rationalist philosophers it is possible to transcend finitude and individuality by adopting the standpoint of pure thought. Rationalism was first in evidence in Greek thinking. Humans were understood to have a rational spirit that takes them beyond the world of appearances. Existentialists abandon this aspect by affirming that humans can never go beyond the individual experience. We are always trapped within a human perspective.

This philosophical point of view has tremendous implications for ethics and any philosophical discussion on values. Objective truth is lost. Kierkegaard accepted that there were no objective values, but he based his morality on religious faith. According to Kierkegaard our existentialist predicament can only be transformed by faith, which is subjective, and not by reason.

In Nietzsche's philosophy the potential nihilism within Kant's philosophy which the critics had unveiled finds full expression. Kant had taken a middle path between dogmatism (belief upon authority) and scepticism (doubt about all belief). This middle path would be achieved by examining all our beliefs according to eternal laws of reason. However critics had revealed a problem in Kant's philosophy. If reason should examine all, then it must examine itself, and this becomes the problem of how self-criticism does not become total scepticism. The result is nihilism; doubt about all beliefs. The problem of the authority of reason is one of the defining issues of continental philosophy and it appears most fully in Nietzsche's philosophy.

Nietzsche has been interpreted in many ways and his style of writing is attractive to many people. Whatever the quality of his philosophy, he has become extremely important because of his influence on modern day thinking. He takes up the criticism of the authority of reason and the emphasis on the self and the individual experience that was already the concern of continental philosophers. He denies absolute truth:

For Nietzsche, there is no absolute truth because there is no absolute perspective. It is not possible to escape from perspectives to understand what the world is like beyond all perspectival interpretations. Nietzsche thinks that all understanding is essentially specific, which means that it necessarily presupposes some point of view, some organizational center of interpretation. What would be required for attaining absolute understanding is a point of view which was perspectival and yet transcended all perspectives at the same time. To want to attain absolute truth, then, according to Nietzsche, is to demand what is logically impossible.⁹

⁹ Moles, A. *Nietzsche's Philosophy of Nature and Cosmology*. New York: Peter Lang, 1990. p.36.

He also believed that there were no eternal substances and no fixed, stable objects in the world. Similarly there are no fixed, universal moral values. Fixed values are continually being undermined. He saw Western culture as evolving inevitably and self-destructively towards a point of radical inner change:

Since Copernicus man seems to have been on a steep slope-
from now on he rolls faster and faster away from the centre-
in what direction? towards nothingness? towards the piercing
feeling of his nothingness?¹⁰

Nietzsche's conclusion is that there is nothing of objective value in the world. We have to create our own world. Taking the existentialist's stance he emphasizes the point that humans must take responsibility for the knowledge they seek and how they behave to one another. The emphasis is on the individual as in Kierkegaard and there is no appeal to any transcendent understanding of the whole. The subjective importance of learning about the world that appears in the philosophies of Kant and Hegel is accepted by Nietzsche, but he discards the transcendent metaphysics. The search for knowledge is emptied of its purity and truth and becomes only an exercise of will to power:

The world seen from within, the world described and defined
according to its intelligible character – it would be 'will to
power' and nothing else.¹¹

Schopenhauer's vision of ultimate reality being the will to power is diminished into the individual's will:

¹⁰ Nietzsche, F. *On the Genealogy of Morals: a polemic. By the way of clarification and supplement to my last book Beyond Good and Evil*. Translated with an introduction and notes by D. Smith. Oxford: Oxford University Press, 1996. p. 130.

¹¹ Nietzsche, F. *Beyond Good and Evil: prelude to a philosophy of the future*. Translated by R.J. Hollindale with an introduction by M. Tanner. London: Penguin Books, 2003. p.67

To be unified, it is necessary that the drives have something in common. This shared characteristic, according to Nietzsche, is their will to power. By alliance and opposition, each achieves higher power than it would have achieved singly. In the process the body as a totality maximizes its level of power. At this point Nietzsche makes a surprising move, considering his usual criticism of attempts to understand things as simple and integral when investigation reveals them as complex and plural. He claims that the body itself is will to power, not only because all its components drives, considered separately, are will to power, but by virtue of being an integral system of will to power itself.¹²

Nietzsche understands the will to power as the individual (any living thing) seeking growth for itself. His interpretation differs from the Darwinian concept of natural selection (survival of the fittest) by stressing the individual's need to expand rather than just survive. Everything in nature, including humans, has an active will to power. Self-preservation is not the ultimate goal (which only happens in times of decadence). The goal is the individual's own growth in opposition to everything else:

In this state one enriches everything out of one's own fullness: whatever one sees, whatever one wills is seen swelled, taut, strong, overloaded with strength. A man in this state transforms things until they mirror his power – until they are reflections of his perfection.¹³

This is a doctrine of the stronger ruling over the weaker (although the strong need not be physically stronger) through the will to power. It is the will to be master.

Nietzsche praises the will to power and its expression when it is practised overtly.

However, power as practised through diverse means he despises. This struggle of will

¹² Moles. 1990. op. cit. p.111.

¹³ Kaufmann, W. *The Portable Nietzsche*. Selected and translated with an introduction, prefaces, and notes by W. Kaufmann. London: Chatto and Windus, 1971. p.518.

takes place throughout nature. It results in deception as a means of power. Animals gain power by the act of deception because it is a form of defence

Nietzsche defines spirit as a type of force. Humanity has achieved supremacy over other animals by this spirit. Humanity is not special in Nietzsche's eyes because of some hidden purpose, but just because humans have gained more 'spirit' (force) over other animals by their ability to deceive for the sake of defence. Humans are just one type of animal and do not take part in anything divine. But they are the strongest because of their cunning:

We have become more modest in every way. We no longer derive man from 'the spirit' or 'the deity'; we have placed him back among the animals. We consider him the strongest animal because he is the most cunning: his spirituality is a consequence of this. On the other hand, we oppose the vanity that would raise its head again here too- as if man had been the great hidden purpose of the evolution of the animals. Man is by no means the crown of creation: every living being stands beside him on the same level of perfection. And even this is saying too much: relatively speaking, man is the most bungled of all the animals, the sickliest, and not one has strayed more dangerously from its instincts. But for all that, he is of course the most interesting.¹⁴

Nietzsche does not regard humans as the best animals, only the most cunning.

Nietzsche's description of human nature is pessimistic. The individual strives to impose his will on others by the use of deception in a world that has no ultimate reality or true value. With this kind of analysis of human nature there is little direction on how we are to value one another let alone the environment around us. If the emphasis was on the individual and his need to impose his will, then there would be little point in discussing joint ventures and an individual would be more concerned with his present survival than any survival of nature around him. There are no

¹⁴ Kaufmann, 1971. op. cit. p. 580.

teleological explanations within Nietzsche's philosophy, no sense of purpose or direction for any creature, least of all for humans.

Studying Nietzsche we can see in him the culmination of a particular metaphysical process beginning with Descartes. It is the undermining of any religious and teleological perspective to philosophical speculation. Kaufmann sums this up in his introduction to his collection of Nietzsche's works, *The Portable Nietzsche*:

If one considers the history of modern philosophy from Descartes, it is surely, for good or ill, the story of an emancipation from religion. Or conversely: each philosopher goes just so far, and then bows to Christianity and accepts what becomes unacceptable to his successors. Descartes resolves to doubt everything, but soon offers proofs of God's existence that have long been shown to be fallacious. A similar pattern recurs in Hobbes and Spinoza, though they stray much further from all orthodoxies, and, a little later, in Berkeley and Leibniz. Locke is an empiricist who cites scripture to his purpose; Voltaire is an anti Christian who accepts the teleological argument for God's existence. Kant sets out to smash not only the proofs of God but the very foundation of Christian metaphysics, then turns around and postulates God and the immortality of the soul, preparing the way for Fichte and idealism. Schopenhauer finally breaks with Christianity but accepts the Upanishads from Hinduism. Nietzsche is one of the first thinkers with a comprehensive philosophy to complete the break with religion.¹⁵

With the breakaway from religion in philosophy, teleological explanations for humanity and nature are discarded. There is now no metaphysical foundation in which humanity can be linked to nature in a purposeful way. Nietzsche maintains that all living things, including humans, are striving against one another. This is not a philosophy that can support any kind of positive attitude to the environment, but it has been one that has been overtly or covertly largely accepted today within a capitalist society based on competition.

¹⁵ Ibid. p.17.

Phenomenology is another strand of Continental philosophy. The philosophies of Husserl and Heidegger have been the most influential in this area. In phenomenology knowledge is based on the subjective experience. Through the phenomenological reduction, according to Husserl, we find our essential nature which is the subject and the knower, but never the known. Philosophers in the modern tradition become involved in the way the subject (ourselves) conceptualise the world. Dilthey understood human action within the world to be different from the scientific attitude. We see the world under the aspect of our own freedom and describe it accordingly. We are interacting with the world, moulding the world through our own descriptions. In this way modern philosophy became concerned with meaning. Humans do not explain the world, but endow it with meaning and, therefore, discussions about ultimate reality or eternal truths become a fruitless endeavour. We can only be concerned with the meaning we ourselves impose on the world.

Heidegger concentrates on *Dasein* (Human Being). The question of Being is important because of its contingency in the world; its 'thrownness'. Each of us must come to terms with our contingency. The problem, and solution, to it are existential. We are concerned with our being in the world. Heidegger distinguishes between person and thing. Things are 'ready to hand' and 'to be used'. This is how objects appear to us. We also have relations to others, whether humans or the rest of nature. Heidegger calls this state 'being-for-others'. Another state of being is when I see that I alone have the question of being and responsibility for it. This is called 'angst'. In this philosophy we see the emphasis on the individual trying to constitute his world through interaction with things and others.

Sartre's philosophy describes the psychological state of humankind within the world that can only have meaning through individual experience. Existence precedes

essence. Human nature is not a given. At the heart of us is Nothingness, and humans must make their own beings to fill the Nothingness within them. Objects exist but they exist without meaning. The existentialist finds the world of being incomprehensible and gratuitous. A human made object, such as a hammer, does possess an essence that was in the maker's mind before the hammer was made. But things that exist independently of a person's intention do not have an essence. Roquentin in *La Nausee* contemplates the roots of a chestnut tree. The abstract idea of a 'root' may contain essence and be defined by it a priori but the definition does not explain why this particular root exists in physical, tangible presence. Existence is a brute fact; things exist without reason. Sartre describes the realization of the brute existence of things as creating within one the sense of nausea.

Humans, faced with this world deprived of meaning and motives, may feel alone and unprotected. It is a depressing realization but the solution to this situation is that humans can come to understand themselves as being free, unlike other things. Humans can create their own essence, which things cannot. Things are trapped, imprisoned in a mire of non-meaning. Only humans are free to define themselves and to create their own values. Human reality is therefore distinguished from the rest of reality. The abstract notions of good and evil no longer mean anything and therefore such values no longer exist in a determined state. Values are not objective nor to be found in the exterior world, for humans are free to create them for themselves. The free will that Sartre gives humans is different from the notion of free will as within a religious context where humans are free to choose between the good and evil that is in the world. For Sartre humanity is separated from the rest of nature by this freedom. Nature is brute fact with no reason for existence. In humanity alone is there reason for existence and this must be created, not found, by humanity alone.

Humans try to deny their freedom and become like objects. Sartre calls this *mauvais foi*, or bad faith. Humans are free to invent meaning and they try to escape this by various ways, as when they follow set codes of morality. But for Sartre morals in a world without the absolute of good and evil are not to be observed in blind obedience to a code. Morals are to be followed in a free and conscious expression of the individual's choice. This, of course, puts enormous responsibility on the individual and most people try to avoid this.

We can see that Sartre's philosophy is sadly lacking any guidelines for a constructive way of caring for the environment. His existentialism is essentially human dominated. The only world that exists is the human one and the only problems are human ones. Humans must deal with their freedom but nature stands outside the debate. Humans are not linked in any way to nature; in fact the brute fact of nature is disturbing because it lacks any meaning. Values are entirely within the human dimension and there does not seem to be any reason within Sartre's philosophy to put independent value on nature.

Sartre himself came to be dissatisfied with his form of existentialism. It results in a form of solipsism and Sartre realized that individuals cannot find values within their own existence. His turning to Marxism must surely have been the result of his understanding of the need for humans to co-operate with one another and form social bonds.

It is difficult to include all the Continental philosophers in this thesis, so only major trends can be mentioned. A particular movement of the late 20th century should be included. Although there are many different thinkers within this movement who would not wish to be thought as part of one, they all contain similar themes of thought. This movement, which is often called post-structuralism, argued against all-

encompassing explanations of human behaviour, such as Marxist, Freudian or Structuralist ones. These systems of thought tried to understand humans within a totalising vision. Freud and Marx were concerned to give a particular structure to the interpretation of human nature and behaviour. By becoming a Marxist, Freudian or Structuralist one was meant to be able to make sense of socio-historical processes (Marx); human behaviour (Freud); or understand the sign systems that constitute the world of human experience (Structuralists). All three systems of thought were engendered within a tradition of totalizing intellectual thinking dating from the Enlightenment of the 18th century. The values of the Enlightenment were: belief in liberal humanism; the power of reason to resolve human problems and a commitment to improve the material quality of life. It was a project to liberate humanity from oppression. These appear good values in themselves but the post-structuralists rejected these types of total structure systems as too authoritarian.

Structuralism can be seen as a brief backward look to the values of the Enlightenment, but the main trend of modern continental thinking has been the emphasis on the individual, the subject and the subjective stance as in post-structuralist thought. Post-structuralism covers a variety of themes and positions: Foucault's archaeological and genealogical approach; Derrida's deconstruction; Deleuze and Guattari's schizoanalysis; Lyotard's post-modernism, and various forms of feminism. All argue against the authoritarian implications of a structuralist position. As Ferré says in his book *Being and Value*:

Post-structuralists are especially averse to anything unchanging or 'ahistorical'. Such ahistoricity might suggest dreaded 'absolutism', which might inflict 'grand unifying perspectives' or 'theories' (which totalise and lead to hegemony). From these aversions we may correctly infer that post-structuralists tend to value 'pluralism', 'change', 'incommensurability',

‘flexibility’, ‘playfulness’, and the ‘uniqueness’ secured by finding ‘differences’ (‘differance’, Jacques Derrida; ‘differend’, Jean-Francois Lyotard) everywhere.¹⁶

I shall look particularly at Foucault’s work as it is highly representative of post-structuralist thinking.

His approach to tackling problems has been influential on some thinkers in environmental debates, although he, himself, disregarded nature. It is perhaps rather perverse to use the thoughts of a philosopher who had so little time for nature himself in discussing environmental problems and it is perhaps in this realization that one can trace some inappropriate approaches to the problems of the environment. However, Darier in his book of collected essays, *Discourses of the Environment*, believes that Foucault’s approach is valid:

If one shouldn’t look in Foucault for an obvious aesthetic appreciation and/or some empathy with nature, it doesn’t mean that Foucault’s work is irrelevant or unimportant for environmental thinking. In fact, as this collection of essays illustrates, Foucault’s concepts can be made highly relevant to environmental thinking, whatever attitude to ‘nature’ Foucault himself might have held....Foucault was advocating the ‘total effacement of the individual characteristics of the writer’. He also systematically resisted the boxing of his work in the existing intellectual categories such as ‘structuralism’, ‘poststructuralism’, ‘modernism’ or ‘postmodernism’. In order to achieve this he employed several ‘de-locations’ in the form of his research... The rupture between ‘author’ and ‘text’ explains how concepts can have unintended, unpredictable effects in ‘back of the author’. I would argue that despite his having ‘turned his back to nature’ Foucault’s writings are having profound, albeit indirect, effects on environmental thinking. The virulent critique of Foucault by many environmental thinkers, via the postmodernist category, may also indicate that Foucault is having an effect ‘in the back’ of environmental thinkers themselves.¹⁷

¹⁶ Ferré, F. *Being and Value: toward a constructive postmodern metaphysics*. Albany: State University of New York Press, 1996. p.281.

¹⁷ Darier, E. ‘Foucault and the Environment’ in Darier, E. ed. *Discourses of the Environment*. Oxford: Blackwell Publishers Ltd., 1999. p.6.

That environmental philosophers have accepted Foucault's thinking means that he has been extremely influential on thinking in general today.

In his work we can see the growth of a particular type of thinking that has its roots in the existentialism of Kierkegaard and developed in the works of Nietzsche and Sartre. This is the emphasis on the individual as an experiencing centre. It is this particular point of view that has had so much impact on how we perceive ourselves metaphysically. It has also affected the way we understand our system of values which has become such a central topic of environmental philosophy. Foucault abhors the grand schemes of the Enlightenment and rejects Kant's approach. Philosophy for Foucault is a critique. The criticism consists of analysing and reflecting upon limits but not in a Kantian way:

But if the Kantian question was that of knowing what limits knowledge has to renounce transgressing, it seems to me that the critical question today has to be turned back into a positive one: in what is given to us as universal, necessary, obligatory what place is occupied by whatever is singular, contingent and the product of arbitrary constraints? The point, in brief, is to transform the critique conducted in the form of necessary limitation into a practical critique that takes the form of a possible transgression.

This entails an obvious consequence: that criticism is no longer going to be practical in the search for formal structures with universal value, but rather as a historical investigation into the events that have led us to constitute ourselves and to recognize ourselves as subjects of what we are doing, thinking and saying. In that sense, this criticism is not transcendental, and its goal is not that of making a metaphysics possible: it is genealogical in its design and archaeological in its method. Archaeological- and not transcendental- in the sense that it will not seek to identify the universal structures of all knowledge or of all possible moral action but will seek to treat the instances of discourse that

articulate what we think, say and do as so many historical events.¹⁸

In this quotation one can see the influence of Nietzsche in the genealogical approach to understanding humanity. There is no ultimate reality or truth to be discovered, no essence that could be called human nature, simply an historic look backward to understand how we have arrived where we are now. Emphasis is put on the subjective viewpoint and human freedom. The objective viewpoint is discarded.

Following Nietzsche, Foucault also emphasizes the will to power. The accumulation of knowledge is an expression of this will to power. Power and truth are linked:

The important thing here, I believe, is that truth isn't outside power, or lacking in power: contrary to a myth whose history and functions would repay further study, truth isn't the reward of free spirits, the child of protracted solitude, nor the privilege of those who have succeeded in liberating themselves. Truth is a thing of this world; it is produced only by virtue of multiple forms of constraint. And it induces regular effects of power. Each society has its regime of truth, its 'general politics' of truth: that is, the type of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true.¹⁹

Like Nietzsche and Sartre, Foucault is an anti-essentialist. There is no universal human essence. His understanding of power is also anti-essentialist. Any concept of power is historically contingent and not absolute. He does not define power outside the limits of what power is currently understood to be. Power, for Foucault, is not what one authority has. Power is relational and rarely an absolute, so it cannot be as the Marxists have perceived it. Foucault's concept of power is more

¹⁸ Foucault, M. 'Truth and Method' in Rabinow, P. ed. *The Foucault Reader*. Harmondsworth: Penguin, 1991. pp. 45-46

¹⁹ Foucault, M. 'Truth and Power' in *Ibid.* pp. 72-73.

positive in that it is not repressive and may have normalizing effects on populations. It is a way of constructing identities; relations of power give identity to individuals. Freedom, therefore, shows itself through relations of power: power is not deterministic. The field of power imposes constraints about the possible options open to individuals and groups, but it is those individuals and groups who make choices to accept those constraints or to challenge them.

Because of his concept of power and freedom Foucault was against grand narratives of liberation such as liberalism or Marxism. He saw these as potential disciplinary regimes. Foucault's concept of power is more diffuse and fluid. So for Foucault any environmental movement with a particular structure of action would be open to suspicion as a potential authoritarian domination. He suggests that humans should be constantly vigilant and critical of all actions especially those undertaken in the name of liberation. Social change, revolution or environmental activism should be, according to Foucault, a never-ending activity in which tactics and 'goals' are constantly re-evaluated and adapted to changing circumstances within the field of power. Foucault does not think there should be any fixed, certain strategic position to adopt. He is against any grand normative project. His emphasis is on the individual who must engage in the 'practice of the self'.

Foucault's philosophy is an anti-naturalist and anti-essentialist one. It is one that would be fervently against environmental movements like deep-ecology and any foundational form of environmental ethics. Darier concludes his book in support of a Foucauldian approach to environmental problems:

Therefore the challenge to environmental activism is not to establish a binding 'ecological rationality' with even more powerful instruments of control and management, but to acknowledge human freedom, which can manifest itself anywhere, from the outright

destruction of the planet to its survival. Maybe it is not environmental ethics we need, but rather, a Green aesthetic of existence. In this case, Foucault is particularly relevant to the task.²⁰

The reference to aesthetics is because, like Nietzsche, Foucault believes that it is only through the aesthetic experience that any meaning for life can be formed.

Foucauldian philosophy is founded on the belief in the subjective stance and human freedom, the most important areas of concern in modern Continental philosophy. Can it help towards an understanding of nature and our own beings within it? In fact what comes across so strongly in the works of these philosophers is their alienation from nature and their total concern with humanity's sense of freedom and power.

The trend of Continental philosophy has been to discredit the objective, but post-modernism has also brought about the diminishing of the concept of a subject. Anti-humanist and anti-subject sentiments are commonly expressed. Deleuze and Guattari, who are both post-modernists, have a radical vision of the subject. In *Anti-Oedipus* the individual is understood as a 'desiring machine' without any unity. Desire, rather than reason, drives the individual. This is again an anti-essentialist view of the subject. Becoming is more important than being, because there is no central essence to anything. Everything becomes a process and so meaning is lost:

There is no such thing as either man or nature now, only a process that produces the one within the other and couples the machines together. Producing machines, desiring machines everywhere, schizophrenic machines, all of species life: the self and the non-self, outside and inside, no longer have any meaning whatsoever.²¹

²⁰ Darier, E. 'Foucault against Environmental Ethics' in Darier, ed 1999. op. cit. p.238

²¹ Deleuze, G. and Guattari, F. *Anti-oedipus: capitalism and schizophrenia*. Translated from the French by R.Hurley, M. Seem and H. Lane, preface by Michel Foucault. London: Continuum, 2004. p.2.

The schizophrenic is chosen as a paradigm because a schizophrenic has multiple identities and the ability to go on producing new identities as if identity were a process. Thus the ideal subject of these writers is a decentred, plural subject. It is a subject open to new experiences and resistant to institutional pressure. Deleuze and Guattari show in their ideal subject their opposition to authority and repression, which is a main theme of post-modernist thought. They are against anything that thwarts the free expression of desire and therefore against theories and institutions that curb individual expression. They also dismiss teleology and continuity of any explanatory kind.

The post-modernist ideal system is represented by a rhizome rather than a tree.

A tree has roots and a definite hierarchical structure – a centred system, but the rhizome:

...is an acentred, non-hierarchical, nonsignifying system without a General and without an organizing memory or central automaton, defined solely by a circulation of states.²²

The subject of Deleuze's and Guattari's philosophy is a fragmented, centreless entity that cannot be defined.

Postmodernists are opposed to all authority and rules. Jean-Francois Lyotard is particularly opposed to 'techno-science' – the grand narrative collaboration of political states and advanced technology. He sees them as inhuman and is therefore in support of little narratives at the individual level. However, the emphasis placed on the individual's freedom is the Achilles-heel of the post-modernists' view. The

²² Deleuze, G. and Guattari, F. *A Thousand Plateaus: capitalism and schizophrenia*. Translation and foreword by B. Massumi. London: Continuum, 2004. p. 21.

individual becomes a passive-observer in global events as Baudrillard reveals in his philosophy. 'Grand narratives' are to be only passively watched. I will be discussing Baudrillard later in Part II.

The real danger of postmodernism is its influence on the fragmenting of society. It is a philosophy of the individual and thereby can undermine the sense of a larger community. It is a type of philosophy that has nothing to offer in support of a global movement such as one which would be necessary to find a solution for environmental problems.

Chapter 2

Analytical Philosophy and Science

In the last chapter I have briefly outlined some of the major trends that Continental philosophy has taken up to the present day concerning human nature. Within this philosophy the concept of human nature is revoked. There is no essence to humans that we can call human nature as such: human nature is fluid. Humans create their own selves and they are free. Alongside these notions is that of the will to power. Power is, like human nature, fluid but it is what drives us all. The outcome of this thinking seems to lead to a fragmented society where only the individual self has importance. Even the concept of the self becomes fragmented in some philosophical writings. This type of thinking has influenced ethical theories and consequently environmental ethics. I shall be dealing with the ethical implications of the concept of pluralism that has developed largely from the influence of Continental philosophy.

However, in England the analytical critique of Kant's first *Critique* was seen as the more important part of Kant's philosophy and the emphasis was on an analytical style of philosophy. It is a philosophy that was strongly influenced by scientific method and so the various developments in the sciences are as important as the philosophy with regard to understanding the development of a new concept of human nature and the relationship humans have to nature. This particular style of philosophy was not restricted to Britain, for it had its roots also in Vienna and spread to America. It is also called Anglo-American philosophy. Analytical philosophy was at first bewitched by the successes of science, so much so that the philosophers of the Vienna Circle drew a line of demarcation between science and what they labelled 'metaphysics' which for them was synonymous to nonsense. They did this by saying

that only propositions concerned with matters of fact or with logical relation between concepts are meaningful. Propositions not falling into either of these two classes – the propositions of ethics and religion, for example – they regarded as expressions having emotional or exhortatory but not cognitive content; strictly they lack sense. Factual propositions are based upon experience and are significant because they can be verified or falsified by experience. Analytical philosophy therefore became concerned primarily with language and meaning. The analytical philosopher tries to reduce the imprecision of everyday usage of language to find the real meaning. Much like the scientist, these philosophers were concerned with problem-solving. The tendency of this approach is to become restricted within minor arguments in extremely complex ways. Although it can be a very useful approach to clearing up misunderstandings within philosophy, the desire to solve problems within the use of language often leads to greater confusion and the larger picture is often ignored.

Philosophy for analytical philosophers is a conceptual, analytical process. It follows a reductionist approach to knowledge in a similar to fashion to that of science.

As John Searle explains:

If we combine the assumption that philosophy is essentially a conceptual, analytical enterprise with the assumption that its task is to provide secure foundations for such things as knowledge – then the consequence for the positivists is that philosophical analysis tends in large part to be reductive. That is, the aim of the analysis is to show for example, how empirical knowledge is based on, and ultimately reducible to, the data of our experience, to so-called sense-data.¹

In this way analytic philosophy often supported the scientific method, although this is not true of all the philosophy in this style. Anglo-American philosophy, unlike

¹ Searle, J. 'Contemporary Philosophy in the United States' in Bunnin, N. and Tsui-James, E.P. eds. *The Blackwell Companion to Philosophy*. Oxford: Blackwell, 1996, p. 5.

Continental philosophy, was, in many areas, the hand-maiden to science. At least it would seem that way to anyone of a more Continental persuasion, because of the emphasis in analytical philosophy on objective knowledge rather than the acceptance of the subjective stance that was the guideline in Continental. To accept science in the way that analytical philosophy tends to do is for Continental philosophers not to be practising philosophy in the right way:

From a continental perspective, the adoption of scientism in philosophy fails to grasp the critical and cultural function of philosophy, that is, it fails to see the complicity between a scientific culture and what Nietzsche diagnosed as nihilism. What this means is that philosophical scientism fails to see the role that science and technology play in the alienation of human beings from the world through the latter's objectification into a causally determined realm of nature or, more egregiously, into a reified realm of commodities manipulated by an instrumental rationality.²

Continental philosophers tend to be anti-scientistic, although this is not the same as being anti-scientific. They simply are doubtful that the natural sciences provide our most significant access to the world and therefore for this reason they are critical of analytical philosophy.

There has been much good work done in analytical philosophy, but it has been influential mainly to only a select few; it has not caught the imagination of the general public. The emphasis on the individual in Continental philosophy and its concern with the human condition has meant that certain philosophers and their theories have generally been known more by the public than the philosophers of the analytic tradition. In England and English speaking countries the discoveries of science and

² Critchley, S. 'Introduction: what is Continental philosophy?' in Critchley, S. and Schroeder, W. R. eds. *A Companion to Continental Philosophy*. Oxford: Blackwell Publishers Ltd., 1999. p.13.

the scientist who has ventured into vague speculations of nature and human nature have often had more influence on the public and what is generally accepted than the philosophers. When examining people's attitudes to the environment and concepts of nature and human nature it is therefore necessary to assess the implications of scientific discoveries and their impact on the concept we have of ourselves.

The scientific method led scientists to reductionism and, for the purpose of simplification I shall be looking at the extreme form of reductionism in science as its simplicity has been very influential in framing a concept of human nature today. Reductionism can be understood as a way of relating the discoveries of each science to one another:

Reductionism is one solution to the problem of the relationship between different sciences. Thus one might advocate reducing biology to chemistry, supposing that no distinctive biological facts exist, or chemistry to physics, supposing that no distinctive chemical facts exist.³

Someone who is a reductionist in these terms would believe that to understand anything within the world would be to break it down into its component parts and nothing would be lost in so doing. Or to reverse this idea: if anyone had the basic building blocks of the world, anything in the world could be made from them exactly as they are to be found now, including human consciousness.

One important area within science was to find the ultimate building block of everything. Not only do scientists search for fundamental particles and forces that are the building blocks of the world we see around us, but they also seek to explain the workings of the universe by one unified theory. Thus Stephen Hawking writes.

³ Blackburn, S. *The Oxford Dictionary of Philosophy*. Oxford: Oxford University Press, 1994. p. 322.

The eventual goal of science is to provide a single theory that describes the whole universe.⁴

By this he means a theory within the discipline of physics.

The reductionist programme in science is built on the assumption that in order to understand how the things of the world function it is necessary to break them down into simple units. In this way, to understand living creatures science 'reduces' them to organic parts to be studied within the discipline of biology, and further parts to be studied at the biochemical level. Thence to chemistry and physics and the ultimate building blocks whatever they may be. David Deutsch, a scientist who is critical of the full reductionist position explains reductionism as follows:

That is to say, science allegedly explains things reductively – by analysing them into components. For example, the resistance of a wall to being penetrated or knocked down is explained by regarding the wall as a vast aggregation of interacting molecules. The properties of those molecules are again explained in terms of their constituent atoms, and the interaction of those atoms with one another, and so on down to the smallest particle and most basic forces. Reductionists think that all scientific explanations, and perhaps all sufficiently deep explanations of any kind, take that form.

The reductionist conception leads naturally to a classification of objects and theories in a hierarchy, according to how close they are to the 'lowest-level' predictive theories that are known. In this hierarchy, logic and mathematics form the immovable bedrock on which the edifice of science is built. The foundation stone would be a reductionist 'theory of everything', a universal theory of particles, forces, space and time, together with some theory of what the initial state of the universe was. The rest of physics forms the first four storeys. Astrophysics and chemistry are at a higher level, geology even higher, and so on. The edifice branches into many towers of increasingly high-level subjects like biochemistry biology and genetics. Perched at the tottering, stratospheric tops are subjects like

⁴ Hawking, S. *A Brief History of Time; from the big bang to black holes*. London: Bantam Press, 1988. p.10.

the theory of evolution, economics, psychology and computer science, which in this picture are almost inconceivably derivative.⁵

In this extreme form of reductionism that Deutsch describes science leads to the attempt to find a theory of everything and this ultimately leads to an explanation in terms of the initial state of the universe. In a reductionist account of the world the laws governing sub-atomic particle interactions are of paramount importance as these are the bases of the hierarchy of all knowledge. The whole reductionist programme rests heavily on the acceptance of causal laws:

Not only does it assume that explanations always consist of analysing a system into smaller, simpler systems, it also assumes that all explanation of later events are in terms of earlier events, in other words, that the only way of explaining something is to state its *causes*. And thus implies that the earlier the events in terms of which we explain something, the better the explanation, so that ultimately the best explanations of all are in terms of the initial state of the universe.⁶

The reductionist approach of science has been hugely successful in so many areas of practical application that it has been largely accepted as the only way to explain and solve problems. But it is controversial within the area of biology and related subjects. This is because it touches on our concept of ourselves as human beings and our relationship between ourselves and nature.

To a certain extent the reductionist programme is still considered successful within the biological sciences. Genetic theory is well established and every day we can see the influence of this theory on the explanation of human behaviour. The writings of Richard Dawkins and Daniel Dennett have been extremely influential in

⁵ Deutsch, D. *The Fabric of Reality*. Harmondsworth: Penguin Books, 1998. pp. 19-20.

⁶ *Ibid.* p.24.

this area and they are both reductionists. Also Edward Wilson and his book *Sociobiology* has had an effect on how we understand ourselves in our environment.

The Darwinian revolution has been equated to the Copernican revolution in astronomy: it turned the concept of ourselves in relation to the cosmos upside-down. In the Copernican revolution the Earth was removed from the centre of the universe and became a satellite of the sun. But more important than the decentralization of humans' place in the universe, the difference between heaven and earth was no longer accepted. This had a profound effect on religious beliefs of the time. Like the Copernican revolution, the Darwinian revolution was not only a scientific revolution but a philosophical one as well. After the Copernican revolution people were able to realign themselves and still believe in a difference between body and mind (or spirit). After the Darwinian revolution, the difference between mind and body was threatened. Materialism became the most likely candidate for a theory of everything. Janet Radcliffe Richards sums this up in her book *Human Nature after Darwin*:

This is a useful vantage point from which to approach the Darwinian revolution, because the best way of understanding the significance is in terms of its apparent potential for completing the synthesizing process. Newton had broken down the distinction between the heaven and the earth, and brought them into a single explanatory scheme. Darwin's theory of evolution by natural selection has seemed to many people to hold out the threat (or promise) of breaking down the other distinction, and showing that it is, after all, possible for the workings of 'bare incogitative matter', to lie at the root of all complexity and consciousness, and for traditional dualities (the idea that there are two distinct substances, spirit and matter) to be replaced with monism (the idea that there is only one)...The Darwinian threat was to make plausible the idea of material monism, or materialism, and in doing so to cast doubt on the Mind First view of the world.⁷

⁷ Richards, J. *Human Nature after Darwin: a philosophical introduction*. Milton Keynes: Open University, 1999. p.26.

Prior to the Darwinian revolution it had been thought that there could not have been matter without there first being Mind to create matter, mind being more complex than matter. But after the Darwinian revolution there was now a way of explaining how mind could be developed from matter. It was not in fact the theory of evolution that had opened up this new explanation, as a theory of evolution had been developing before Darwin, but the idea of natural selection. Dennett calls this 'the dangerous idea', the title of his ultra-Darwinian book, because it gave a mechanism by which evolution could happen and an explanation of how mind could develop from matter. Darwin summarizes his understanding of natural selection at the end of his book:

If during the long course of ages and under varying conditions of life, organic beings vary at all in the several parts of their organization, and I think this cannot be disputed, if there be owing to the high geometric power of increase of each species at some age, season or year, a severe struggle for life, and this certainty could be disputed, then considering the infinite complexity of the relations of all organic beings to each other and to their conditions of existence, causing an infinite diversity in structure constitution and habits, to be advantageous to them, I think it would be a most extraordinary fact if no variation ever had occurred useful to each beings own welfare, in the same way as so many variations have occurred useful to man. But if variations useful to any organic being do occur, assuredly individuals thus characterized will have the best chance of being preserved in the struggle for life; and from the strong principle of inheritance they will tend to produce offspring similarly characterized. This principle of preservation I have called for the sake of brevity, 'natural selection'.⁸

Although Darwin did not know the mechanics of heredity, it only took Mendel's work to fill in this gap in knowledge. The final victory for a reductionist understanding of human nature was the discovery of DNA. For thinkers like Dennett the discovery of DNA means that we can understand everything about ourselves in

⁸ Darwin, C. *The Origin of Species*. Harmondsworth: Penguin, 1968. pp.169-170.

material terms. There are no more 'skyhooks' as he calls explanations that are not reductionist. The following are the claims Dennett makes for contemporary Darwinism in its most extreme form:

The fundamental core of contemporary Darwinism, the theory of DNA-based reproduction and evolution, is now beyond dispute among scientists. It demonstrates its power every day, contributing crucially to the explanation of planet-sized facts of geology and meteorology, through middle-sized facts of ecology and agronomy down to the latest facts of genetic engineering. It unifies biology and the history of our planet into a single grand story. Like Gulliver tied down in Lilliput, it is unbudgeable, not because of some one or two huge chains of argument that might – hope against hope – have weak links in them, but because it is securely tied by hundreds of thousands of threads of evidence anchoring it to virtually every other area of human knowledge.⁹

Dennett reveals his belief that evolutionary theory is the unifying theory as it unifies 'biology and the history of our planet into a single grand story'. He takes his building blocks to be DNA. Everything on the planet Earth is explained through the story of these building blocks. The result is that we have an explanation for human nature in monistic-materialist terms. It is contrary to any teleological explanation of nature and humans. But to describe every living thing on Earth in terms of DNA could be equivalent of describing a home in terms of the bricks that made the dwelling for the home. In such a description the bricks would be doing a lot of work for a concept that has very little to do with them.

Scientists who are reductionists come in various disguises. The success of Edward Wilson's book *Sociobiology* named those who followed his ideas as 'sociobiologists'. Rightly or wrongly Wilson came under severe criticism for some of the implications in his book so that those who later accepted his ideas have given

⁹ Dennett, D. *Darwin's Dangerous Idea: evolution and the meanings of life*. London: Penguin Books Ltd., 1996. p. 20.

themselves the name of evolutionary psychologists. Wilson is strongly reductionist. His explanations of the world and the relationship of humans to nature are securely within the field of scientific knowledge. Scientific knowledge is highly reliant on the concept of causality and this is where scientific explanations for humans become controversial. Kant had excluded human freewill from scientific causes because he recognized the importance of human freewill as regards morality. A scientific explanation of humans can seem too deterministic and this was the main criticism of Wilson. In *On Human Nature* Wilson portrays a deterministic account of human nature:

...what is man's ultimate nature?

We keep returning to the subject with a sense of hesitancy and even dread. For if the brain is a machine of ten billion nerve cells and the mind can somehow be explained as the summed activity of a finite number of chemicals and electrical reactions, boundaries limit the human prospect – we are biological and our souls cannot fly free.¹⁰

This point of view is in direct contrast to continental philosophy, which although rejecting a teleological explanation of human nature, encourages the concept of human freedom. Wilson and his followers require a completely deterministic explanation. Sociobiology, now called evolutionary psychology, is a theory to place humans within the biological sphere. Just as non-humans can be studied within the evolutionary theory, so can humans. Human nature and human behaviour come within the scientific sphere and can be understood by studying their evolutionary development. Wilson makes this claim:

It [genetic chance and environmental necessity] is the essential first hypothesis for any serious consideration of the human condition.

¹⁰ Wilson, E. *On Human Nature*. London: Penguin Books Ltd., 1995. p. 1.

Without it the humanities and social sciences are the limited descriptions of surface phenomena, like astronomy without physics, biology without chemistry and mathematics without algebra. With it, human nature can be laid open as an object of fully empirical research, biology can be put to the service of liberal education and our self-conception can be enormously and truthfully enriched.¹¹

Wilson is aware of the determinism within his account but sees it as an asset for future understanding of humans. All human behaviour and experience will be understood as determined by biological constraints. Thereby a full description of human nature is a possibility:

But to the extent this new naturalism is true, its pursuit seems certain to generate two great spiritual dilemmas. The first is that no species, ours included, possesses a purpose beyond the imperatives created by its genetic history. Species may have vast potential for material and mental progress but they lack any immanent purpose or guidance from agents beyond their immediate environment or even an evolutionary goal toward which their molecular architecture automatically steers them. I believe that the human mind is constructed in a way that locks it inside this fundamental constraint and forces it to make choices with a purely biological instrument. If the brain evolved by natural selection, even the capacities to select particular esthetic judgments and religious beliefs must have arisen by the same mechanistic process.¹²

Wilson is not concerned that some of the higher intellectual endeavours of humans are down-graded quite considerably by his account. Purposes, aesthetic and religious experiences are explained as the result of mechanistic processes. He is overjoyed to have simplified humans to the level of his specialist knowledge. In this cavalier fashion Wilson abolishes the higher aspirations of humans. It is an explanation that immediately negates any thoughts that take us beyond the every day. Creativity and imagination become mundane. It is, in fact, a very poor explanation for the existence

¹¹ Ibid. pp.1-2

¹² Ibid. p.2.

of inspiration. Yet the reductionist explanation for human nature is enticing in its simplicity and its all-encompassing claims. If humans can be explained entirely in this scientific way then there is a genuine possibility of solving all problems. All we need to do is examine the evolutionary process that brought it about and by understanding the problem in this way we can solve it. Wilson believes that morality can be explained in evolutionary terms as well:

...innate sensors and motivators exist in the brain that deeply and unconsciously affect our ethical premises; from these roots, morality evolved as instinct. If that perception is correct, science may soon be in a position to investigate the very origin and meaning of human values from which all ethical pronouncements and much of political practice flow.¹³

I cannot help but admire the amazing optimism that this passage contains, but it is also very disturbing. Here Wilson really is saying that we each are a given, a result of the evolutionary process that made our brains what they are, so that the very thoughts of right and wrong are simply to be understood as the way our brains have evolved to think. However if this is the case, how is it possible that after reading and discoursing with others about a particular moral problem we can take a fresh look at the problem and change our opinion? If our brains had evolved in a particular way, would this be a possibility?

Wilson was by training a biologist. It was studying the behaviour of non-human animals that inspired his theory of human nature. Evolutionary psychologists tend to interpret human behaviour using the same terminology as that applied to animal behaviour. Thinkers of the 19th century, such as Spencer, held that there was evolutionary progress, humans being the topmost pinnacle to which evolution aspired.

¹³ Ibid. p.5.

But this has been discredited. As everything is a result of random selection there can be no notion of progression. Progression implies purpose and natural selection has no purpose. At the same time that humans are brought into the realm of the animal kingdom, animal behaviour is interpreted in terms of human behaviour and the difference between the two is understood as a difference of degree and not of kind. Thus there have been studies of our closest relatives, the apes, to show links between their social behaviour and our own. There has been research into the ability of chimpanzees to acquire language, trying to prove that they have the same potential ability to understand symbols as humans. The closeness of humans to the rest of nature is emphasized because the claim supports evolutionary theory. But, perhaps in an attempt to close the gap, the extent of the difference has been undervalued.

According to environmental psychologists human nature is fixed because it is the result of natural selection. Each individual that is alive today is the result of ancestors having favourable genes for selection. Favoured genes will spread throughout the population and the particular traits they generate will become characteristic of the species. As Wilson says:

In this way human nature is postulated by many sociobiologists, anthropologists, and others, to have been shaped by natural selection.¹⁴

Wilson further holds that human personalities are the result of selected genes and that all cultural behaviour is the result of the sum of those selected genes:

The recently discovered enkephalins and endorphins are protein-like substances of relatively simple structure that can profoundly affect mood and temperament. A single mutation altering the

¹⁴ Ibid. p.33.

chemical nature of one or more of them might change the personality of the person bearing it, or at least the predisposition of the person to develop one personality as opposed to another in a given cultural surrounding. Thus it is possible, and in my judgement, even probable, that the positions of genes having indirect effect on the most complex forms of behaviour will soon be mapped on the human chromosomes.¹⁵

Wilson gives a genetic explanation for human personalities. This is a biologically-determined view of human nature. Wilson also makes claims about human behaviour:

I also believe that it will be soon within our power to identify many of the genes that influence behaviour... Thus it is possible and in my judgement even probable, that the position of genes having indirect effects on the most complex forms of behaviour will soon be mapped on the human chromosomes.¹⁶

The sociobiologist holds that to understand human nature it is sufficient to study evolutionary factors:

Self-knowledge [through socio-biology] will reveal the element of biological human nature from which modern social life proliferated in all its strong forms. It will help to distinguish safe from dangerous future courses of action with greater precision.¹⁷

Evolutionary psychologists today are aware of the negative implications of the doctrine Wilson put forward. They are more careful as to how they phrase their theory maintaining that environmental influences are no less deterministic than

¹⁵ Ibid. p. 47.

¹⁶ Ibid. pp. 46-47.

¹⁷ Ibid. p.47.

genetic inheritance. However, Steven Pinker in his book *The Blank Slate* published 2002 still can say this:

Psychologists have discovered that our personalities differ in five major ways. We are to varying degrees introverted or extroverted, neurotic or stable, incurious or open to experience agreeable or antagonistic, and conscientious or undirected...All five of the major personality dimensions are heritable, with perhaps 40 to 50 percent of the variation in a population tied to differences in their genes. The unfortunate wretch who is introverted, neurotic, narrow, selfish and undependable is probably that way in part because of his genes, and so, most likely are the rest of us who have tendencies in any of those directions as compared with our fellows.¹⁸

Later he says this about 'heinous acts':

In either case genetics and neuroscience are showing that a heart of darkness cannot always be blamed on parents or society.¹⁹

This suggests that evolutionary psychologists are saying that human personalities are to a large part genetically determined and the implication of this seems to be that those who behave badly in society cannot have total moral responsibility for their actions. I think he would claim that he was really saying that humans are determined one way or another, either genetically or by the environment, society, family etc. Either way the concept of responsibility of the individual for himself is not immediately apparent in their explanations. Later he says:

The explanations [genetics, neuroscience] may help us understand the parts of the brain that made a behaviour tempting, but they say nothing about the *other* parts of the brain (primarily in the pre-frontal cortex) that could have inhibited the behaviour by anticipating

¹⁸ Pinker, S. *The Blank Slate: the modern denial of human nature*. London: Penguin Books Ltd., 2002. p.50.

¹⁹ *Ibid.* p.51.

how the community would respond to it.²⁰

This implies that moral correction of behaviour is also controlled by physical processes and is mainly concerned with not disturbing the community. However, Pinker does not address the problem that, if a society holds to this particular theory, the inhibition of behaviour may not function so well when everyone assumes that the genetic background determines so much social behaviour. His understanding of morality is phrased in evolutionary terms:

The expansion of the moral circle does not have to be powered by some mysterious drive toward goodness. It may come from the interaction between the selfish process of evolution and a law of complex systems. The biologists John Maynard Smith and Eors Szathmary and the journalist Robert Wright have explained how evolution can lead to a greater and greater degree of cooperation. Repeatedly in the history of life, replicators have teamed up, specialized to divide the labor, and coordinated their behaviour. It happens because replicators often find themselves in non-zero-sum games, in which particular strategies adopted by two players can leave them both better off.²¹

As always with the theories of evolutionary psychologists this gives an excellent description of the history of a phenomenon but it is hardly inspiring, nor gives any forward-looking direction in which way we should tackle moral problems now. A historical description is not a guide-line to future behaviour. Besides which, a morality based on individuals winning games changes the concept of morality to such a degree that it could no longer be classed as morality. Nor would this explanation of morality based 'winning-games' be much incentive for people to follow moral codes.

²⁰ Ibid. p.183.

²¹ Ibid. p.167.

An extreme form of reductionism used to describe human nature is formulated by Richard Dawkins in his book *The Selfish Gene*. It is not always easy to make an assessment of his theory for he has a tendency to shift his ground when criticized for the implications of his theory. However I can only give an outline of what he seems to be saying even if he may deny its implications. Lured by his particular specialist area of knowledge, he gives a totally biological interpretation of human nature. He says that natural selection does not work on individuals or groups but on a smaller unit – ‘the germ-line replicator’:

The thesis that I shall support is this. It is legitimate to speak of adaptations as being ‘for the benefit’ of something, but that something is best not seen as the individual organism. It is a smaller unit which I call the active, germ-line replicator. The most important kind of replicator is the ‘gene’ or small genetic fragment...
The individual bodies are still there, they have not moved, but they seem to have gone transparent. We see through them to the replicating fragment of DNA within, and we see the wider world as an arena in which these genetic fragments play out their tournaments of manipulative skill.²²

The implications of his writings seem to be that the gene is the most important entity in the living world and everything else is happening as a by-product. From this description humans become merely carriers of the genes:

Fundamentally, what is going on is that replicating molecules ensure their survival by means of phenotypic effects on the world. It is only incidentally true that those phenotypic effects happen to be packaged up into units called individual organisms.²³

²² Dawkins, R. *The Extended Phenotype: the gene as the unit of selection*. Oxford: W.H. Freeman and Company, 1982. p.4.

²³ *Ibid.* pp.4-5.

This does give a picture of a world seething with genes and of humans as mere victims of what their genes require them to do in order for the genes (and not even the individual human in which the genes reside) to survive. However, Dawkins has denied this picture, saying that it does not matter what our genes are doing; humans can function the same way as always as if the genes were having no effect. But this seems a little like presenting a theory and then rejecting all its implications because they are unpalatable.

Both Dawkins and Pinker deny the deterministic implications of their theories although their argument for the denial is in negative terms. They both argue that environmental factors can be more determinative than gene factors. It is interesting that they support their own theory by attacking the other side, for the fact that environmental factors may be more determinative does not mean that gene factors are not determinative. There is a big problem here about determinism and the need for free will within human behaviour which I shall tackle later, for much of the argument rests on what is meant by 'determinism' and particularly what sort of causes we are discussing when we say 'this behaviour was caused by...' But at the moment I want to look at what Dawkins and Pinker seem to be saying because it is the surface interpretation that has attracted the attention of the media and, as a result, public opinion. The problem seems to be that physical entities appear more concrete than social entities, so that if one is born with particular genes that want to survive whatever may befall, there is little that you can do to change them. You are the sum of your genes and must behave as they dictate. Whereas environmental factors seem more open to change and more under an individual's control. This may not be true and I have some sympathy with Pinker and Dawkins when they see environmental factors as every bit as deterministic as genes. It is the popular conception of physical

entities that is at fault but it is my argument that the metaphysical picture presented by scientists, and understood at large, is the one that frames our present understanding of human nature and our relation to nature.

The reductionist approach in the biological sciences depicts a particular deterministic concept of human nature. On this account we are products of natural selection at the gene level. The particular genes that are selected are the ones that determine our behaviour. The evolutionary psychologists hold that most of our behaviour is determined by genes that evolved to help us survive as stone age humans so that sometimes, or even often, our behaviour today is dictated by survival values of the past which often conflict with modern civilization. It is a wonder that the genes have not caught up! The populist understanding of the reductionist explanation of human nature is that we are just physical beings like the rest of nature, only separated from our nearest cousins, the apes, by a slight degree. Social and cultural developments are seen as much less important in this description of human nature. Human behaviour, even altruistic acts, is explained as survival tactics. In fact all areas of human interactions and thoughts, including care for families and establishing social groups as well as aesthetic and spiritual expressions, are explained in terms of survival.

This type of explanation makes it difficult to possess any values at all apart from that of survival. It would be difficult to build an environmental ethics on this type of basis. If we are a sum of genes fighting for our survival then so is the rest of nature. All we need to do is to sustain that part of nature that we need for our existence.

Not all scientists who accept evolutionary theory are as extreme as the evolutionary psychologists. There is a vast spectrum of ideas within the variety of

evolutionary explanation about human nature. I have been dealing with those that may be termed 'ultra-Darwinists' who accept mono-materialism. Other Darwinists can be non-materialists for, while they accept evolutionary theory, they sometimes hold a belief that there could also be some non-materialist substance. The ultra-Darwinists deny that there could ever be anything but physical matter. This materialist account of humans and nature is often a mechanical one as well. It seems to follow from reductionist thinking. The line of thought is this: if we are products of inanimate matter developed by physical processes we must, like all of nature, be subject to physical laws which are, following Newton, basically mechanical. Dennett certainly follows this line of thought in his explanation of human consciousness.

Human consciousness seems to be the last area in the understanding of humans that escapes a material explanation. Our own experience of consciousness seems to deny that there could be a materialist explanation for it. However Dennett does give a materialistic explanation of human consciousness. With the development of computer sciences he, and many other thinkers today, understand the mind as an extremely complex computer. The particular manifestation of the human mind has been formed through the process of natural selection: Environmental pressures have helped the brain to be developed in a certain way so that a mind has evolved to cope with survival. All thoughts and feelings are the brain's way to make us behave in certain ways in order to survive. Our attempt to make these processes in the brain more than the material is because we are trapped into a grand illusion. The grand illusion is our consciousness. In fact, according to Dennett, these illusions (ideas, intentions etc.) are just mechanistic processes. However, Dennett says, we can use such non-mechanistic terms to help us in certain explanations of behaviour, but

language has given us the illusion of a non-material substance that in fact does not exist:

The phenomena of human consciousness have been explained in the preceding chapters in terms of the operations of a 'virtual machine', a sort of evolved (and evolving) computer program that shapes the activities of the brain. There is no Cartesian Theatre; there are just Multiple Drafts composed by processes of content fixation playing various semi-independent roles in the brain's larger economy of controlling a human body's journey through life. The astonishingly persistent conviction that there is a Cartesian Theater is the result of a variety of cognitive illusions that have now been exposed and explained. 'Qualia' have been replaced by computer dispositional states of the brain, and the self (otherwise known as the Audience in the Cartesian Theater, the Central Meander or the Witness), turns out to be a valuable abstraction, a theorists fiction rather than an internal observer or boss.²⁴

Thus Dennett demolishes the one area of our awareness that seemed to stand outside all physical explications. To any protests that our awareness of experiences within consciousness seems to differ in a vast way from anything else and that all our concepts have been built on the difference between what we experience as internal and what we experience as external (the subjective and the objective), he has the answer that we are suffering from a grand illusion. But Dennett is open to the question as to how he is able to see the illusion as an illusion if it is an illusion. In fact, how can any of us stand outside our own consciousnesses and assess them to be what they are if we must use consciousness to examine it?

Nevertheless this picture of the mind as a vast and complex computer programme is well established today. The corollary to this hypothesis is that it is logically and, eventually, physically possible to build a computer complex enough to have consciousness. Thinkers in this line complete the mechanical picture of nature

²⁴ Dennett, D. *Consciousness Explained*. London: Penguin Books Ltd., 1991. p. 431.

begun by Descartes, but this time including the mind in the description. In spite of further developments in science that may question this mechanical description of nature following the laws of physical causation, the popular concept of human nature seems to be the one that Dennett has successfully outlined. We have today a concept of nature that is a mechanical one based on monistic materialism, and humans, including consciousness, are a part of that mechanical explanation.

Chapter 3

Continental Philosophy and Science Comparisons and Contrasts in their Concepts of Human Nature

In this thesis I have been attempting to outline the main themes that dominate thinking today in the formation of the concepts of nature and of human nature. In this second part I have researched into the development of Continental philosophy and how it has influenced the concept of human nature, as well as scientific reductionism which has led to the Ultra-Darwinist position on the concept of human nature. In this chapter I want to examine further the main themes in Continental philosophy and Ultra-Darwinism and compare the two opposed concepts of human nature. My argument is that both Continental philosophy and Ultra-Darwinism have had a considerable influence on the concept of human nature that has been generally accepted today. There are many who dissent from the general consensus, but nevertheless the two opposing schools of thought appear to dominate literature and the media. Often the two concepts are held simultaneously without the realization that they are fundamentally contradictory.

As noted earlier, the difference between analytical philosophy and its acceptance of scientific method, and Continental philosophy could be seen to largely turn on whether philosophers were concerned solely with the epistemological issues of the first *Critique*, as was the case with analytical philosophy, or with the greater systematic ambitions of the third *Critique*. Kant's critique of the faculty of judgement was an attempt to link the concept of nature, tied by physical laws, with the concept of human freedom. While analytical philosopher largely ignored the third *Critique*, Continental philosophers were left discontent with Kant's solution.

Yet the question that this raises is the following: how is freedom to be instantiated or to take effect in the world of nature, if the latter is governed by causality and mechanically determined by the laws of nature? How is the causality of the natural world reconcilable with what Kant calls the causality of freedom? How, to allude to Emerson alluding to the language of Kant's Third Critique, is genius to be transformed into practical power? Doesn't Kant leave human beings in what Hegel might have called the *amphibious* position of being both freely subject to the moral law and determined by an objective world of nature that has been stripped of any value and which stands over against human beings as a world of alienation?¹

It is this criticism of Kant that occupied the thoughts of many Continental philosophers. Nietzsche diagnosed it as the concept of nihilism. It is the realization that the subject's freedom opens the gates to a collapse in moral certainty in the world because the highest values have devalued themselves. Where Kant could claim a transcendent source of values, the implications of his philosophy was that this transcendent source could not be known and therefore successive philosophers found the concept empty.

For the German philosophers that followed Kant the achievement of transcendental idealism was to reduce the importance of the thing-in-itself, objects of the 'real' world. Objects are constructed within the mind of the self-conscious subject and so the characteristic emphasis in German philosophy is on the latter. In Fichte's philosophy, only the self can know itself; the self 'posits' itself. Everything else is mere representation or the not-self. In the philosophy of Schelling and Hegel there are large metaphysical systems to give purpose and direction to the self. In German Idealism the underlying reality is spirit whose journey towards self-knowledge leads to the Absolute Idea. But later philosophers abandoned these types of systems and

¹ Critchley, S. 'Introduction: what is Continental philosophy' in Critchley, S. and Schroeder, W.R. eds. *A Companion to Continental Philosophy*. Oxford: Blackwell Publishers Ltd., 1999. p.11.

the self-conscious subject becomes the centre of all knowledge. The self floats in a vacuum that only itself can fill. Idealism gave way to materialism as in the works of Marx. Marx interprets Hegelian dialectics in material and historical terms. The concept of spirit is discarded.

With the emphasis on the self, Continental philosophers place importance on subjective knowledge. The world is ordered by the subject: there is no order 'out there' to discover. In this respect humans can be understood as apart from nature for nature is organized and categorized through human consciousness. All aspects of nature are therefore representations, as expressed in Schopenhauer's philosophy, and any interpretations of these representations are myths, as in Nietzsche's philosophy.

Objective truth is a grand illusion:

The fictitious world of subject, substance, 'reasons' etc. is needed; there is in us a power to order, simplify, falsify, artificially distinguish. What then is truth? A moveable host of metaphors, metonymies, and anthropomorphisms; in short, a sum of human relations which have been poetically and rhetorically intensified, transferred and embellished, and which, after long usage, seem to a people to be fixed, canonical and binding. Truths are illusions which we have forgotten are illusions; they are metaphors that have become worn out and have been drained of sensuous force, coins which have lost their embossing and are now considered as metal and no longer as coins.²

Objective knowledge of any kind, whether of morality or science, can never be attained. For Nietzsche, as for other philosophers that followed him, all such attempts at objective knowledge are mere illusions. Science may be able to gradually reveal the history of the fantasies we call reality, but science is yet another myth:

² Nietzsche, F. On Truth and Lies in a Nonmoral Sense. In Breazale, D. *Philosophy and Truth: selections from Nietzsche's notebooks of the early 1870's*. Translated and edited with an introduction and notes by D. Breazale, with a foreword by W.Kaufmann. Sussex: Harvester Press, 1979. p.84.

Because we have for millennia made moral, aesthetic, religious demands on the world, looked upon it with blind desire, passion or fear, and abandoned ourselves in the bad habits of illogical thinking, this world has gradually become so marvellously variegated, frightful, meaningful, soulful. It has acquired colour – but we have been the colourists...

With all these conceptions the steady and laborious process of science which will one day celebrate its greatest triumph in a *history of the genius of thought*, will in the end decisively have done; for the outcome of this history may well be the conclusion. That which we now call the world is the outcome of a host of errors and fantasies which have gradually arisen and grown entwined with one another in the course of the overall evolution of the organic being, and are now inherited by us as the accumulated treasure of the entire past – as treasure for the value of humanity depends upon it. Rigorous science is capable of detaching us from this ideational world only to a limited extent – and more is certainly not desired – inasmuch as it is incapable of making any essential inroad into the power of habits of feeling acquired in primeval times.³

According to Nietzsche the only achievement of science could be the unravelling of the history of how we came to perceive the world as we do. Science cannot find a reality because there is no possibility of objective knowledge beyond our own imaginings. Without an ultimate reality or objective knowledge, humans are forced to create their own realities. It is only through the will to power that we can achieve a path for ourselves. All knowledge is subjective because there is no God-like point of reference to be attained:

The radical finitude of the human subject is that there is no God-like standpoint or reference outside human experience from which our experience might be characterized and judged; the thoroughly contingent or created character of human experience. That is, human experience is all-too-human, it is made and remade by us, and the circumstances of this fabrication are by definition contingent.⁴

³ Nietzsche, F. *Human, All Too Human: a book for free spirits*. Translated by R.J. Hollingdale. Introduction by E. Heller. Cambridge: Cambridge University Press, 1986. p.20.

In classical science there is no doubt about the reality of objects of the external world, and humans, within an Ultra-Darwinist interpretation are considered as among those objects. Ultra-Darwinists would probably accept what in metaphysics is called ‘ontological naturalism’, although mind-first Darwinists could do also. Ontological naturalism is the view that natural objects, kinds and properties are real. ‘Natural’ would be equal to ‘what is recognized by science’ and therefore anyone accepting ontological naturalism could reach a position of having complete faith in science beyond what would be normally philosophically acceptable. However, anyone who accepted absolute faith in science could be accused of scientism, for it would mean that an assumption had been made that science has a higher degree of rationality than any other subject and therefore should take precedence over any other rational inquiry. The acceptance of the superiority of science over any other subject may lead to the conclusion that anything that cannot be ‘naturalized’, or reduced to natural terms, as for example human consciousness, does not have ‘real’ existence. Thus Owen Holland, a roboticist, claims:

Now whatever consciousness is, it does appear to be some kind of user illusion created by the brain for dealing with itself. And while a lot of what consciousness seems to be telling us is wrong, it’s still very useful. In *the Illusion of Conscious Will*, Daniel Wegner extends this by arguing that conscious [free] will is an illusion that allows us to track and identify the ‘authorship’ of our actions, and to behave consistently. These illusion are engineering solutions from nature, to solve engineering problems which we don’t yet understand. But when our biologically inspired robots get sophisticated enough, we’ll copy those tricks. So robots won’t have free will but they will have the illusion of it, the same illusion that we have.⁵

⁴ Critchley, S. *Continental Philosophy: a very short introduction*. Oxford: Oxford University Press, 2001. p. 63.

⁵ Holland, O. ‘New Scientist at the RSA’ in *New Scientist* 10th May 2003. p. 48.

In the extreme form of scientific reductionism those expressions of humans that are viewed as subjective, such as intentional states and colours, must be reduced to natural items if they are real, because it is doubtful that they could have their apparent qualities unless they themselves were natural. They would argue for reduction on the grounds that intentionality and other subjective experiences supervene on natural properties. Thus mental properties supervene on physical properties. Accepting ontological naturalism means that science, in its methods and results, is above criticism. This total acceptance of science as beyond criticism is in direct contrast to the questioning of all modes of enquiry in Continental philosophy.

An important element as regards to human nature in Continental philosophy is the concept of will. According to Schopenhauer my essence is will and my immediate and non-conceptual awareness of myself is awareness of will. Human nature in its expression of the will is no different from the rest of nature because the individual will is part of an extended will throughout nature. The concept of the individual will that is striving to survive has parallels with the concept of natural selection within evolutionary theory. Roger Scruton explains Schopenhauer's concept of will:

Will manifests itself among phenomena in two ways: as individuals striving and as Idea. An Idea is something like a complete conception of the will. In so far as this can be grasped in the world of representation it corresponds to the universal not the particular, and it is therefore only in the species that the Idea is truly present to our perception. In the natural world, therefore, the species is favoured over the individual since in the species the will to live finds a durable embodiment, which the individual judged in himself, is a passing and disposable aberration. Schopenhauer expresses the point in one of his many beautiful images: 'Just as the spraying drops of the waterfall change with lightning rapidity while the rainbow which they sustain remains immovably at rest quite untouched by that restless change, so every idea in every species of living being remains entirely untouched by the constant changes of

its individuals. But it is the Idea of the species in which the will-to-live is really rooted and manifests itself; therefore the will is really concerned only in the continuation of the species.’⁶

Although within Schopenhauer’s philosophy there is a system within which the will has purpose and direction, yet his concept of the will possesses the same indifference to the individual as expressed in the theory of natural selection. Nature is portrayed as cold and ruthless towards the individual. Schopenhauer’s philosophy echoes some of the thinking of Lucretius in his description of a ruthless nature in which all creatures, including humans must fight against one another in order to survive. It is a cruel, harsh nature and humans are a part of its cruelty:

Thus everywhere in nature we see strife, conflict and alteration of victory, and in it we shall come to recognize more distinctly that variance with itself which is essential to will. Every grade of the objectification of will fights for the matter, the space, and the time of others. The permanent matter must constantly change its form; for under the guidance of causality, mechanical, physical, chemical and organic phenomena, eagerly striving to appear, wrest the matter from each other, for each desires to reveal its own Idea. This strife may be followed through the whole of nature; indeed nature exists only through it:... Yet this strife itself is only the revelation of that variance with itself which is essential to the will. This universal conflict becomes most distinctly visible in the animal kingdom, for animals have the whole of the vegetable kingdom for their food, and even within the animal kingdom every beast is the prey and the food of another; that is, the matter in which its Idea expresses itself must yield itself to the expression of another Idea, for each animal can only maintain its existence by the constant destruction of some other. Thus the will to live everywhere preys upon itself, and in different forms is its own nourishment, till finally the human race, because it subdues all the others, regards nature as a manufactory for its use.⁷

⁶ Scruton, R. *A Short History of Modern Philosophy from Descartes to Wittgenstein*. 2nd ed. London: Routledge, 1995. p. 188.

⁷ Schopenhauer, A. *The World as Will and Idea*. Translated from the German by R.B Haldane and J. Kemp. London: Kegan, Paul, Trench, Trubner & Co. 1891. pp.191-192.

In this passage Schopenhauer condones the subjugation of nature by humans because that is the way of the will. The will preys on itself and humans follow the dictates of the will. Human nature is ruled by the all-pervasive will and their behaviour is no different from any other animal. As the top predatory animal they are entitled to subdue all nature. This explanation of the behaviour of humans towards nature offers no positive view of the relationship between nature and humans. It is an explanation of human nature that vindicates domination.

The picture of a brutal nature in which humans pursue their own particular cruel fight is similarly portrayed in the philosophy of Nietzsche. Nietzsche gives a mechanical explanation of nature. He even interprets human behaviour as being dictated by causal laws:

106 By the waterfall. – At the sight of a waterfall we think we see in the countless curvings, twirlings and breakings of the waves capriciousness and freedom of will, but everything here is necessary, every motion mathematically calculable. So it is too in the case of human actions; if one were all-knowing one would be able to calculate every individual action, likewise every advance in knowledge, every error, every piece of wickedness. The actor himself, to be sure, is fixed in the illusion of free will; if for one moment the wheel of the world were to stand still, and there were an all-knowing, calculating intelligence there to make use of this pause, it could narrate the future of every creature to the remotest ages and describe every track along which this wheel had yet to roll. The actor's deception regarding himself, the assumption of free will, is itself part of the mechanism it would have to compute.⁸

Nietzsche gives a highly deterministic concept of human nature although he seems to contradict himself in other areas of his philosophy where he maintains that everything

⁸ Nietzsche, F. *Human, all too Human*. 1986. op. cit. p.57.

we know about the world is an illusion and that humans must *freely* create their own realities.

Nietzsche portrays the will of all nature as the strongest force that propels even humans along in its inevitability. Nietzsche gives a historical and genealogical explanation of humans within a mechanical concept of nature. Here again is the concept of the survival of the fittest and of the will to power, although Nietzsche believes that the Darwinian concept of the survival of the fittest is only one part of the overall driving will to power. Nietzsche condones the hegemony of the strongest in his philosophy of the Overman although this may not be the physically strongest. His Overman conquers himself as much as others and thereby becomes the strongest in the will to power. It is a philosophy of the individual. He rejects any values that have been accepted up to date, particularly those of Christianity. The Overman must make his own values. The distinction of good and evil within a moral sphere is rejected and replaced with the opposition of good and bad. The good man, like the good horse, is one who is healthy, flourishing and potent; the bad one is sick in body and mind. Survival is the only value to retain. This area of Nietzsche's philosophy has parallels to the Ultra-Darwinist concept of human nature where moral behaviour is a tactic for survival. In both concepts of human nature humans are at war with one another and the emphasis is on the individual's survival without regard for others. Nietzsche was opposed to socialism, utilitarianism and democracy as well as Christianity and in fact any system that attempted to find objective values for all humans. Nietzsche denies an ultimate reality or objective truth. However, as has often been noted, Nietzsche defeats all his own arguments for, if all theories are myths created subjectively from ourselves, then there is little reason for us to accept Nietzsche's philosophy: it is just another myth.

Subjective knowledge and the will to power are two aspects that are developed in later Continental philosophy as well. Foucault interpreted human nature through the concept of will to power, but in Foucault's philosophy the will to power is separated from nature. It is purely an expression of human nature. Foucault has nothing to say about nature, as he is only concerned with an explanation of human struggles for power. In social organizations power is institutionalised to promote particular concepts of the world to benefit the ruling classes. All knowledge is the expression of power. To use reason and make knowledge claims is to follow those who have presumed the right to make such claims:

Power produces knowledge...power and knowledge directly imply one another...there is no power relation without the correlative constitution of a field of knowledge, not any knowledge that does not presuppose and constitute at the same time power relations.⁹

Foucault's philosophy demonstrates the tendency of Continental philosophy to concentrate on the human condition. Humans are embedded historically and culturally within the world. Nature becomes just one of those phenomena that is constructed in cultural terms and all knowledge is an expression of human relations.

Continental philosophy is concerned with humans and the way they perceive and construct their world. It is often concerned with *crisis*:

For the Continental tradition, philosophy is a means to *criticize* the present, to promote a reflective awareness of the present as being in crisis, whether this is expressed as a crisis in faith in a bourgeois-philistine world, a crisis of the European sciences, of the episteme of the human sciences, of nihilism, of the

⁹ Foucault, M. *Discipline and Punish: the birth of the prison*. Translated from the French by A. Sheridan. Harmondsworth: Penguin Books, 1991. p. 27.

oblivion of being, of bourgeois society, of the hegemony of instrumental rationality, of the technological domination of nature, or whatever. Philosophy as an acute reflection upon history, culture and society can lead to the awakening of critical consciousness.¹⁰

The concept of human nature in relationship to nature within Continental philosophy is in opposition to that of scientific reductionism. Continental philosophers are concerned with how humans perceive nature within the historical, cultural and social structures of humans including the structures determined by science: scientific reductionism is concerned with humans as one of the objects of nature and all historical, cultural and social aspects of humans can be explained in terms of science.

Another important aspect of Continental philosophy is the concept of human freedom. This is most fully expressed in existentialism where the emphasis on the subjective stance results in free choices of the individual. Choice is the only capacity that makes sense of existence: existence is an absurdity that can only be overcome by choice, by a leap of faith as in Kierkegaard's philosophy. Sartre examined the question of being and concluded that the essence of objects precedes their existence, but that for humans, resting on the condition that God does not exist – the case of the free subject – it is the other way around:

Atheistic existentialism, of which I am a representative, declares with greater consistency that if God does not exist there is at least one being whose existence comes before his essence, a being which exists before it can be defined by any conception of it. That being is man, or, as Heidegger has it, the human reality.¹¹

¹⁰ Critchley, S. 'Introduction' in Critchley, S. and Schroeder, W. R. eds. *A Companion to Continental Philosophy*; Oxford: Blackwell Publishers Ltd., 1999. p. 14.

¹¹ Sartre, J-P. *Existentialism and Humanism*. Translation and introduction by P. Mairet. London: Eyre Methuen Ltd., 1973. pp. 27-28.

Humans are different from any other being in the world because they are free to create themselves: they have no essence given. As humans are free to create their own essence they are very different from the rest of nature and are separated from nature by this distinction. Within the context of Continental philosophy human nature is of a contingent nature. Human nature is not determined: it can be recreated. In this way humans can emancipate themselves from situations in which they find themselves. The historical critique of philosophical problems and the emancipation of humans work together. Continental philosophy often is a philosophy of liberation. Humans are capable of improving their situation by solving the problems of the past: they are not determined by the past. Existentialism also emphasizes the subjective nature of values: there are no objective values. Humans should create their own values to be authentic. Although existentialism has a liberating message, its major fault is its reliance on the individual. It is not a philosophy for cooperative enterprises, so essential for such matters as those concerning the environment.

Opposed to the Continental concept of human nature as free to construct both itself and its realities is the determinism of Ultra-Darwinism. It is wedded to extreme scientific reductionism. An explanation of human nature can be found totally within the realms of science:

..it is possible (and desirable) to *unify* chemistry and physics biology and chemistry, and yes, even the social sciences and biology. After all, societies are composed of human beings, who, as mammals, must fall under the principles of biology that cover all mammals. Mammals, in turn, are composed of molecules, which must obey the laws of chemistry, which in turn must answer

to the regularities of the underlying physics.¹²

This is a quote from the philosopher Daniel Dennett who gives an explanation of humans as being fully a part of nature. Dennett's description leads him to believe that all events, even those that are normally thought of as mental, are in fact physical events that have evolved through natural selection:

Darwin's dangerous idea is reductionism incarnate, promising to unite and explain just about everything in one magnificent vision. Its being the idea of an *algorithmic* process makes it all the more powerful since the substrate neutrality it thereby possesses permits us to consider its application to just about anything. It is no respecter of material boundaries. It applies, as we have already begun to see, even to itself. The most common fear about Darwin's idea is that it will not just explain but *explain away* the Minds and Purposes and Meanings that we all hold dear. People fear that once this universal acid has passed through the monuments we cherish, they will cease to exist, dissolved in an unrecognisable and unlovable puddle of scientific destruction.¹³

Dennett believes that Darwin's dangerous idea will only demystify various areas of human behaviour and help humans to understand themselves better. However, the danger seems to be not about demystification but the explaining away of particular beliefs that are important for humans when they interact with one another. He makes unsubstantiated claims. The search for the reduction of mental events to physical events has not been successful and it is not at all clear that intentionality could possibly be reduced to natural items. Certain beliefs, such as those surrounding the concepts of freewill and moral responsibility, seem not to be conducive to reduction.

¹² Dennett, D. *Darwin's Dangerous Idea: evolution and the meaning of life*. Harmondsworth: Penguin, 1995. p.81.

¹³ *Ibid.* p.82.

These concepts stand within a social context and to explain them in physical terms is to misunderstand their being.

The rapid development within computer sciences has given an analogy from which to understand the human brain. If physical objects like computers can be developed to reveal intelligent behaviour then the human brain can be explained in purely physical terms. The concept of the mental, or explanations that are not entirely physical, have been marginalized. As Tooby and Cosmides say in the introduction to the book they jointly edit, *The Adapted Mind*:

The rise of computers and, in their wake, modern cognitive science completed the conceptual unification of the mental and physical worlds by showing how physical systems can embody information and meaning. The design and construction of artificial computational systems is only a few decades old, but already such systems can parallel in a modest way cognitive processes, such as reason, memory knowledge, skill, judgment, choice, purpose, problem-solving, foresight and language – that had supposedly made mind a metaphysical realm forever separated from the physical realm, and humans metaphysically disconnected from the causal network that linked together the rest of the universe. These intellectual advances transported the living, the mental, and the human – three domains that had previously been disconnected from the body of science and mystified because of this disconnection – into the scientifically analysable language of causation.¹⁴

Both nature and humans (who by this analysis are a part of nature) can be explained in the ‘scientifically analysable language of causation’. The argument of Cosmides and Tooby rests on the acceptance of scientific knowledge as the only form of knowledge. Scientific knowledge is reliant on the concept of physical causation. Even if the causes are understood in terms of probability, as within quantum physics, still the

¹⁴ Tooby, J. and Cosmides, L: ‘The Psychological Foundations of Culture’ in Barkow, J., et al. eds. *The Adapted Mind: evolutionary psychology and the generation of culture*. Oxford: Oxford University Press, 1992. p.20.

success of science relies on the assumption that there is a binding relationship between cause and effect over and above the psychological persuasion of repeated events as in the analysis of Hume. Cosmides and Tooby claim that humans can be totally explained within the terms of physical causation:

In this vast landscape of causation, it is now possible to locate 'Man's place in nature' to use Huxley's famous phrase and, therefore, to understand for the first time what humankind is and why we have the characteristics that we do. From this vantage point, humans are self-reproducing chemical systems, multicellular heterotrophic mobile organisms (animals), appearing very late in the the history of life as somewhat modified versions of earlier primate designs. Our developmental programs, as well as the physiological and psychological mechanisms that they reliably construct, are the natural product of this evolutionary history. Human minds, human behaviour, human artefacts, and human culture are all biological phenomena – aspects of the phenotypes of humans and their relationships with one another.¹⁵

The explanation that Cosmides and Tooby give assumes that all human behaviour is the result of complex biological mechanisms that have come about through the physical causes of evolution and natural selection. However, it overlooks the fact of thousands of years of civilization and the influence of language and cultural behaviour that has had a profound effect on the human mind.

This explanation of human nature by Cosmides and Tooby in terms of physical causation is a form of scientific reductionism as it explains all human behaviour in terms of biological processes that in turn can be explained by physical and chemical processes. Evolutionary psychologists, like Cosmides and Tooby, believe that human behaviour today is the result of evolutionary processes and there is nothing more. It is a deterministic account of human nature as they claim that the

¹⁵ Ibid. pp.20-21.

individual human is the sum of his/her genes that have been selected in the process of natural selection. As I have already explained, evolutionary psychologists do not deny that the environment plays a major role in the development of the individual, for it is the combination of genetic and environmental factors that determine a particular individual. As well as the individual all human social interactions, including those to do with morality, are explained as a result of these determining factors. The intentions of evolutionary psychologists are well-meaning as they believe that a scientific explanation of humans will not only unite all humans over and above their cultural identities but also provide a guideline as how to govern society.

However, their deterministic account has caused an outcry amongst philosophers because of the obvious dangers of such an explanation of humans within society. The determinism of evolutionary psychologists is a compelling one, particularly if scientific knowledge is accepted as the only valid way to obtain knowledge. It is hard to argue against them if one accepts monistic materialism. However, their theory not only undermines the concept of morality and freewill as previously understood, it also brings into question what we understand by the terms 'reason' and 'rational arguments'. John Lucas has a defeating argument against all forms of determinism:

So to the determinist, if what he says is true, he says it merely as a result of his heredity and environment, and of nothing else. He does not hold his determinist views because they are true, but because he has such-and-such a genetic make-up, and has received such-and-such stimuli, that is, not because the *structure* of the universe is such-and-such but only because the configuration of only part of the universe, together with the structure of the determinist's brain, is such as to produce that result...Determinism therefore is not true because if it was, we should not take the determinist's arguments as being arguments, but as being

only conditioned reflexes.¹⁶

If determinism were true there would be no point in arguing at all because we would simply be putting forward points of view determined by our genes and our environmental background. The main problem here is the acceptance of science as the only form of true knowledge. However, the scientific determinist undermines not only many valuable concepts that humans hold about themselves, but also the very truth of the science on which they put their trust. If humans are determined in every respect by their genetic inheritance and environmental influences, then the types of reasoning that they use in science is also determined by these factors. We would not be able to trust our reason that it could ever obtain truths about the world as we would all have ideas, including scientists, that were determined by our genes and upbringing.

These arguments would probably not worry a hard and fast evolutionary psychologist, as they would probably reply that human reason has been selected to be most successful for understanding the world around us. But there is still the problem of the individual whose genetic make-up might be slightly different, and also the very different types of environmental influences on each individual.

The main problem is in the area of morality. The determinism of evolutionary particular undermines our concept of morality. That humans have freewill is a condition for the possibility of morality. The moral act is the reasoned act that is decided upon in spite of any genetic or evolutionary factors. The determinism of the evolutionary psychologists opens the doors for individuals to be pre-judged by their genetic make-up plus any statistical conclusions that are made about the effects of different types of environmental factors that can influence human personality. The

¹⁶ Lucas, J. *The Freedom of the Will*. Oxford: Clarendon Press, 1970. p. 114 and p. 115.

theory could easily lead to society branding certain of its individuals as ‘a criminal type’ before any crime was committed. There is something fundamentally wrong about a theory that could lead to these kinds of decisions. Humans need a part of them that is thought to be over and above determining factors in order to preserve their moral worthiness. In Christianity the concept of ‘soul’ dealt with this problem quite efficiently. Now we have human rights, but can human rights give enough moral worthiness to an individual in spite of all determining factors in the same way as a concept of soul did?

Evolutionary psychologists hold that humans contain deeply ingrained, genetically-induced residues of their evolutionary past which are resistant to change by upbringing. Evolutionary biologists like Wilson often explain human behaviour by describing the behaviour of non-human animals or early hunter-gatherers, maintaining that humans will understand themselves through historical explanations. Morality is also explained in historical evolutionary terms.

However an evolutionary psychologist’s explanation of morality does not easily account for the types of moral revolutions that have happened within the history of humans, and the concept of acting on moral principle seems to be somewhat undermined. Their account of morality cannot account for the movement to abolish slavery because the realization that it was immoral might never have arisen if they were right. The fact that there had always been slavery would have been enough to persuade people to have endorsed its continuation. From an evolutionary point of view, slavery would be a natural development and there would be no need to abandon that particular type of social structure built upon it. The evolutionary psychologists could argue that economic and social pressures would alter the social structure so that slavery would become a less satisfactory system for survival but that explanation only

works within a particular culture and would not explain the general abhorrence to slavery that has spread world wide. One particular culture might change its economic and social structures, but other cultures would remain the same and yet come to the conclusion that slavery was wrong even though to abandon slavery would be economically detrimental to them. In these cases the moral argument would outweigh the economic pressures and the acceptance of a moral position may not always be best for survival whether for the individual or the society at large.

Within Continental philosophy human nature is fluid and non-deterministic. Any individual is free to decide his own being. Human nature within an ultra-Darwinist explanation is determined and ultimately the same throughout the world, although perhaps moderated by different cultures. However, this deterministic explanation of human nature limits the ability for humans to change their behaviour. If human nature is interpreted as set by natural selection, often with habits and behaviours that are outmoded for today's situation, there is little incentive for individuals to change their behaviour. If humans are understood to be a part of nature and nature is understood to be mechanistic, subject to causal laws, then it seems that human behaviour should continue as it does relying on natural selection to sort things out. The concept of natural selection holds within it the concept of survival of the fittest and competition between different patterns of behaviour. Thus the capitalist system fits in very nicely with the evolutionary psychologist's interpretation of human nature. Mary Midgley comments about the rise of scientific materialism in the 1970's:

Dawkins' and Wilson's books both came out in the mid-1970's, a time when, on both sides of the Atlantic, the moral tide was on the turn from the relatively idealistic, co-operative temper generated after the Second World War towards a more relaxed

mood of self-expression and self-indulgence. In Britain, the real advantages which the welfare state had produced were becoming familiar. They were beginning to be taken for granted while the drawbacks which had gone along with them began to be sharply felt. Bureaucratic control and the 'culture of dependence' were seen as grave evils. The immediate remedy prescribed for them was a return to commercial freedom and to extreme individualism generally which was seen for a time, with a good deal of unrealistic nostalgia a social panacea.¹⁷

The capitalist system is often seriously at odds with needs of the environment. The capitalist system is run blatantly for profit and cannot survive without the need for some to accumulate wealth at the expense of others. A description of human nature within the realms of biology supports the present status quo that has been shown many times to be detrimental to the environment. Capitalism dominates world economics and the wealth acquiring population has become international. In the words of Arran Gare:

The new international bourgeoisie are the agents of the new transnational organization of capitalism, bringing fulfilment to grand narratives underlying capitalism. The achievement and maintenance of their power has been possible through developments in communication, and to a considerable extent through the control of mass media which has been the site of unprecedented corporate activity in recent decades. This has been associated with massive expenditure by large, mainly transnational business corporations on public relations promoting the economic policies favourable to their expansion.¹⁸

Explanations of human nature in total scientific terms can have dangerous effects on the way people interact with one another and with the environment. Science

¹⁷ Midgley, M. *Science and Poetry*. London: Routledge, 2001. p. 197.

¹⁸ Gare, A. *Postmodernism and the Environmental Crisis*. London: Routledge, 1995. pp. 10-11.

is one particular area of knowledge and cannot be applied to all areas of human experience. Mary Midgley has written how scientific theories can take on a life of their own and have serious consequences:

The theory of evolution is not just an inert piece of theoretical science. It is and cannot help being also a powerful folk-tale about human origins. Any such narrative must have symbolic force. We are probably the first culture not to make that its main function. Most stories about human origins must have been devised purely with a view to symbolic and poetic fittingness. Suggestions about how we were made and where we come from are bound to engage our imagination, to shape our view of what we now are, and so to affect our lives. Scientists, when they find themselves caught up in these webs of symbolism, sometimes complain calling for a sanitary cordon to keep them away from science. But this seems to be both psychologically and logically impossible.¹⁹

Scientists so often assume that they are fact finding when often they have ventured beyond the domains of their subject and into the realms of pure theory. When a theory about human nature, like evolutionary psychology, claims that it is science and that science deals with facts and when the results of such a theory seem to endorse behaviour that is detrimental to the environment (or for relations between people for that matter), it is necessary to step back and examine it again.

To sum up, in scientific reductionism humans are the result of evolutionary processes, no different from other animals. All things in nature, including humans, can be described in physical, mechanical terms. There is no need of free will as previously understood to account for moral responsibility although humans are free to make choices within the limitations of a genetic make-up and environmental factors.

The behaviour of humans can be described in similar terms to that of other animals,

¹⁹ Midgley, M. *Evolution as a Religion: strange hopes and stranger fears*. London: Methuen, 1985. p.1.

and, in fact, study of behaviour of other animals is beneficial to understanding human behaviour. Humans are no different from other animals, simply more complicated. There is no such thing as a soul or spirit and certainly no other type of existence than the material. Nothing in nature is designed: it all happened by pure chance, an accumulation of certain physical and chemical processes. Scientific reductionism is anti-teleological and Ultra-Darwinists are vocally anti-religion. I am here discussing the extreme form of Darwinism, and these conclusions are not true for all Darwinists.

Continental philosophy is also against teleological explanations and religion. Nietzsche ridiculed religion and denied the existence of God who he understood to be a creation of our own minds. If there is no God then the concept of an ultimate purpose must be discarded. If there is no ultimate purpose then the meaning of life comes into question; therefore our thought about an ultimate meaning of life could well be pointless. If all thoughts about the meaning of life are pointless, how do we justify our existence? Nietzsche's reply, to which others have conceded, is that justifications are to be sought in the aesthetic sense. Nietzsche believed that people should be free from all restraints, all purpose and direction, in order to create their own beings and this is most fulfilled through the arts. His thinking has influenced the postmodernists. Amongst the intellectuals this justification through the aesthetic can produce fine living, but it can easily be debased into a life that seeks pleasure for itself. Arran Gare quotes Daniel Bell's summary of this situation from his book *Beyond Modern, Beyond Self*:

To the postmodernist successor of modernist artists, 'impulse and pleasure alone are real and life-affirming; all else is neurosis and death. In the literal sense, reason is the enemy and the desires of the body the truth. Objective consciousness

defrauds, and only emotion is meaningful.²⁰

Postmodernism accepts the aesthetic stance. Only the satisfaction of bodily pleasures at any level has any meaning. Reason is cast off and the Enlightenment project is rejected. There are no objective values and therefore only the subjective stance can be valid.

Postmodernism is anti-worldviews, or 'grand narratives' and so deconstructs the ingredients that are necessary for a worldview, such as God, self, purpose, real world and truth as correspondence. They accept differences and the concept of pluralism. As well as being anti-teleological and anti-worldviews, postmodernism denies progress in the history of human kind. The concept of progress would be included in a 'grand narrative' that postmodernists reject. All cultures have equal weight and therefore no culture is superior to another: no culture has 'progressed' further in civilization than another:

The most widely accepted characterization of the postmodern condition is that offered by Lyotard. It is 'the incredulity towards metanarratives'; that is, the incredulity to any discourse which makes appeal to some grand narrative, such as the emancipation of the rational, the liberation of the exploited, or the creation of wealth, which can legitimate all particular claims to knowledge. What does this mean? The loss of credibility of grand narratives is essentially a loss of belief in progress.²¹

Without 'worldviews' or 'grand narratives', postmodernism evolves into a concern with language as a system of signs that humans have created, for understanding the world about us. These signs are therefore arbitrary and their

²⁰ Gare, 1995. op. cit. p. 16.

²¹ Ibid. p.4.

meanings conveyed by a system that is conventional. But then language becomes self-contained and can tell us nothing of the world outside of itself. Derrida reasons that language is always 'metaphorical' in a Nietzschean sense. This means that language can never take us beyond to some kind of objective truth that lies beyond our own local culture and history. Language can never have an inner meaning and cannot prevent change or fix ideas, so it cannot establish essentialist 'truths' such as about human nature or nature. The conclusion is that language and reality is the same thing; we can never escape from textuality and free-floating signifiers. There is obviously a major fault in this theory in that it leads to an inability to produce any new theories.

For the ancients Mind came first. There was an order and a purpose in nature that united everything. This concept also gave value to nature, as with an order and purpose each individual has a value within the whole. Both Ultra-Darwinism and Continental philosophy are metaphysically poorer as they fail to give a firm foundation for values of any kind. Neither systems of thought accept the possibility of objective values. They certainly have a problem to find value for nature, as I shall show in Part III.

I have argued that scientific reductionism considers humans as a part of nature and that Continental philosophy is concerned with humans as apart from nature. However Continental philosophers would view it differently. They would accuse science in general of objectifying nature and leaving humans out of any account, as in the Cartesian view of nature, while believing that they describe humans as embedded in nature. Whilst I agree that science can objectify humans if human nature is explained in reductionist terms this need not be necessarily true for science in general.

In both systems of thought the individual is isolated, with no positive relation

to nature. Ultra-Darwinism largely presents a warring nature, 'red in tooth and claw', in which the individual fights for survival: Continental philosophy leaves the individual to create its own self and its own values whatever they may be. These two views of nature and human nature result in the individual being alienated from others and from nature.

Chapter 4

Scientism and postmodernism

Since the 1970's discussions on the problems of the environment have increased, yet, in practical terms, very little has been achieved. The attitudes of governments and the general public have not changed to any great extent in their interaction with the environment. In my thesis I have been trying to trace the cause of this inertia, believing that it is in some way connected to how we understand human nature and our relation to nature.

Arran Gare explains this inertia as a result of the conflicting images presented by the media that often deny the existence of environmental problems.

In the introduction to this book an article was quoted which spoke of a massive inquiry into the earth's environment and claimed that humanity is in a war for survival, a war in which all nations must be allies. This implies that gaining universal recognition of global environmental crisis is straightforward, and that there should be little difficulty in achieving universal consensus about its severity and significance. However, the notion of a global environmental crisis is a social construction...As yet, there is no definitive social construct of the environmental crisis. The mass media presents one image of the global environmental crisis, scientific journals another, while economic journals scarcely recognize any but minor problems which can be solved by the proper functioning of the market. Scientists, economists and business leaders in the USA have dismissed environmentalists as cranks, while many political leaders in the Third world countries see the claims of environmentalists as nothing more than an effort to prevent Third World countries sharing the benefits of industrialization.¹

¹ Gare, A. *Postmodernism and the Environmental Crisis*. London: Routledge, 1995. p.73.

There has been some acceptance from world powers of the seriousness of environmental problems since Gare's book, but nevertheless political problems around the world gain precedence over environmental concerns, and day to day life for many around the world is still lived contrary to the needs of the environment. Gare outlines the problems that are a part of any environmental movement. There is not a common picture of the state of the environment or a consensus on environmental problems and it all leads to confusion. Even in environmental philosophy there are many disparate ideas and very little agreement.

The inertia of governments and people in general cannot simply be the result of a confused picture presented by the media, business and governments. To call the global environmental crisis a 'social construction', as Gare does, is to fall into the postmodernist mode of thinking in which the reality of the situation is not as important as the social construction. The problem is the confusion at a deeper level of what it is to be human and the relationship humans have towards nature and, indeed, what our concept of nature is. Our concept of nature and our relationship to it is paradoxical. This brings out the persistent problem of whether humans are a part of nature or apart from nature, a problem which has now become more complex with the two main strands of contemporary thought which have developed through Continental philosophy and Ultra-Darwinism. Not only are these two modes of thinking accepted at one and the same time, but neither system of thought gives a positive concept of either nature or the human relationship to nature as outlined in the previous chapter. Certainly neither gives a guideline to help people to value nature

The picture of humans as a part of nature is strongly presented to us by science and particularly the biological sciences in its reductionist form. Ultra-Darwinists could be accused of scientism in that they accept the realities that science

describes without question. Ultra-Darwinists accept that any explanation of humans is to be in terms of evolutionary processes and only evolutionary processes governed by causal, physical laws. The underlying metaphysics is monistic materialism. Materialism, or physicalism, is the general thesis that originated with the ancient atomists, Democritus and Lucretius, that everything that exists is a purely material (or physical) entity, so that every individual or groups of individuals has only physical properties. Thus, as in eliminative materialism, even the mental is understood to be identical to the physical brain and so all discourse about mental events will eventually be eliminated when science has advanced enough to understand the whole brain and its parts.

Science affirms an objective reality even though it may be open to interpretation and revision. Within these strict scientific lines the way to understand humans is by learning as much as possible about the history of their development from simple single-celled creatures to the more complex. Humans are different from non-humans only by degree: there is nothing that is unique to humans, except that they are more complex evolved creatures. By studying non-humans that are close to ourselves on the evolutionary tree, we can have a better understanding of ourselves. This interpretation of humans is in direct contrast to that of most thinking before the 19th century. Under that interpretation, mind came before matter and humans had a special place within the creation. The concept of the Great Chain of Being, in which humans were in a position between lower animals and the divine, was adopted by most Christians, and the unique position given to humans in creation was reinforced by the doctrine of the Fall. The possession of soul and intellect separated humans from all other beings. Evolutionary theory, as interpreted by Ultra-Darwinians, has

reversed the place of intellect. Matter comes before mind and, in fact, mind is a by-product of matter or even nothing but matter, the concept of a mind being an illusion.

Ultra-Darwinians give an explanation of humans as firmly within the causal laws of nature. The implication of this is that human nature is deterministic because if humans are the result of physical processes then all thought and action are within this framework of causation. The apparent randomness at the quantum level can be explained by the limitations of our knowledge at present. Science, for Ultra-Darwinians, becomes a means for salvation, as Mary Midgley describes it, to solve all problems and give a full explanation of human nature and nature. Midgley rightly sees the need to question this aspect of the acceptance of all scientific based theories about humans:

Does this language of salvation seem alarmingly strong?
I use it because I want to stress throughout this book how deeply these matters affect all of us, not only scientists and not only intellectuals. Any system of thought playing the huge part that science now plays in our lives must also shape our guiding myths and colour our imaginations profoundly. It is not just a useful tool. It is also a pattern that we follow at a deep level in trying to meet our imaginative needs.²

Mary Midgley's use of the word 'myth' is probably more to do with story telling than with the way Nietzsche uses the word to deny all objective knowledge. Midgley would accept the validity of scientific investigation but is concerned about the wild speculations that grow from it. Some areas of knowledge are outside the realms of the scientific method.

Although many Continental philosophers accepted that humans were subject to causal laws, as did Nietzsche, at the same time there is a concept of human freedom

² Midgley, M. *Science as Salvation: a modern myth and its meaning*. London: Routledge, 1992. p.1

that is in direct opposition to the thinking of evolutionary theory. According to existentialism humans can create themselves. There are certain facts in their lives (Sartre's facticity) but there is no true essence to human nature. The concept of human nature within Continental philosophy is much more fluid than in evolutionary theory. Continental philosophy dismisses objective reality. All knowledge consists of myths, metaphors and narratives. Turning away from the concept of objective knowledge, Continental philosophers place the emphasis on language and symbols and the social constructions that humans create. Under the influence of this type of philosophy nature becomes less central to the interpretation of human nature. Nature is as humans perceive it: it is as much a construction of our awareness of the world as any human institution. The concept that nature is a social construction is largely taken for granted in post-modern writing. Thus Gare can state within the paragraph already quoted:

However the notion of a global environmental crisis is a social construct.³

Postmodernism has encouraged the thought that what is understood as reality is the result of certain power structures and institutions. Thus Gare continues:

To talk of 'massive injury to the environment', holes in the ozone layer, the rising level of carbon dioxide in the atmosphere and the possible effects of this on average global temperatures, to consider the total amount of land devoted to agriculture or covered by closed forests or to calculate the rate at which stocks are being depleted, is to invoke complex frameworks of concepts based on metaphors negotiated or sustained by practices of investigation which are themselves sustained by a large number of institutions of research,

³ Ibid. p.73

communication and administration, which are in turn sustained by political and economic institutions and processes of different kinds at local, national and global levels.⁴

Gare accepts that any talk about the environment or nature is going to be one that is based on 'metaphors' created by various institutions.

Continental philosophy, with its emphasis on individual freedom and subjective knowledge, has given rise to the notion that we all create our own realities and use our will to power to establish those realities over others. Thus any concept of nature is a result of those that have the greatest power. Gare gives the reasons for the development of postmodern thinking . He believes it is the result of globalization and the growth of a new international order, blurring national identities. At the same time ethnic minorities have fought for the expression of their own identities. The result has been that western civilization has accepted itself as simply one type of cultural expression and has given up its role as leaders in the world:

It is likely that in this new global order, Westerners will no longer be the main beneficiaries of 'progress'. The future no longer belongs automatically to Caucasians, and the incredulity towards grand narratives can be partly understood as disorientation caused by this. It is the response of people of European descent to their powerlessness within the world-order created by European civilization. This disinclines them to even contemplate grand narratives, which, to have any plausibility, could only portray them as insignificant bystanders in the march of history.⁵

Gare depicts a world that is in the throes of great turmoil, beset by the confusions of the meeting of different cultures and systems of values. In this confusion only

⁴ Ibid. p.73

⁵ Ibid. p. 8.

economic values can have weight, for people would only have the value of survival to give them direction in life. But in fact if postmodernism is the reaction of western civilization to the general confusion it is 'throwing out the baby with the bath water'. In a time of confusion what is required even more is a system of values beyond economic ones and that these values are understood to be valued for all time for all humans and not the result of a concocted 'grand narrative'.

Postmodernism leads to a fractured concept of human nature and one separated from nature. Nature can only be known through the subjective stance and therefore the concept of nature is human-based.

The two opposing systems, today expressed as scientism and postmodernism, surface at a cultural level. C.P. Snow noted this difference at a cultural level in the middle of the last century. He describes two cultures:

I give the most pointed example of this lack of communication in the shape of two groups of people representing what I have christened 'the two cultures'. One of these contained the scientists whose weight, achievement and influence did not need stressing. The other contained the literary intellectuals. I did not mean that literary intellectuals act as the main decision makers of the western world. I meant that literary intellectuals represent, vocalise, and to some extent shape and predict the mood of the non-scientific culture: they do not make the decisions but their words seep into the minds of those who do. Between these two groups – the scientists and the literary intellectuals – there is little communication and, instead of fellow-feeling, something like hostility.⁶

Snow was concerned about the opposition in thinking between scientists and the humanities that had developed in the twentieth century. Since then the humanities have been influenced by Continental thinking and the gulf between the two cultures

⁶ Snow, C.P. *The Two Cultures*. With an introduction by S. Collins. Cambridge: Cambridge University Press, 1969. p. 60.

has increased. Science has a louder voice today, to the extent that we can call its total acceptance 'scientism', an acceptance already current in the mid-twentieth century, but postmodernism affects many of the social aspects of today's society. In this thesis I have tried to reveal that these two cultures are, at foundation, reliant on very different metaphysics. One that believes that the world has some objective reality and can be explained in physical terms and one that denies all objective knowledge and interprets the world around it as social and political interactions of humans. The confusion today is not only one of cultural and political movements, as Gare describes, but a fundamental problem where these two diverse interpretations of human nature and nature are accepted simultaneously. People accept that they are a part of nature and deny its hold on them. This paradox causes the inertia that Gare mentions, for it makes any decision difficult especially in the areas of values and ethics.

Although some philosophers have maintained the necessity of values that are Platonic or Christian based, largely the present two systems of thought have abandoned objective values. Within the scientific sphere evolutionary theory is used to describe human nature. Any values that humans have are ones that have evolved for the survival of the species, individual or gene. In a simplistic analysis, the main value is survival, for all human actions can be interpreted as being those that lead to survival, even such acts that normally would be called altruistic or cooperative. In Continental philosophy humans create values freely. The individual is called upon to create his own value system for his own needs. In both systems of thought teleological explanations are scorned; the concept of ultimate purpose and direction is abandoned. In general both science and the post-modernism movement are concerned with particulars. Habermas interprets this type of conceptual movement today as an

anti-Platonist reaction to the objective viewpoint of Platonism. Platonists emphasize abstract universals while anti-Platonists focus on particulars. Habermas sees an opposition between Platonists and anti-Platonists throughout history and concludes that the trend today is largely anti-Platonist. He wonders if the dispute can ever be resolved:

From the repetitious cycles of enduring dialectics of enlightenment we learn that today's anti-Platonism has a heritage as impressive as Platonism itself. The anti-Platonist spirit emerges from important materialist, sophist, and skeptic strands in classical Greece. This critical attitude even seizes power with late medieval nominalism and extends via early modern empiricism (still prevailing in the Anglo-Saxon world) and throughout the nineteenth century up to Nietzsche, American pragmatism, and German historicism. These movements show a critical attitude towards metaphysics and a liberal one in politics. Each of them equally responds to a new wave of perceived contingencies.⁷

Both science and postmodernism could be interpreted as being within this anti-Platonist phase. Neither system of thought is interested in metaphysics as all-encompassing world-views: both are caught in historicism. The conflict of the two systems of thought brings an inability to act. Baudrillard is a mouthpiece of the post-modernist situation:

There is a clear analogy here with the slowing down of history when it rubs up against the astral body of the 'silent majorities'. Our societies are dominated by this mass process, not just in the demographic and sociological sense, but in the sense of a 'critical mass', of passing beyond a point of no return. This is the most significant event within these societies: the emergence, in the very course of their mobilization and revolutionary process (they are all revolutionary by the standards of past centuries), of an equivalent

⁷ Niznik, J. and Sanders, J. eds. *Debating the State of Philosophy: Habermas, Rorty and Kolakowski*. Edited by J. Niznak and J. Saunders with contributions by E. Gellner and others. Connecticut: Praeger, 1996. p.5.

force of inertia, of an immense indifference and the silent potency of that indifference. The inert matter of the social is not produced by a lack of exchanges, information or communication, but by the multiplication and saturation of exchanges. It is the product of the hyperdensity of cities, commodities, messages and circuits. It is the cold star of the social and, around that mass, history is also cooling. Events follow one upon another, cancelling each other out in a state of indifference. The masses, neutralized, mithridatized by information in turn neutralize history and act on an *Ecran d'absorption*. They themselves have no history, meaning, consciousness or desire. They are the potential residue of all history, meaning and desire. As they have unfurled in our modernity, all these fine things have stirred up a mysterious counter-phenomenon, and all today's political and social strategies are thrown out of gear by the failure to understand it.⁸

This passage reflects the state of a society that is inundated with information of conflicting principles and historical awareness. The lack of understanding, the inability to piece together a particular worldview, leads to inertia. Knowledge from science, that is supposed to be of an objective world, does not help the social situation. In fact Baudrillard uses a scientific analogy to help describe the present social situation:

Whether the universe is expanding to infinity or retracting towards an infinitely dense, infinitely small nucleus depends on its critical mass (and speculation on this is itself infinite by virtue of the possible invention of new particles). By analogy, whether our human history is evolutive or involutive perhaps depends on humanity's critical mass. Has the history, the movement, of the species reached the escape velocity required to triumph over the inertia of mass? Are we set, like the galaxies, on a definitive course distancing us from one another at prodigious speed, or is this dispersal to infinity destined to come to an end and the human molecules to come back together by an opposite process of gravitation? Can the human mass, which increases every day, exert control over a pulsation of this kind?⁹

⁸ Baudrillard, J. *The Illusion of the End*. Translated by Chris Turner. Cambridge: Polity Press, 1994. pp.3-4.

⁹ Ibid. p.5.

Baudrillard's thinking reflects a society that has become disillusioned with science or any other system of thought. Science has failed to solve all problems or to give any meaning to existence. It is like any other worldview that is now understood to be only a metaphor or grand narrative. Baudrillard implies that our society is directed by the fleeting images of the media:

One has the impression that events form all on their own and drift unpredictably towards their vanishing point – the peripheral void of the media. Just as physicists now see their particles only as trajectory on screen, we no longer have the pulsing of events, but only the cardiogram, have neither representation nor recollection of them, but merely the (flat) encephalogram, neither desire nor enjoyment of them, but only the psychodrama and the T.V. image.¹⁰

For Baudrillard the human condition is today parallel to environmental problems.

Everything must be recycled. It is a picture without direction and purpose or meaning or value:

The ecological imperative is that all wastes must be recycled. Otherwise, they will circle endlessly like satellites around the earth, which has itself returned to the state of a lump of cosmic waste. What is happening with history is the foreshadowing of this dilemma: we can either perish under the weight of the non-degradable waste of the grand empires, the grand narratives the great systems made obsolete by their own gigantism, or else recycle all this waste in the synthetic form of a heteroclit history, as we are doing today in the name of Democracy and Human rights, which are never anything but the confused end-product of the reprocessing of all the residues of history – crusher residues in which all the ethnic, linguistic, feudal and ideological phantoms of earlier societies float... We shall not be spared the worst – that is, *History will not come to an end* - since the leftovers, all the leftovers – the Church, communism,

¹⁰ Ibid. p.19.

ethnic groups, conflicts, ideologies – are indefinitely recyclable.¹¹

There is nothing in Baudrillard's philosophy of direction or progress. Everything is devoid of meaning. Humans are caught within the residues of past 'grand narratives'.

With all history at our disposal humans are unsure which way to understand themselves: there are so many theories and myths, leftovers as Baudrillard calls them, to take. Baudrillard shows the result of this dilemma in the example of the Biosphere 2 experiment. A second earth is created, mimicking the original one: the artificial is easier to accept because reality has no meaning:

Real life, which surely, after all has the right to disappear (or might there be a paradoxical limit to human rights?) is sacrificed to artificial survival. The real planet, presumed condemned, is sacrificed in advance to its miniturized, air-conditioned clone (have no fear, all the earth's climates are air-conditioned here) which is designed to vanquish death by total simulation. In days gone by it was the dead who were embalmed for eternity; today it is the living we embalm alive in a state of survival. Must this be our hope? Having lost our metaphysical utopias, do we have to build this prophylactic one?¹²

Baudrillard suggests that the belief that humans create their own values coupled with the evolutionary value of survival results in humanity being doomed to simulate environments, or create a 'reality', in which to survive. This may be an extreme view of the human condition but the conflict between scientism and postmodernism as explanations of human nature does present a problem. The problem is particularly noticeable within any discourse about the environment. The problem is at a

¹¹ Ibid. pp.26-27.

¹² Ibid. pp. 87-88.

metaphysical level. Without a coherent metaphysical structure the possibility of a meaningful system of values is impossible to achieve. How can we find values for the environment today if we have a confused understanding of ourselves and our relationship to nature? If we cannot find a meaning for ourselves within nature it is unlikely that we will be able to know what to value.

Baudrillard also looks at the problem of values. Continental philosophy has largely followed the philosophy of Nietzsche and has stressed that humans should emancipate themselves from all superstitions (religions, immortality etc.). But the question is what should humans do once emancipated from such beliefs? Baudrillard suggests that the choice is to be an individualist, a Marxist or to be the Overman of Nietzsche's philosophy. The 'beyond' is no longer that of religion but humanity reaching beyond its own condition. The Nietzschean Overman can only rule itself by the transvaluation of values; otherwise it is condemned to superstitious beliefs. However, Baudrillard shows how the Nietzschean transvaluation of values has not succeeded:

Needless to say, this transvaluation of values of which Nietzsche speaks has not taken place, except precisely in the opposite sense – *not beyond, but this side of good and evil; not beyond, but this side of true and false, beautiful and ugly etc.* A transvaluation folding in upon itself towards a non-differentiation, a non-distinction of values, itself fetishized in an aesthetics of plurality, of difference etc. Not any longer a fetishization of divinities, great ideas or grand narratives, but of minimal differences and particles. It is in this respect that fetishism has become radical; it has become minimal and molecular; it is no longer the fetishism of a *form*, but of a mere *formula* - subliminal, subhuman. The boundaries of the human and the inhuman are indeed blurring, yet they are doing so in a movement not towards the superhuman, but towards the subhuman, towards a disappearance of the very symbolic characteristics of the species. *Verkarung des Untermenschen.* Transfiguration of the subman.¹³

¹³ Ibid. pp.94-95.

I have quoted Baudrillard at length because he does in some way highlight the dilemmas of today. Nietzsche's dismissal of traditional values to be replaced by those of the Overman has indeed been unsuccessful. There have been no other values to replace the traditional ones and the result has been a fracturing of all values. The individual's values are as good as any others. Baudrillard seems to be giving a picture that fits partly into Habermas' interpretation; that the thought of today is in a phase of anti-Platonism being fractured into particulars with no overruling framework into which to place the particulars. In this background of thought it is the survival of the individual that becomes paramount. The Enlightenment programme, as all other all-encompassing systems, is discarded as faulty.

The original, Enlightenment humanism was based on man's qualities, his virtues, his natural gifts, his essence, together with his right to freedom and to the exercise of that freedom. Current humanism, which finds its highest expression in the new extension of human rights, is more concerned with the conservation of the individual and of man as a species (in the one case, immortality is a virtue; in the other, it is merely a right to conservation). But human rights immediately become problematic, since the question arises of the potential rights of other species, of nature etc. and in respect of which they have to be defined. Now, does humanity even have rights over its own genome? What does it mean for a species to have the right to its own genetic definition and then to its potential genetic transformation?¹⁴

Baudrillard expresses the inability to appeal to higher values, because those belong to metaphysical beliefs that have been discarded. All that is left is the appeal to particular rights; rights of the individual, rights of minority groups, rights of species.

¹⁴ Ibid. pp. 96-97.

Rights were once the domain of legal contracts. Today they have taken on a life of their own, without any metaphysical structure to support them.

The result of postmodernism is the acceptance of conflicting values, which leads to deadlock in any attempt to form reasons for particular actions on the larger social scale in any area of life and not only towards solving the problems of the environment. Postmodernism can only result in the pragmatism of Richard Rorty. Rorty's philosophy has its roots both in the analytic thinking of American philosophy and Continental philosophy. It has developed from the philosophy of Dewey and James as well as from that of Nietzsche. It is a type of thinking that is in the anti-Platonist mode:

If one thinks of philosophy as the love of wisdom, and of wisdom as consisting in the grasp of truth, and of truth as the accurate representation of natural order, then one has reason to doubt that philosophy is possible. For various twentieth century movements within philosophy have denied the existence of such a natural order, in the sense of an order which persists regardless of human languages and human history. The tradition in European philosophy which stems from Nietzsche – a tradition now often called 'post-modernism' - insists that there is no such order. The pragmatic tradition in Anglophone philosophy does so as well.

In this lecture, I want to discuss what philosophy, in the sense of 'the love of truth', might mean once one has abandoned the definition of truth as the accurate representation of a natural order. I think that abandoning that definition has made it advisable to change the meaning of the term 'wise', and I should begin the lecture by suggesting how this might be done...

I shall use 'pragmatism' as a name for the views about truth, knowledge and rationality which were common to Nietzsche and William James. These views are corollaries of the denial that there is any order which exists independently of human languages and human history.¹⁵

¹⁵ Rorty, R. 'Is it Desirable to Love Truth?' in Rorty, R. *Truth, Politics and 'Post-modernism'*. Spinoza lecture 1. Assen: Van Gorcum, 1997. pp. 13-14.

Pragmatism abandons the idea of a natural order that can be discovered. Language is no longer representational but a way of imposing an order; it is a tool with which to function in the world:

But if descriptions are viewed pragmatically rather than representationally, they will be evaluated as we evaluate tools, rather than in the way we evaluate photographs.¹⁶

If we apply the pragmatist's approach to our understanding of nature we appear to have some problems. If there is no natural order to discover and we are imposing a framework on nature through our use of language, which framework should we use? . The pragmatist takes the relativist view of Protagoras of Ancient Greece where 'man is the measure of all', for if it is language that gives truth and value to everything then there is nothing objective to be found. Rorty insists that no language brings us any closer to the way things are than any other. Order comes from the way languages fit together:

Any descriptive vocabulary comprehensive enough to relate lots of things we talk about to lots of other such things will produce a description of an ordered universe.¹⁷

Nature, according to Rorty, may be described in any possible way that is preferred:

Once one starts thinking in terms of equally valid descriptions the idea that nature might prefer to be described in one vocabulary rather than another begins to seem merely quaint. It looks like a

¹⁶ Ibid. p.22.

¹⁷ Ibid. p.17.

relic of the anthropomorphism which Spinoza and Hobbes both decried. Nature under a description will always exhibit an order. But nature undescribed in any human language is simply Kant's unknowable thing-in-itself, an utterly useless notion, the plaything of philosophical sceptics, a toy rather than a tool.¹⁸

Rorty cannot really mean what he appears to be saying. It does not seem possible that we should understand the order of nature simply to be a product of our own languages. It would make any scientific inquiry senseless. Even if the pragmatist does not like an underlying reality, the notion of such seems to be a basic concept without which no knowledge of any kind would be of any worth to anyone. The pragmatist approach to the world about us is highly suspect particularly for anyone working within environmental problems. The following seems to be the least helpful statement a philosopher could make:

To sum-up: the more one thinks about language, the less need there is to think about nature.¹⁹

If language is indeed a tool with which we understand the world about us, it appears that many philosophers throughout the world have become entranced with the tool in itself. The pragmatist links the scientific reductionist framework to the ideas of Continental philosophy in which constructs of language within a cultural background play an important part. Rorty shows his philosophy to be strongly dependent on Darwinian theory. Value decisions are based on pragmatic actions within a biological setting. Rorty wants to escape the Cartesian picture of mind and

¹⁸ Ibid. p.17.

¹⁹ Ibid. p.17.

with it the concept of rationality and an objective reality. Rorty dismisses the dichotomies of philosophy: mind/body, appearance/reality. These dichotomies are, according to Rorty, illusory thinking. Distinctions are simply a matter of more useful or less useful. It appears that Rorty is influenced by a particular form of Darwinian thinking. Thinking is the product of evolutionary creatures that are trying to survive:

Pragmatists hope to break with the picture which, in Wittgenstein's words, 'holds us captive' – the Cartesian – Lockean notion of a mind seeking to get in touch with a reality outside it. So they start with a Darwinian account of human beings as animals doing their best to develop tools which will enable them to enjoy more pleasure and less pain. Words are among the tools which these clever animals have developed.²⁰

In pragmatist terms, language is just a tool for survival: it is a way humans have learnt to handle the environment. But the pragmatists' approach to language devalues value words for there can be nothing with true value if language is the source of that value for the sake of human survival. Certainly nothing can ever have intrinsic value. The only value is survival of the human species, 'these clever animals'.

Rorty has a way to defeat the sceptic over the problem how humans can know what is reality:

There is no way in which tools can take one out of touch with reality. No matter whether the tool is a hammer or gun or a belief or a statement, tool-using is part of the interaction of the organism with its environment. To see the employment of words as the use of tools to deal with the environment, rather than an attempt to represent the intrinsic nature of that environment, is to repudiate the question whether human minds are in touch with reality – the question asked by the epistemological skeptic.²¹

²⁰ Niznak and Sanders eds., 1996. op. cit. pp. 37-38.

²¹ Ibid. p. 38.

Although the pragmatist's approach may triumphantly defeat all scepticism, it does not provide any value for nature other than a pragmatic one. The conclusion must be for a pragmatist that there are no intrinsic values to be found in nature because there is no reality outside our definition of it and our own needs of survival. In this type of explanation of humans, Rorty suggests that the only values we have are those of each organism surviving and, if survival is easily attained then also of 'gratifying our desires'. Once again there is an echo of the philosophy of Lucretius and the Epicureans:

The right question to ask is, For what purposes might it be useful to hold that belief? This is like the question, For what purposes would it be useful to load this program into my computer? On the view I am suggesting, a person's body is analogous to the computer's hardware, and his or her beliefs and desires are analogous to the software. Nobody knows or cares whether a given piece of computer software represents reality accurately. All we care about is whether it is the software which, among programs currently available, will most efficiently accomplish a certain task. Analogously, pragmatists think that the question to ask about our beliefs is not whether they are about appearance, but simply whether they are the best available habit of action for gratifying our desires.²²

But the question Rorty leaves open is: how do we decide which desires to gratify?

When it comes to problems of the environment this attitude to belief systems seems to detract from the possibility of any meaningful action towards solving those problems.

If it is all a matter of selecting belief systems that are the best available for action, then it is easy to argue that the western capitalist system is not destructive to the

²² Ibid. pp. 39-40.

environment because many people benefit from it. This does, in fact, seem to be the conclusion of many people today. If relating belief systems or knowledge do not relate to appearance or an underlying reality, any reason for action becomes entirely arbitrary. Rorty's pragmatic approach to action promotes the type of individualistic, multi-cultural society in which Rorty himself lives. The main guideline for living in such a society is tolerance at all costs. Therefore even truth must be defined in terms of tolerance, even though 'tolerance', as a value word, cannot be justified:

When we praise a scientist or scholar for the love of Truth what we often have in mind is simply open-mindedness: curiosity about opinions different from their own, tolerance for the existence of such opinions, and willingness to let their own views be corrected by argument. When we say that someone loves truth more than herself we may mean simply that she respects her colleagues enough to prefer the view which they can, freely and peaceably agree upon to the view she has developed on her own.²³

With this type of attitude towards truth and belief systems it seems there can be little room for arriving at any conclusion about action, for if one person should argue that global warming is caused by humans and another argues that it is not, then according to Rorty, we should each tolerate one another's opinion. The result would inevitably be no action for where would be the truth of either opinion on which to act?

Not only does Rorty undermine the concept of truth to simply a matter of tolerance, but he is also dismissive of the concept of reality, and reason as a means to discovering reality. He criticizes the rationalist:

For the rationalists, Reason has authority, because Reality, the way things are in themselves, has authority. Reality deserves respect, and

²³ Rorty in Rorty, 1997. op. cit. p. 25.

Reason is the faculty which puts us in touch with Reality. For us 'post-modernists', on the other hand, reason is conceived dialogically. We treat it as just another name for willingness to talk things over, hear the other side, try to reach peaceful consensus. It is not the name of a faculty which penetrates through appearance to the intrinsic nature of either scientific or moral Reality. For us, to be rational is to be conversable, not to be obedient.²⁴

When it is problems of the environment, how long must we converse before we create a need to take action? We could converse forever, which in fact is the result today under the influence of postmodernist thought. Here we have Rorty summing up the background of today's thought in which nothing can possibly be achieved:

We think that anything you can do with notions like 'Nature', 'Reason', and 'Truth', you can do better with such notions as 'the most useful description for our purposes' and 'the attainment of free consensus about what to believe and to desire'.²⁵

But who will decide which is the most 'useful description'? For whom or what is it the most 'useful description'? Could one ever attain a 'free consensus about what to believe and to desire' when there is no solid foundation on which to even begin to have a belief of any kind? Where do these beliefs come from? The pragmatist seems to have a severe epistemological problem.

Rorty's pragmatic solution has many faults. It results from the integration of the two major systems of thought of today, that of scientism and Continental philosophy. It brings us to an impasse. A consensus of opinion can never be adequate for any major decision, and least of all when dealing with environmental

²⁴ Ibid. p.43.

²⁵ Ibid p.43.

problems. Neither scientism nor Continental philosophy provides us with the values we need to make decisions about the environment, as I have argued above. But the two systems of thinking combined make any progress impossible. In fact, they both decry progress and with that the possibility of changing situations for the better. The result is that the free market of capitalism, so often blamed for the destruction of the environment, is left entirely free without any restraint placed upon it.

PART III

Value

Introduction

The first part of my thesis involved looking at the concept of nature through history. How have people in the past understood nature? In Part II I explored the concept of human nature in relation to nature as it has developed up to the present day. Since Kant's philosophy there have been two distinctly different ways in which to perceive humans in relation to nature. Throughout history there has been a conflict between whether humans can be perceived as a part of nature or apart from nature and this distinction has continued into the complexities of thinking today. On the one hand is the explanation of human nature that has come through science and evolutionary theory resulting in the extreme form of Ultra-Darwinism which rests on the assumption that scientific knowledge is the only form of knowledge. This has been termed scientism. On the other hand is a postmodernist interpretation of humans developed from Continental philosophy. I have argued that the unquestioned acceptance of these two conflicting views has caused the inertia of today, particularly in regard to the solving of environmental problems. In the confusion of today the rejection of any encompassing metaphysics and the support of pluralism has seemed to be the only option, or otherwise to accept a type of pragmatism that is exemplified by Rorty's philosophy.

The combination of scientism and postmodernism leads to some difficult problems as regards to ethics in general and environmental ethics in particular. Both scientism and postmodernism are metaphysically poor and do not provide firm foundations for a system of values. Ethical theories may accept either explanation of

humans or a composite of the two. It is therefore not surprising that environmental philosophers are in the main part concerned with the problem of how humans should find value for the environment and ultimately for nature. It is a difficult task largely because, as I have indicated above, both explanations of humans, taken to their logical conclusion, support the view that the only value for each individual to hold is that of their own survival, or, in prosperous times, that of the satisfaction of their own desires or interests. Metaphysical systems that support only individual values are ideal for the flourishing of the capitalist system without any restraint. The capitalist system ultimately values economic wealth for the individual. But profit-making systems are time and again accused for their disregard of environmental factors. The capitalist system needs restraint, but where do the values come from that can restrict capitalism?

Environmental philosophy struggles in a situation of value-poor metaphysics.

The search for values means that environmental ethics becomes the main area of interest in environmental philosophy.

Environmental philosophy is a relatively new field of philosophical ethics concerned with describing the values carried by the non-human natural world and prescribing an appropriate ethical response to ensure preservation or restoration of those values. This often urgent concern arises especially in view of threats to nature posed largely by humans. These threats are both to other humans and to non-humans, placing in jeopardy the commitment of life on earth... The principal question underlying such research was how values carried by nature could best be described, often asking whether nature is directly morally considerable in itself, rather than only indirectly morally considerable because it is appreciated or needed by humans¹

¹ Light, A. and Rolston, H. 'Introduction: ethics and environmental ethics' in Light, A. and Rolston, H. eds. *Environmental Ethics: an anthology*. Oxford: Blackwell, 2003. pp. 1-2.

The task of finding values for nature has proved difficult because environmental philosophers so often restrict themselves to basing values on scientific facts or a postmodernist interpretation of humans.

Patrick Curry also recognizes the two modes of thinking within environmental writing. He describes scientism as follows:

First there is the clear complicity of objectivism, realism and rationalism – culminating, potentially and often actually, in scientism – in the ecological crisis. Such approaches are united in maintaining and propagating the idea of the ‘environment’ (a word that already does a lot of work marginalizing nonhuman nature) as essentially a mere setting for the human drama, most of which comprises a set of passive resources for the advancement of human interests, with the latter being the most, or even only ethically considerable kind.²

Curry understands ‘scientism’ as anthropocentric in its approach and that scientific thinking promotes anthropocentrism. Curry describes the second approach:

The second understanding of nature involves a family of approaches commonly held (by both its proponents and opponents) to take the opposite view in relation to the first: social constructivism, cultural relativism, and/or postmodernism... The nonhuman natural world is a tabula rasa, whether mere inert matter or a dynamic but meaningless chaos, upon which human beings struggle to write, read and erase each other’s social, cultural and political concerns. So I shall call the members of this school constructionist subjectivists.³

Curry is describing the view that has largely developed from Continental thinking that humans can never escape their subjective perceptions of the world.

² Curry, P. ‘Re-thinking Nature’ in *Environmental Values*. Vol. 12 (3) 2003. p.338.

³ *Ibid.* pp. 339-340.

I would agree with Curry to a certain extent. I have argued that the total acceptance of science can lead to what may be termed as scientism as scientific materialists assume that scientific explanations are the only ones. Science is based on the search for objective knowledge and the assumption that there is a 'real' world that can be found through the scientific enterprise. Indeed science could not begin to function without these two fundamental assumptions. However, although science can lead to the objectification of nature as opposed to the subjective being of humans so that 'the idea of the 'environment' ..[is] essentially a mere setting for the human drama...' as Curry describes it, it can also include humans within its objective study so that every part of the being that is human is to be understood as a part of the object 'nature' where 'nature' implies 'all that is'. This is the assumption of evolutionary psychologists as well as eliminative materialists. In this construction of reality humans can be understood objectively like any other part of nature. Although not all scientists take this extreme view there are indications in society at large that many accept this assumption.

On the other hand within a postmodern interpretation of nature, the nonhuman world is '...a tabula rasa, whether mere inert matter or a dynamic but meaningless chaos, upon which human beings struggle to write, read and erase each others' social, cultural and political concerns', as Curry describes it. What humans understand as nature is seen through the prism of social and political movements: nature is not the objective reality of the scientists but a human construction. But then nature is fragmented into as many cultural and political pieces as there are humans to construct their frameworks of understanding, and nature becomes a victim of human idiosyncrasy. In this way of understanding nature humans are apart from nature, as a concept of nature can only be formed through human social and political

constructions. Environmental philosophers who accept postmodern interpretations of humans discuss the need to change our language and to construct new ‘narratives’ or ‘worldviews’.

The paradoxical nature of these two systems of thought is that they each regard themselves as depicting humans as a part of nature: humans are the result of evolutionary processes like anything else; humans are ‘embedded’ in nature and all human experience is from that ‘embeddedness’. But they would accuse each other of depicting humans as apart from nature: humans objectify nature through scientific, mechanistic explanations; or again humans deny the reality of nature and only see it as a social or political construction of humans.

Environmental ethics encounters all the problems of ethical theory today, but with the additional problem of including the non-human within the ethical sphere. Ethical theories that were possibly coping with problems of morality become inadequate. When the non-human is included within the ethical circle the search for a metaphysical system on which to base the ethical theory becomes even more important. It is then that we reach this deep metaphysical problem of how humans relate to nature and is at this level that there is a fundamental contradiction in the way we understand ourselves. Are we beings like any other within nature and thereby another object of scientific investigation, or are we constructing our realities and thereby creating concepts of both nature and ourselves within our cultural contexts?

In the third part of my thesis I would like to look at how environmental philosophers have tried to find value for the environment and how they are influenced by the two concepts of nature and human nature as discussed above.

Chapter 1

Science-informed Environmental Philosophy

A large part of environmental philosophy shows the extent of the influence of the biological sciences, sometimes accepting the explanation of human nature in terms of Ultra-Darwinism. Thus a recent article by Walter Dodds largely accepts an Ultra-Darwinism explanation of humans when dealing with game theory and conservation:

Animals behave selfishly because of their evolved propensity to survive and propagate. All non-human animal behaviours that seem altruistic (unselfish) can be explained as successful strategies of selfish individuals driven by their genetic program. Dawkins' *The Selfish Gene* explained eloquently how evolution selects for strategies that benefit the survival of genes, leading to a ubiquitous strategy of 'you scratch my back, I'll ride on yours'.¹

In his quoting of Dawkins he implies that he accepts the Ultra-Darwinist explanation of animal behaviour, including human behaviour. However, he does concede that humans are in some respects different from non-humans:

Humans are unique in that we, as a species, are able to realise that it is in our best interests to avoid destructive short-term behaviour of selfish individuals. We are also unique in having cultural evolution in addition to biological evolution.²

He also concedes that human behaviour can be more complex than simple evolutionary selfishness or altruism for he says:

¹ Dodds, W. K. 'Game Theory and Conservation' in *Environmental Values*. Vol. 14 (4), 2005, p. 414.

² *Ibid.* p. 414.

It may be useful to distinguish between selfishness as a characteristic of evolutionary fitness and psychological egoism (the idea that human behavioural choices are always driven by selfish motives.)³

Nevertheless his article is written on the assumption that the behaviour of humans is the result of evolutionary selective processes and that selfishness is a characteristic of evolutionary fitness. This begs many questions. The problem stems from Dawkins' use of the word 'selfish' to describe genes. As has been pointed out by other philosophers, the term 'selfish' functions within the social/moral framework of humans. It is inappropriate to apply the term to biological entities. Any behaviour that is selected by evolutionary processes is outside the realms of morality: there can be no good or bad behaviour in nature. It is only through humans that the concept of good or bad behaviour (altruistic or selfish etc.) has meaning. Whatever has been selected by evolutionary processes in humans is prior to any moral description. Therefore, Dawkins and his disciples are incorrect on two accounts: first, to apply a moral term to a biological entity; and second to extrapolate that any behaviour in humans that can be described in moral terms is the result of evolutionary processes. Any environmental philosophy founded on Dawkins' 'selfish gene' is sadly misled.

Environmental philosophers whose philosophy is informed by the biological sciences may not accept the extreme reductionism of Ultra-Darwinism, but they certainly accept the statements of science as being approximately true. They at least accept:

1. That there is objective knowledge.
2. That statements in science are usually true, particularly within the realms of biology, ecology and evolutionary theory.

³ Ibid. p. 414.

3. That biology, ecology and evolutionary theory are the best ways of understanding nature and human nature over and above other sciences and other forms of knowledge.
4. That eventually a form of 'naturalism' may be possible, whereby values can be obtained from the natural world.

Science-informed environmental philosophers, seeking to find values from the facts of science, are led into debates on anthropocentrism (weak and strong) versus non-anthropocentrism, and instrumental value versus intrinsic value. These arguments are the result of the difficulty of establishing values from the facts of science. To place values only with humans would lead to strong anthropocentrism that many environmental philosophers wish to avoid, claiming that it has been strong anthropocentrism (humans valuing nature only for their own interests), that has caused environmental problems. To avoid anthropocentrism some environmental philosophers hold that nature has intrinsic value or some value of its own beyond human concerns. However, a science-informed environmental philosophy takes the facts of science to find value when scientific knowledge, by definition, should be value-free. I shall look at the work of some science-informed environmental philosophers to show the types of problems that arise.

Early environmental philosophers understood the need for humans to alter the perception of themselves in relation to nature and many of them worked within the scientific paradigm. J. Baird Callicott describes the background thinking of much environmental philosophy:

Environmental philosophers, rather, are attempting to articulate a new worldview and a new conception of what it means to be a human being, distilled from the theory of evolution, the New

Physics, ecology and other natural sciences.⁴

Callicott is working within the scientific paradigm but he uses the term 'worldview' in a way that shows the influence on him of postmodernism. It is not that we should seek to understand ourselves as we really are in relationship to nature but that we should form for ourselves a new conception out of the worldview that science offers. This is the human animal constructing its own realities. Nevertheless Callicott describes environmental philosophers as working within the monistic materialism of the sciences wherein humans are a part of nature and are to be understood as one species among many, all of which have equal rights. This is a holistic approach to environmental philosophy whereby the whole ecological system has value beyond the individual.

Callicott takes Aldo Leopold's *A Sand County Almanac* as his starting point. Aldo Leopold accepted the facts of the biological sciences to realign the relation of humans to nature. Callicott describes him:

He was an environmental philosopher before environmental philosophy came on the scene. He was an amateur twenty-first century philosopher, exploring the moral implications of the biological sciences, living in the twentieth century – and only during the first half of it, at that.⁵

Leopold emphasized the need of a holistic, biotic, non-anthropocentric approach to our dealings with nature. His guiding principle was:

⁴ Callicott, J. Baird. *Beyond the Land Ethic: more essays in environmental philosophy*. New York; State University of New York, 1999. p.30

⁵ Ibid. p. 7.

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.⁶

He was attempting to use the biological sciences to provide an ethical guideline.

But Callicott is aware of the difficulties in providing a moral theory from the sciences, because of fact/value dichotomy:

As it seems to me, the more obvious theoretical problem facing the land ethic is how, in view of the divorce between fact and value decreed in twentieth-century academic philosophy, science can inform ethics, more especially, how the theory of evolution and ecology can inform the land ethic.⁷

Callicott maintains that evolutionary theory can inform ethics, and I shall deal with his theory of value later.

For Leopold the emphasis for moral significance is the community, not the individual. Ecological principles of integrity and stability are of primary importance. But the land ethic of Leopold fails to offer a complete ethical theory for humans in the future. The implications of Leopold's land ethic are unacceptable to any understanding as to how humans should interact with one another and is only concerned with the good of the land. Human needs would be overlooked for the good of ecological balance. Although Leopold understood the land ethic as not a single principle but another principle to be added to already functioning moral principles, it would be difficult to hold this consistently as the land ethic would clash with other moral principles.

⁶ Leopold, A. *A Sand County Almanac: and sketches here and there*. Illustrated by C. W. Schwarz. Introduction by R. Finch. Oxford: Oxford University Press, 1989. pp. 224-225.

⁷ Callicott, 1999. op. cit. p. 7.

The land ethic has been accused of ecofascism and there is an element of truth in the accusation. It demands certain behaviour from humans to keep an ecological balance that would often go against human compassion. Furthermore the land ethic has problems today because it was based on an understanding of ecological balances in nature that are no longer accepted within scientific circles. Science has put forward another view of nature, as Callicott admits:

Sometime around 1975, the equilibrium, or balance-of-nature worldview in ecology gave way to one in which nature is constantly changing often chaotically and in which violent disturbance is a normal and healthy, not an abnormal and pathological, occurrence.⁸

This picture of the ecological norm does little to help build any system of moral behaviour.

Leopold intended his ethics to be non-anthropocentric:

In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it.⁹

However, in the final analysis, his main concern is with good management of the land, and this is a human-centred concern. He calls for a conservation programme informed by the ecological sciences. In this way he fails to be non-anthropocentric, for the health of the land that he wishes to promote is in terms of human needs.

⁸ Ibid. p.8.

⁹ Leopold, 1989. op. cit. p. 204.

Callicott develops Leopold's land ethic. He accepts the truths of modern science but is against the 'worldview' that he calls the Baconian-Cartesian-Newtonian model. This he interprets as a view of humans as apart from nature where nature is viewed mechanistically. He wants to move to what he calls the Darwinism-Einsteinian-Leopoldian model:

Put positively, I think that the political implementation of environmental ethics – the only implementation that can make a significant practical difference – will follow upon the transition of the prevailing worldview from the Baconian-Cartesian-Newtonian model to a Darwinian-Einsteinian-Leopoldian model. When we – we the people, not just we environmentalists – come to see nature as a systemic whole and ourselves as thoroughly embedded in it, a part of nature, not set apart from it, then what is called the 'political will' necessary for mutual coercion mutually agreed upon may materialize.¹⁰

He is concerned to change the 'worldview' so that humans will want to act favourably towards the environment. For 'worldview' he means that a certain type of metaphysical understanding of the world should be accepted. But the move from the Baconian-Cartesian-Newtonian model to a Darwinian-Einsteinian-Leopoldian model as he advises is not such a change in direction as he believes, for both 'worldviews' are underpinned by scientific knowledge and the belief that humans are simply one part of nature. Although Bacon would have understood his own thinking to be placing humans apart from nature, and environmental philosophers often accuse him of 'objectifying' nature in opposition to humans, yet within Bacon's promotion of the scientific method were the seeds of understanding humans as a part of nature. As science progressed every aspect of humans was explained within a monistic

¹⁰ Callicott, 1999. op. cit. p.51.

materialist interpretation. Monistic materialism can easily lead to a mechanistic description of humans based on the acceptance of a hierarchy of the sciences whereby all the sciences can be reduced to events explained by physics. Humans then can be understood as embedded in a mechanistic nature where all events are subject to physical causes including all parts of human consciousness.

Callicott is inspired by what he calls New Physics, the physics of relativity and quantum theory coupled with evolutionary theory. He is not against new technology, as many environmentalists have been, because he sees it as linked into a holistic view of the world where humans are a part of nature:

Ecology and the New Physics are cognitively resonant and complimentary. The emerging solid-state solar-electronic generation of technologies embodies the systemic and holistic foundations of the New Physics.¹¹

Rather than this being in direct contrast to the Baconian-Cartesian-Newtonian model, his interpretation becomes an extension of this model with the teleological view of the cosmos, as well as humans being privileged in some way, having been removed.

The land ethic of Leopold that Callicott champions supports the monistic materialism of an extreme form of Darwinism and alters the ethical status of humans:

Leopold summarizes Darwin's natural history of ethics with characteristic compression: 'All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts'. Then he adds an ecological element, the community model of the biota espoused most notably by Charles Elton: Ecology 'simply enlarges the boundaries of the community to include soils, waters, plants

¹¹ Ibid p.56.

and animals, or collectively the land to which we belong', not as 'a commodity belonging to us', that some 'simplest reason' of which Darwin speaks, might kick in. And, when it does, what results will be a land ethic that 'changes the role of *Homo sapiens* from conqueror of the land community to plain member and citizen of it'.¹²

Although there is a need for humans to no longer picture themselves as 'conqueror of the land community', the description of humans as 'plain member and citizen' seems to deprive humans of taking any particular ethical role, for if all in the land community, both humans and non-humans alike, are plain members and citizens there seems to be no room for humans to be in any favoured position to make decisions for the well-being of all. Yet it is important that humans are in a position to make value judgements about the land, for only through humans comes the concept of a healthy environment. The land ethic cannot be a basic principle that can link humans satisfactorily in a moral way to the environment

Callicott holds that all values are subjective, human-created. However, he maintains that this does not mean that values should be human-centred or anthropocentric. Humans can value the nonhuman world intrinsically and not just instrumentally. He accepts the explanation of human nature given by evolutionary psychologists and that values have evolved through natural selection:

...Callicott accepted a kind of socio-biology, manifesting itself as a belief in the biological origin of ethics in the community. Ethical behaviour in human beings is instinctive, having been evolutionarily selected for, since ethical responses by individuals in a biological community makes the species most likely to survive.¹³

¹² Ibid. p. 66.

¹³ Palmer, C. 'An Overview of Environmental Ethics' in Light, A. and Rolston, H. eds. *Environmental Ethics: an anthology*. Oxford: Blackwell Publishers Ltd., 2003. p. 24.

His theory of evolutionarily evolved values goes some way to explaining the possibility of shared values among humans, although it is debatable whether such values as justice and mercy could be explained by his theory. His insistence that morality is about survival much like keen eyesight or sharp hearing demolishes the concept of morality as previously understood:

Darwin's biosocial account of the origin of moral values explains how value in general, and moral values in particular, have become more or less fixed, standardized by natural selection. Having the right values is every bit as necessary to our survival and reproductive success as having keen eyesight, sharp hearing, good health, strength and so on. We must have a robust sense of what Hume and Smith called 'self-love', that is, we each value as an end-in-itself our own life and *instrumentally* value those things that really are means to our own well-being...and in order that our familial and social institutions might flourish, we must value, as *ends-in-themselves* our parents, siblings, spouses, friends, neighbors, colleagues, fellow citizens *and* those social institutions as such – our families, communities, etc.¹⁴

His description of morality reveals that he has some confused thoughts on these matters. The extent of his confusion is shown by the way he equates morality with 'right values', that is right values for survival.

Rather one may be said to have the right values in the same sense that one may be said to have the right number of fingers if one has five on each hand. Values, like physical features, have been normalized, standardized by natural selection. And just as many human physical characteristics...sometimes exhibit wide range of normalcy, so likewise do many human psychological characteristics, human values among them.¹⁵

¹⁴ Callicott, 1999. op. cit. p. 87.

¹⁵ Ibid. p. 87.

His account of morality suggests that each human may have evolved in a slightly different way in having 'right values'. If someone has not evolved to the 'norm' then they may not survive, or, at least, have difficulty in surviving. This account is a very odd basis for morality. An ethical theory cannot be based on a deterministic account of human nature, for morality must be appropriate to every human being and not some successfully evolved elite. Callicott wants values to be 'correct' or not 'correct' so that they are not relative, but he denies them any truth criteria:

Thus, while a given value is neither true nor false, something pragmatically equivalent and functionally analogous to truth and falsity serves to make some values correct and other incorrect. Values are not, therefore, radically relative.¹⁶

Callicott's aim to provide a holistic account within environmental ethics, based entirely on evolutionary selection, leads him to an ethical theory that would exclude some humans from the 'norm' as well as making morality only a survival tactic. This cannot be correct. Evolutionary theory may be able to inform some areas of ethics but it cannot be the only explanation and guideline for values. For sociobiologists, like Callicott, values in general and moral values in particular are described as the result of evolutionary processes and *only* the result of evolutionary processes. This offers a description of how morality exists and why certain things are valued today but it is hard pressed to give guidelines for what ought to be valued in the future. Do we wait to be selected by evolutionary processes to find if we had the 'correct' values? An historical account of values is inadequate to motivate us to have concern for nature.

¹⁶ Ibid. pp. 87-88.

Furthermore, Callicott's sociobiological explanation for environmental ethics leads him to give the community ethical priority over the individual. He argues that for the health of a community, some individuals may have to be sacrificed for the whole. This leads him to a position which opens him to the accusation of being an ecofascist. To escape this accusation he claims that the land ethic is a supplement to community-based social ethics. But then he contradicts his belief in the need of a monistic environmental ethics. A sociobiological account, concerned as it is with survival, is inadequate to preserve the dignity of the individual human. It is contrary to many ethical systems that promote concern for the suffering individual. Later Callicott changed his position to allow humans to be the centre of concentric circles of concern, with ethical obligation diminishing towards the outside. With this concession he weakens his claim to be non-anthropocentric for in any moral situation humans would be preferred before non-humans. He denies that nothing matters except human interests, but if human interests are put first would this position be much different from a weak anthropocentric position which would take in non-human interests for the benefit of humans?

A sociobiologist account of human nature is not adequate to give a basis for an environmental ethic. It is possible to accept evolutionary theory, but oppose the extreme reductionism of it in its application to humans that underlies the type of philosophy that Callicott prescribes. How far science can explain human nature, consciousness and mind as well as morality, is a debateable issue. Brian Baxter tries to support a sociobiological explanation of humans as a way towards an environmental ethics, but he himself agrees that evolutionary history gives a bleak explanation of humans:

It has to be admitted, however, that this picture has its dark side too- it is a tale of life forms emerging by an immensely long process of death, suffering and destruction. Certainly,...the evolutionary approach to our self-understanding has some extraordinary challenging claim for us to contend with – that the process has no pre-ordained end-point or purpose; that nature does not contain harmony and balance; that death and suffering are integral to it, not optional extras; that human beings can rely only upon each other for care, concern and compassion, and that these may have a fragile basis in our natures. The most troubling point of all is that our deepest moral concerns emerge solely and contingently from our evolutionary-produced natures, not from some fundamental source within the very fabric of being. These are not just deeply disturbing thoughts, they are also very new ones, and will take a great deal of time to assimilate them and rethink our philosophical position in the light of them.¹⁷

The above passage outlines all the reasons why there should be strong opposition to a sociobiological approach to human nature and why it will not be assimilated but eventually strongly rejected. Baxter remarks that evolutionary explanation has no ‘pre-ordained end-point or purpose’. The concept of purpose within human nature I shall be discussing further later in this thesis, but I would like to say here that the concept of purpose is an important one for humans. It links with a concept of progress. A sense of progress is often the major factor in motivating humans to action. A theory that does not take into account the human need to project into the future is not adequate for the explanation of human nature. Baxter points out that nature, being the result of evolutionary processes, contains no balance or harmony. But humans often bring into discussions about the environment the need of balance and harmony in nature. If these concepts are not in nature then an evolutionary explanation of humans is not enough for the presence of such a concept in humans.

¹⁷ Baxter, B. ‘Naturalism and Environmentalism: a reply to Hinchman’ in *Environmental Values*. 15 (2006) p. 65.

Furthermore, we need the concepts of balance and harmony as well as progress when we wish to project forward to a vision of having a better relationship with nature.

Baxter also shows the bleakness of a description of morality in terms of evolutionary processes, 'that our deepest moral concerns emerge solely and contingently from our evolutionary-produced natures...' and he is right that it would be bleak if that were the case. But morality has as its major characteristic that it is unlike anything that is in nature. Human beings alone in the world are moral beings and morality is often about going in opposition to the ways of nature. It is also very often not about survival at all. These aspects of morality cannot be satisfactorily explained by sociobiologists and, if that is so, a sociobiologist account, of human nature, like that of Callicott, is not adequate as a basis for an environmental ethic.

Holmes Rolston also has a holistic approach to the environment but not a sociobiological one. He bases his arguments on the sciences of ecology and evolutionary theory, although he also includes a more individualistic approach in contrast to Callicott. Unlike Callicott, he argues for objective values in nature, although these are not moral values. He argues for the individual within the system. Individual value is the *telos* of each individual organism: every organism has a good of its own. His argument rests heavily on the genetic DNA claiming that the genetic set is a normative set, but not in a moral way:

Even stronger still, the genetic set is a *normative set*; it distinguishes between what *is* and *what ought to be*. This does not mean that the organism is a moral system, for there is no moral agent in nature apart from persons, but that the organism is an axiological system, an evaluative system. So it grows, reproduces, repairs its wounds, and resists death. We can say that the physical state the organism seeks, idealized in its programmatic form, is a valued state. *Value*

is present in this achievement.¹⁸

Sentience or ability for conscious reflection add value, so that the more sophisticated a living organism, the more valuable it is. But is this the way back to anthropocentrism, for presumably humans are the most sophisticated of all organisms?

Rolston also thinks that intrinsic value lies beyond the individual and is applicable to species and ecosystems. His emphasis on survival values indicates the influence evolutionary theory has had on his work:

The appropriate survival unit is the appropriate location of valuing.

All such valuing is deeply embedded in the historical evolutionary ecosystem. The species lineage is woven into the supporting, stimulating, biotic community. The system is a kind of field with characteristics as vital for life as any property contained within particular organisms. The ecosystem is the depth source of individual and species alike; it has systemic value. The molecular configurations of DNA are what they are because they record at the microscopic level the story of a particular form of life in the macroscopic historical ecosystem.¹⁹

He has three tiers of values that are found in nature: intrinsic value for the individual, instrumental value within species, and systemic value in the ecosystem. The ecosystem and the biosphere have value according to Rolston because they are life-creating processes. It is creativity in individuals, species and ecosystem that give them value:

¹⁸ Rolston, H. *Environmental Ethics: duties to and values in the natural world*. Philadelphia: Temple University Press, 1988. pp. 99-100.

¹⁹ Rolston, H. *Genes, Genesis and God: values and their origins in natural and human history*. The Gifford Lectures. University of Edinburgh, 1997-1998. Cambridge: Cambridge University Press, 1999. p. 43.

Humans are not so much lighting up value in a potentially valuable world, as they are psychologically joining ongoing planetary natural history in which there is value wherever there is positive creativity. While such creativity can be present in subjects with their interests and preferences, it can also be present objectively in living organisms with their lives defended, and in species that defend an identity over time, and in systems that are self-organizing and that project storied achievements.²⁰

There are problems in his theory. If every individual of every species has a telos that gives it intrinsic value, and species too have a value of their own, it would be difficult to justify the view that any individuals that are not human, or indeed entire species (such as disease carrying insects) need to be eradicated because of the harm they cause humans. There are many living things that at least need some tight control by humans or life for us would be very unpleasant. When we introduce the concept of intrinsic value we are intending to give a reason for preventing the destruction of the things of nature, otherwise I am not sure what work the term 'intrinsic value' is doing in environmental ethics. 'Intrinsic value' may be too strong a term for what we need to protect the things of nature. I shall discuss the concept of intrinsic value later in this chapter.

A further problem in his theory is the difficulty there would be in reconciling the value of an individual with the value of the species and also with that of the whole system. Indeed he argues that sometimes the value of nature as a whole takes priority over the needs of individual people. In the end he argues that it is the ecosystem that is the appropriate unit of morality, which makes his environmental ethics a holistic one. A holistic environmental ethics can lead to some unpleasant conclusions if followed rigorously. Rolston's concern for ecological systems and preservation of

²⁰ Rolston, H. 'Value in Nature and the Nature of Value' in Light and Rolston. 2003. op. cit. p. 152.

species leads him to put humans second in situations where the environment is likely to be destroyed. He is seriously wrong in his conclusions:

Yes, but there is another kind of killing here, one not envisioned at Sinai, where humans are superkilling species. Extinction kills forms (species) – and not just individuals; it kills collectively, not just distributively. Killing a natural kind is the death of birth, not just of an individual life. The historical lineage is stopped forever. Preceding the Ten Commandments is the Noah myth, when nature was primordially put at peril as great as the actual threat today. There, God seems more concerned about species than about humans who had then gone so far astray... There is something ungodly about an ethic by which late-coming *Homo Sapiens* arrogantly regards the welfare of one's own species as absolute, with the welfare of all the other five million species sacrificed to that. The commandment not to kill is as old as Cain and Abel, but the most archaic commandment of all is the divine, 'Let the earth bring forth'. Stopping that genesis is the most destructive event possible, and we humans have no right to do that.²¹

Quoting the Bible within a philosophical argument is not always appropriate.

However, I think Rolston has his interpretation wrong about the Noah myth. The story seems to be about saving the righteous man Noah and his family. And the archaic commandment 'bring forth' was surely made secondary to the main commandment of the New Testament. Biblical texts aside, it cannot be moral to protect nature to the disadvantage of humans and by 'disadvantage' I mean whereby the situation of a human life would become intolerable. Our moral circle should be widening, not including non-humans at the expense of humans. What we should be looking for is particular moral behaviour from humans that will protect all humans as well as nature. A holistic environmental philosophy may lose the importance of humans and the moral status that we have correctly given to ourselves. In Rolston's

²¹ Rolston, H. 'Feeding People versus Saving Nature?' in Light and Rolston. 2003. op. cit. p. 461.

later writing he is arguing for a favoured moral position for humans, but this may lead to a moderation of his holistic ethics.

Rolston's environmental ethics is ecocentric and, like Callicott's, is in favour of the species over the individual. Paul Taylor offers a biocentric environmental ethic and puts a moral obligation towards individuals:

I argue that finally it is the good (well-being, welfare) of individual organisms, considered as entities having inherent worth, that determine our moral relations with the Earth's wild communities of life.²²

Taylor argues that humans are just one species among many and that non-humans, like humans, should receive as much respect as human individuals. Like Rolston he believes that all living things have a telos and a good of their own which gives them 'inherent worth' (a similar term to 'intrinsic value'). The difficulty of maintaining this argument is shown by Taylor's complex arguments to resolve moral conflicts.

Taylor's environmental ethics is based once again on an evolutionary interpretation of human nature:

We share with other species a common relationship to the earth. In accepting the biocentric outlook we take the fact of our being an animal species to be a fundamental feature of our existence. We consider it an essential aspect of 'the human condition'. We do not deny the difference between ourselves and other species, but we keep in the forefront of our consciousness the fact that in relation to our planet's natural ecosystems we are but one species population among many... In this light we consider ourselves as one of them, not set apart from them.²³

²² Taylor, P. W. 'The Ethics of Respect for Nature' in *Ibid* p. 74.

²³ *Ibid*. p.76-77

But his thinking leads him to the conclusion that the earth would be a better place without humans:

If, then, the total, final, absolute extermination of our species (by our own hands?) should take place and if we should not carry all the others with us into oblivion, not only would the Earth's community of life continue to exist, but in all probability its well-being would be enhanced. Our presence, in short, is not needed. If we were to take the standpoint of the community and give voice to its true interest, the ending of our six-inch epoch would be most likely greeted with a heavy 'Good riddance'.²⁴

What we are ultimately looking for in an environmental ethic is one that will motivate people to care for nature. Environmental philosophies that depict humans as unimportant to the earth, or even that the earth would be better without them, do not give such an incentive. There is something seriously wrong with any ethical theories that want to eliminate humans for the sake of nature.

However, Taylor makes some concessions for human enterprises, such as the advances of medical sciences against harmful living things. This demolishes his argument for equality for all living things. He has a hierarchy of interests with humans placed at the top. Thus his attempt for non-anthropocentrism is somewhat weakened. In any situation human interests would be considered first and this would lead to a similar solution as within a weak anthropocentric position. A weak anthropocentric position could hold that human interests come first but that would not mean that humans should act destructively towards nature because the care of nature would be in the long term interest of humans.

²⁴ Ibid. pp. 77-78.

Deep ecologists also have a holistic approach to environmental philosophy, but they emphasize the need for social and political change as well as including a metaphysical, and indeed mystical, account of nature and human nature. The ecophilosophy of Arne Naess is also based on the science of ecology. Within his philosophy humans are regarded as a part of nature and just one of the many species that share the planet, as Rothenberg explains::

More precisely, it is the utilization of basic concepts from the science of ecology – such as complexity, diversity, and symbiosis – to clarify the place of our species within nature through the process of working out a total view.²⁵

Naess praises the ecological field worker who has the insight to see the necessary connections in ecosystems. From this he draws the conclusion that it is not only humans that have the right to live. He advocates an equal right to life for all, although later he qualifies ‘all’, for ‘all’ cannot possibly mean every individual living creature. However, to insist on the continuation of the privileged position of humans in ethical decisions is to be anthropocentric and to be anthropocentric is detrimental to all life whether human or non-human:

The ecological field worker acquires a deep-seated respect, even veneration, for ways and forms of life. He reaches an understanding from within, a kind of understanding that others reserve for fellow men and for a narrow section of ways and forms of life. To the ecological worker, *the equal right to live and blossom* is an intuitively clear and obvious value axiom. Its restriction to humans is an anthropocentrism with detrimental effects upon the life quality of humans themselves.²⁶

²⁵ Rothenberg, D. Introduction. *Ecosophy T - from intuition to system*. In Naess, A. *Ecology, Community and Lifestyle: an outline of an ecosophy*. Translated and revised by D. Rothenberg. Cambridge: Cambridge University Press, 1989. p. 3.

²⁶ Naess, A. *Ecology, Community and Lifestyle: an outline of an ecosophy*. Translated and revised by D. Rothenberg. Cambridge: Cambridge University Press, 1989. p. 28.

The eco-philosophy of Naess demands a non-anthropocentric approach to problems of the environment. Based on the science of ecology Naess believes that he can give a normative system – an ecosophy – that would govern the behaviour of humans so that they would act within the natural processes of the environment. This he calls ‘deep ecology’ which he puts in opposition to ‘shallow ecology’. ‘Shallow ecology’, more recently named ‘light green ecology’, is based on the acceptance of anthropocentrism although encouraging concern for the environment. The environment should be cared for but only by taking into account the needs of humans. Naess is scornful of this attitude as are all environmentalists who accept deep ecology. Katz explains the deep ecologist’s position:

These shallow policies attempt to reform human activity regarding the environment without instigating a systematic change in human behaviour, attitudes or institutions. Deep ecology, on the other hand, offers a normative critique of human activity and institutions and seeks a fundamental change in the dominant worldview and social structure of modernity.²⁷

Naess rejects anthropocentrism and gives intrinsic value to non-humans:

The well-being and flourishing of human and non-human life on Earth have value in themselves (synonyms: intrinsic value, inherent worth). These values are independent of the usefulness of the non-human world for human purposes.²⁸

²⁷ Katz, E. et al. ‘Introduction: deep ecology as philosophy’ in Katz, E. et al. eds. *Beneath the Surface: critical essays in the philosophy of deep ecology*. Cambridge: MIT, 2000. p.ix.

²⁸ Naess, A. ‘The Deep Ecological Movement: some philosophical aspects’ in Light and Rolston, 2003. op. cit. p. 264.

If I can digress, a word here needs to be said about the concepts of anthropocentrism and non-anthropocentrism as well as the related terms of 'intrinsic value' and 'instrumental value'. Holistic type environmental philosophers lay the blame of environmental problems on an anthropocentric approach to nature: environmental problems have been caused by human-centred activity. Their argument is that we need to have a non-anthropocentric approach to nature, that we should move beyond caring only for humans and their needs and care also for all living things or even both living and non-living things on earth. This leads to the argument of instrumental value versus intrinsic value. If humans are the centres of concern then it is obvious that the things of nature only have instrumental value. But for holistic environmental philosophers this is not enough, because some reason must be given to value nature beyond just human needs. The term 'intrinsic value' is then introduced. 'Intrinsic value' means that any such thing, living or non-living, that has intrinsic value is valued for itself and not just instrumentally.

The lengthy discussions on intrinsic value reveal that it is not a simple term. Its definition for anyone is linked to fundamental beliefs, so that often the term is used in many different ways in philosophical texts. Not only does this cause confusion, but often the same philosopher will use the term 'intrinsic value' with different senses within the same text. John O'Neill in his article 'The Varieties of Intrinsic Value' helps reveal the complexities of the term. The use of 'intrinsic value' he says is an example of the fallacy of equivocation:

The term 'intrinsic value' is used in at least three different basic Senses:

1. Intrinsic value(1) Intrinsic value is used as a synonym for non-instrumental value...
2. Intrinsic value (2) Intrinsic value is used to refer to the value an object has solely in virtue of its 'intrinsic properties'...

3. Intrinsic value (3) Intrinsic value is used as a synonym for 'Objective value' ie. value that an object possess independently of the valuation of valuers.²⁹

I would suggest that 'intrinsic value' as defined by O'Neill in the second sense is the only legitimate sense. 'Intrinsic value' should not be equated with 'objective value' for there could be things that can have objective value in nature without them having intrinsic value. Further, to claim that the things of nature should not only have instrumental value does not lead to them having intrinsic value. Intrinsic value is a term with a stronger meaning than that of one merely equivalent to non-instrumental value.

The legitimate use of 'intrinsic value' would be to indicate that an object has something 'solely in virtue of its intrinsic properties', coupled with Callicott's definition that it indicates the goodness of something independent of any consciousness that might value it. But this needs explaining. What things in the world have properties that would give them value in themselves? We can say this of humans. This was not always so, for slaves were humans that had instrumental value and were not valued in themselves. But we now hold that all humans have intrinsic value that gives them particular rights. Humans should be valued for themselves even if this is not always put in practice. This gives them moral standing.

However, this move is easy for humans, because we are self-conscious beings who are value-makers, but it is more difficult to give intrinsic value to non-humans. For the question is whether intrinsic value is an objective value that can be

²⁹ O'Neill, J. 'The Varieties of Intrinsic Value' in Light and Rolston. 2003. op. cit. pp. 131-132.

discovered, or whether it is one created by humans. There have been extensive debates about the origin of values:

This discussion of intrinsic value, however, inevitably raises a second question about the origin of value. Is it created by human beings, or is it something already in existence in the world, which human beings recognize rather than bring into being? Again this is a subject of great debate amongst environmental ethicists, sometimes called the dispute between value *subjectivists* and value *objectivists*. Value subjectivists argue that intrinsic value is something which humans create and attach to their own lives, the lives of other people, and/or to particular states of affairs (such as pleasure or, the avoidance of suffering) or perhaps to values such as harmony. Value objectivists, on the other hand, think that non-instrumental value is not something which humans create, but something already in the world.³⁰

The problem of value subjectivists is the return to human-centredness and thus becomes a form of anthropocentrism, which defeats the point of intrinsic values and the problem for value objectivists is how we should be able to recognise an intrinsic value, and what sort of thing or object it is? The facts of science do little to solve this problem. Callicott argues that although intrinsic values are anthropogenic (human created) they need not be anthropocentric: we can value things beyond ourselves. But in this case it does not appear that things can have intrinsic value. For if we decide the value then the things of nature do not have value within themselves.

Holmes Rolston is a value objectivist. He claims that values are in the things of nature that we discover. But then he claims a hierarchy of things that hold more value than other things and we are back to humans deciding what that hierarchy is. Too often when environmental philosophers give intrinsic value to non-humans they dilute the force of the term 'intrinsic value'.

³⁰ Palmer. op. cit. in Light and Rolston, 2003. op. cit.p.17.

But if 'intrinsic value' is defined in its strong sense, which I maintain is the only legitimate sense, in which intrinsic values are to do with intrinsic properties, there can be no hierarchy of those beings that possess intrinsic value. Something has intrinsic value or it has not. If it has intrinsic value then it has equal value to any other thing that has intrinsic value and therefore must be treated in an equal way. Humans have intrinsic value: it gives them moral status. All humans should be treated equally in regards to matters of morality. We cannot give this status to non-humans. There will always be times when humans will need to control non-humans in some way, unless we can educate them to have a moral sense, and this seems unlikely. To avoid confusion it would be better to talk of non-instrumental value when applied to non-humans, although even this may be difficult. Thus we may value dolphins and cats for the sake of biodiversity or as if for themselves, but our attitude would change towards them if their numbers became excessive and harmful to our well-being, as for example feral cats in cities. The way we give value to nature may be instrumental at some level, even if this is aesthetic value, recreational value or spiritual value.

However, there is one way in which we can perceive the things of nature as having intrinsic value. The things of nature do have a good of their own kind, in the way that Rolston describes their creativity. As Rolston also points out, this cannot be a moral value because there is no morality in nature: the terms 'right' and 'wrong' cannot be applied to the behaviour of the things in nature. So the intrinsic value found in nature is not like that of humans where it does give a moral value because humans are moral agents as well as moral patients. Non-humans are moral patients but only within a system where their well-being is a part of human well-being. It is in the contemplative mode that we discover intrinsic value in nature, when we rise

above the circumstances of our human lives and can empathize beyond ourselves. It is a god-like view of nature, for in the eyes of a creative God all the things of nature would have value. For our daily lives we may not be able to hold this viewpoint. Nevertheless the ability to see beyond our own concerns is an important element when we are forming an environmental ethic.

The terms 'anthropocentric' and 'non-anthropocentric' also have several different confusing meanings. Bryan Norton outlines the ambiguity of the term 'anthropocentric':

Writers on both sides of the controversy apply this term to positions which treat humans as the only loci of intrinsic value. Anthropocentrists are therefore taken to believe that every instance of value originates in a contribution to human values and that all elements of nature can, at most, have instrumental value to the satisfaction of human interests. Note that anthropocentrism is defined by reference to the position taken on *loci* of value. Some nonanthropocentrists say that human beings are the *source* of values, but they can designate nonhuman objects as loci of fundamental values.³¹

The ambiguity of the term 'anthropocentrism' arises, Norton says, because philosophers are approaching the problem from either a *felt preference* or a *considered preference*. Norton defines two forms of anthropocentrism:

It is now possible to define two forms of anthropocentrism. A value theory is *strongly anthropocentric* if all value countenanced by it is explained by reference to satisfactions of felt preferences of human individuals. A value theory is *weakly anthropocentric* if all values countenanced by it is explained by reference to satisfaction of some felt preference of a human individual or by reference to its bearing upon the ideals which exist as elements in a world view essential to determination of considered preferences.³²

³¹ Norton, B. 'Environmental Ethics and Weak Anthropocentrism' in Ibid. Light and Rolston. 2003. p. 164.

³² Ibid. p.165.

Norton goes on to explain how these two definitions affect actions on the part of humans towards nature:

Strong anthropocentrism, as here defined, takes unquestioned felt preferences of human individuals as determining value. Consequently, if humans have a strongly consumptive value system, then their 'interests' (which are taken as merely to be their felt preferences) dictate that nature will be used in an exploitative manner...

Weak anthropocentrism, on the other hand, recognizes that felt preferences can be either rational or not (in the sense that they can be judged not consonant with a rational world view). Hence weak anthropocentrism provides a basis for criticism of value systems which are purely exploitative of nature.³³

If Norton's analysis is correct then philosophers who advocate non-anthropocentrism are defining 'anthropocentrism' in terms of 'strong anthropocentrism'. But if we take 'anthropocentrism' in the terms of 'weak anthropocentrism' then the move to non-anthropocentrism may not need to be taken, as within a weak anthropocentrism it is possible to have a value of nature that is other than purely instrumental as long as the values are subject to rational debate and within the boundaries of caring for nature. In fact it does appear that this is the move we need to take, as it does not seem possible to take a non-anthropocentric position, because wherever the attempt is made there is a need to safeguard the interests of humans or otherwise the conclusions are morally repugnant to humans. However, as with intrinsic value, the attempt to find a non-anthropocentric viewpoint of nature may be helpful in forming an environmental ethic.

³³ Ibid. p.165.

It is not easy to escape anthropocentrism without down-grading the moral status of humans and a certain type of anthropocentrism so often appears within non-anthropocentric theories. I shall show now that even within the deep ecology of Arne Naess, the move to escape anthropocentrism does not succeed. Naess gives an explanation of human nature from an ecological perspective. His position is that the objective empirical observations of science should merge with personal values for a normative understanding that would direct actions:

The total view, then, is essentially a normative description of reality, an understanding of the world that merges objective empirical observations (scientific descriptions) and personal values. More specifically, a deep ecological total view would address the human relationship to the non-human natural world and connect this normative understanding directly to action; an individual's total view should be the basis of all decisions regarding his or her life.³⁴

The question is whether we can really apply a normative system across the whole of living things in the way Naess suggests, for we would find it difficult to apply this ecosophy to parasitic creatures. Naess himself realizes the faults in his own philosophy:

Equal rights to unfold potentials as a principle is not a practical norm about equal conduct towards all life forms. It suggests a guideline limiting killing, and more generally, limiting obstruction of the unfolding of potentialities in others.³⁵

³⁴Naess, 1989. *op. cit.* p.xi

³⁵ *Ibid.* p.167.

In other writings of Naess he gives a fuller outline on the limits of his ecosophy.

However he can only do this by introducing a concept of hierarchy of value, which seems to subtract from his concept of equal rights.

Naess' philosophy also includes the concepts of self-identification with nature and self-realization.. Many deep-ecologists follow Naess in their emphasis on this identification of humans with the whole of nature combined with the concept of self-realization. Their claim is that the changes that need to be made that influence human behaviour are not within an ethical level but at a metaphysical level. Freya Matthews puts forward her project as a metaphysical one as well as an ethical one:

My project, then, was to find a metaphysical and ethical expression for the intuition of 'oneness' and interconnectedness ...environmental philosophy revealed the significance of the concept of ecology as both a metaphysical and ethical model, and in ecophilosophy, and particularly in the area of ecophilosophy known as 'Deep Ecology', all the ideas with which I had been working were pulled together, and their normative implications drawn out in some detail.³⁶

In their emphasis on the metaphysical level I would probably agree with them, but their emphasis on ecology to guide their thinking seems to leave them in an ethical confusion. When they involve themselves at the metaphysical level they seem unable to escape a form of anthropocentrism and thus their claims of non-anthropocentrism is not justified. Naess' concept of self-realization, on closer examination, is particularly a form of human self-interest. Richard Sylvan criticized this aspect of human self-interest in deep-ecology. He saw it as a result of the two concepts of humans in relation to nature, that of being a part of nature and also of being apart from nature.

³⁶ Matthews, F. *The Ecological Self*. London: Routledge, 1991. p.3.

Although in support of a non-anthropocentric approach to nature, Katz argues that even deep ecologists fail to escape anthropocentrism when they advocate self-realization:

It seems clear, as the late Richard Sylvan pointed out in his criticism of deep ecology, that we should be wary of the entire notion of self-realization, for it has an anthropocentric history and pedigree. The goal of self-realization 'emerges direct from the humanistic Enlightenment; it is linked to the modern celebration of the individual human, freed from service to higher demands, and also typically from ecological constraints'. Sylvan reminds us that the concept involves the maximization of egos, individual selves, or, at best, the privileged class of humanlike selves. Even the attempt to escape egoism, with the notion of a capital 'S' Self as a holistically extended super-self, succeeds only because we are identifying ourselves with the universe through an anthropocentric notion, a comparison to ourselves as individual human beings.³⁷

We may conclude from these observations that even in an attempt to be non-anthropocentric, as in Naess' deep ecology, humans may find it impossible to rid themselves of anthropocentrism. To seek freedom from an anthropocentric point of view may not be a satisfactory way to go.

Deep ecologists fall victim to the complexity of ideas today moulded equally by the ideas of science as well as of those of Continental thinking. From the point of view of science, the self is often taken to be a product of its genes and the environment, whereas within the Continental framework of thinking the self is free to form its own identification, to develop its own self-realization. Katz is right to point out that it is not possible for deep ecologists to escape anthropocentric thinking.

³⁷ Katz, E. 'Against the Inevitability of Anthropocentrism' in Katz, E. et al. eds. 2000 op. cit. p. 35.

Fox, a deep ecologist, lists the characteristics that were taken to underlie that claim that only humans have intrinsic value beginning with the Christian concept of soul:

...a special relationship with God, the possession of a soul rationality, self-awareness, free will, the capacity for symbolic communication, the capacity to enter into arrangements involving reciprocal duties or obligations, and the capacity to anticipate and symbolically represent the future (and thereby to have knowledge of our own mortality³⁸

The environmental philosophers who claim to be non-anthropocentric believe that intrinsic value should be given to non-humans. I have shown that a non-anthropocentric viewpoint is difficult to attain without some serious problems arising and perhaps a deep ecology is not a real possibility. And the giving of intrinsic value to non-humans may lead us into many problems of how to deal with the environment. However, it is certainly true that humans should and can become more caring about the environment instead of being exploitative. The danger of the claim for a non-anthropocentric position, as is claimed in deep ecology, is that those distinctions between humans and non-humans that Fox listed may be lost in the attempt to identify humans with the whole of nature. It may be those very distinctions that humans need for them to achieve an environmental ethics and to motivate people to have concern about the environment and care about nature. Although we need to acknowledge our dependence on nature, we also need to regard ourselves as quite different in order to prevent ourselves from being exploitative. Non-humans have an exploitative attitude to nature because they cannot reflect on their behaviour and decide otherwise. We

³⁸ Fox, W. *Towards a Transpersonal Ecology: developing new foundations for environmentalism*. Boston: Shambhala, 1990. pp. 151-152.

need to be anthropocentric in Norton's weak sense, so that we can use our reason to discover values in nature. To be able to discover these values we need to search for a way of understanding ourselves in a positive relationship to nature.

A theory that is totally science-informed is Lovelock's Gaia theory. The Gaia theory is science-derivative with some insight but it is a theory that has major faults, particularly when followers of Lovelock have turned it into some form of mysticism. Lovelock claims that Gaia – the earth and the biosphere combined – is a living system:

The most important property of Gaia is the tendency to keep constant conditions for all terrestrial life.³⁹

In this sentence Lovelock uses the term 'property' to keep the sense of a scientific theory. However, at some points of his work he animates Gaia and gives it purposeful action:

For the first of these characteristics, we have assumed that the Gaia world evolves through Darwinian natural selection, its goal being the maintenance of conditions favourable for life in all circumstances, including variations in output from the sun and from the planet's own interior. We have in addition made the assumption that from its origins the human species has been as much a part of Gaia as have all other species and that like them it has acted unconsciously in the process of planetary homeostasis.⁴⁰

In this passage Gaia is given a 'goal', a word not usually used in scientific language. Humans are unconsciously a part of this 'goal'. The use of the word 'goal' implies

³⁹ Lovelock, J. *Gaia: a new look at life on earth*. Oxford: Oxford University Press, 1995.p. 119.

⁴⁰ *Ibid.* p.119.

that Lovelock perceives Gaia as having conscious intentions although he probably did not mean that. Nevertheless it is the 'goals' of Gaia that are important and not any of those of humans. In this interpretation Lovelock firmly fixes humans as a part of nature and nothing but nature. He does wonder if humans have become 'alienated' from Gaia, but the implication is that any separation from being an unconscious part of the whole is not a positive event. Gaia has 'needs' and humans should not be acting against those 'needs'. The earth is a superorganism, according to Lovelock, and as the personified Gaia she 'seeks' for the survival of all because everything is a part of her living being:

The history of the Earth's climate is one of the most compelling arguments in favour of Gaia's existence....It may be that the natural negative feedback process of cloud formation or some other as yet unknown phenomenon would have preserved a regime at least tolerable for life, but if these fail-safe devices were not available, Gaia would have to learn by trial and error the art of controlling its environment, at first within broad bounds and later, as control was refined, by maintaining it near the optimum state of life...If we are prepared to consider Gaia as being able, like most living things, to adapt the environment to its needs, there are many ways in which these early critical climatic problems might have been solved.⁴¹

In this passage Lovelock uses words and phrases that are beyond normal science eg. 'learn by trial and error' and 'controlling'. This is when he takes the theory beyond scientific knowledge into the realms of the mystical, and he does it at the expense of humans who become only 'bit players' to the living being called Gaia. When described scientifically, Gaia could not be a conscious being, as Attfield remarks:

⁴¹ Ibid. p.17 and p.23.

For even, if, as the Gaia hypothesis requires, the biosphere should be regarded as a living organism, it is implausible that it is a conscious one.⁴²

However, as the previous passages reveal, Lovelock does speak of Gaia as a conscious being. In fact, he then delegates humans to be the conscious part of Gaia. The consciousness, which is normally given only to humans, becomes, within the Gaia theory, the consciousness of Gaia that finds expression through humans.

If we are a part of Gaia it becomes interesting to ask: 'To what extent is our collective intelligence also a part of Gaia? Do we as a species constitute a Gaia nervous system and a brain which can consciously anticipate environmental changes?'⁴³

After claiming humans' unconscious behaviour in Gaia's interest, this is a clever way of putting humans' consciousness back into the picture, albeit in the form of some sort of 'brain cells' for Gaia. This gives an extraordinary role for humans in a theory that becomes a mixture of science and mythology. It certainly cannot give any guidelines for human behaviour, for how are we to know when our thoughts are a part of the collective consciousness of Gaia or when they are misbehaving, as they must be when they lead to the destruction of the environment? Or is our destruction of the environment as we know it part of Gaia's plans for her future?

There is a tendency towards mysticism within holistic accounts of nature. Sometimes this mystical side is reached inadvertently as in Lovelock's theory of Gaia. Arne Naess also tends towards the mystical. Information from science becomes

⁴² Attfield, R. *Environmental Philosophy: principles and prospects*. Aldershot: Avebury, 1994. p.123.

⁴³ Lovelock, 1995. op. cit. p.139.

turned into a new religion. Naess' recommendation for humans to identify with all of nature has a religious, mystical tendency:

The ecosophical outlook is developed through an identification so deep that one's own self is no longer adequately delimited by the personal ego or the organism. One experiences oneself to be a genuine part of life..

We are not outside of the rest of nature and therefore cannot do with it as we please without changing ourselves...

My concern here is the human capability of identification, the human joy in the identification with [for example] the salmon on its way to its spawning grounds; and the sorrow felt upon the thoughtless reduction of the access to such important places..

When solidarity and loyalty are solidly anchored in identification, they are not experiences as moral demands; they come of themselves.⁴⁴

Naess dismisses morality as such because, to his mind, the identification that is experienced makes all intellectual moral thought redundant. This theory of identification would make practical living for humans extremely difficult. Other deep ecologists also follow Naess' concept of identification, sometimes leading to excessive expressions. Fox, who as a deep ecologist is sympathetic to these expressions, quotes Robert Aitkin:

Deep ecology requires openness to the black bear, becoming truly intimate with the black bear, so that honey dribbles down your fur as you catch the bus to work.⁴⁵

Although deep ecologists claim that identification frees humans from anthropocentrism, this excessive form of identification seems a form of

⁴⁴ Naess, 1989. op. cit. p. 174

⁴⁵ Fox, 1990. op. cit. p. 239.

anthropomorphism: a human arrogance that assumes that the experience of another animal can be understood in a human way.

Callicott's sociobiological environmental ethics also leads to a strong identification of humans with nature. This similarly leads to a questionable ethical position as I argued earlier. Fox, a deep ecologist, describes the sociobiological basis for identification of humans with non-humans:

Sociobiologists would claim that evolutionary advantage (in terms of the continuation of an organisms own genotype) that is conferred by this strategy provides a biological basis for the psychological experience of identification with other entities. Moreover, it is even possible for sociobiologists to claim that this evolutionary strategy is able to accommodate a positive concern for the wider environment, since a habitable environment is necessary for the continuation of an organism's genetic lineage.⁴⁶

But Fox is critical of this type of identification:

However, in strict sociobiological terms, such a concern must generally run last in terms of any particular organism's immediate personal preferences and priorities for the obvious reason that the idea of inclusive fitness invests primary importance in the survival of the organism's closest kin, the organism's next closest kin and so on, in that order.⁴⁷

In fact Callicott's explanation of morality has deeper problems than Fox outlines here, as I have argued. Any science-informed theory, where a holistic account is attempted, begins to lose the important aspects of ethical theories. Frederick Ferré points out the

⁴⁶ Ibid. p. 264.

⁴⁷ Ibid. p. 265.

dangers of this strong identification of humans to nature and argues for the need to accept the difference of humans from nature:

The very conviction, however, that our species is wicked, deplorable selfish, heedless of our larger moral responsibilities to the earth, makes it impossible to maintain in any simple way that the human species is in every respect just a 'plain member and citizen' of the biotic community. Our species is distinguished from all others by standing under moral obligations *not* to be wicked, selfish and heedless. There is no known species other than the human to which it makes sense to preach self restraint, sacrifice of species advantage or limitation of growth.⁴⁸

I would agree with him. It is with the idea of moral obligations that humans must necessarily conceive of themselves as different in kind rather than degree from non-humans. It is interesting that Naess and others of the deep ecological position believe that morals become irrelevant in a world of identification. For a sociobiologist like Callicott morals become debased to 'correct values' for survival. This makes nonsense of morality which is concerned with values beyond survival. The attraction of the non-human world is that it is amoral, that all that happens in the non-human world is outside of moral evaluation. But humans are importantly not amoral. Humans need to be moral agents, judging their own behaviour and events in nature as being right or wrong. I am thinking here of the lion hunting his prey, or the destruction caused by hurricanes and earthquakes which are acts within nature and can not in themselves be right or wrong but only in the eyes of humans. Humans are separate from nature because of their ability to make moral judgements and it is this very separation that is important for solving problems of the environment. The identification with nature as recommended by science-informed environmental

⁴⁸ Ferré, F. *Being and Value: towards a constructive postmodern metaphysics*. Albany: State University of New York Press, 1996. pp. 299-300.

philosophies would not be helpful. Science-informed theories often seem to undermine the power of human moral discourse.

Environmental philosophers who attempt a non-anthropocentric account of values in nature fail to achieve their goal as well as developing ethical theories that are problematical. Other science-informed environmental philosophers accept an anthropocentric view of nature. They then conclude that the non-human natural world can be seen as having value instrumentally to humans. These values can be aesthetic and spiritual as well as physical. The question then is whether aesthetic and spiritual values are instrumental or not. In a sense they are instrumental because humans are using nature as a means to have an aesthetic or spiritual experience. However, in the contemplative mode these experiences would only occur because nature was seen to have intrinsic value beyond any values humans hold. In the contemplative mode nature would be seen as God's creation having value in God's eyes. This contemplative mode may also arise from a wonder of there being life at all, much in the way Wilson describes his 'spiritual' experiences.

An anthropocentric science-informed view of environmental ethics would maintain that humans should manage resources carefully. The acceptance of an anthropocentric view of values in nature avoids all the downfall of the attempt to find non-anthropocentric values. However, when this type of environmental philosophy is only informed by science it can overlook many aspects of nature that are not immediately seen as instrumentally valuable to humans. It is often concerned mainly with sustainability and thereby turns nature into a mere resource for future generations, a particular type of attitude towards nature that initially environmental philosophers were trying to avoid. This is particularly true when a Darwinian explanation of humans is accepted within a metaphysical materialism. Individual

survival becomes the only motivation and this has disastrous consequences for the environment. To avoid the resource type attitude that can appear in theories of sustainability, a different type of metaphysics may be required.

The many conflicting strands of thought in environmental philosophy have turned some environmental philosophers to pragmatism and moral pluralism. Although these philosophers may have been influenced first of all by science, the way they now approach environmental ethics comes under the sway of postmodernism. I shall be dealing with their work in the next chapter.

It would seem impossible to begin any type of environmental discourse without scientific information. Eric Katz outlines this necessity to take ecological sciences into account for any environmental philosophy:

Rolston..is a clear example as are Callicott and Brennan, among the ecocentric and holistic environmental philosophers who are not considered members of the deep ecology movement. Even Paul Taylor, who bases his theory of environmental ethics on the respect for individual living beings – and thus is not an ecocentric holist – uses basic ecological facts – what he calls ‘the great lessons of the science of ecology’ – on a fundamental principle of his ‘biocentric worldview’ ... all serious environmental philosophy – whether or not they advocate deep ecology – must find a central place for the science of ecology in the development of their thought. To deny the truths of ecology – particularly the facts of the interdependence of systematic relationships of organisms and environment – would immediately discredit the philosophical position as naïve and out of touch with reality. An environmental philosophy that did not recognize ecological science would be unacceptable, irrelevant to the environmental crisis that surrounds us.⁴⁹

Katz states that any philosophical position that was not based on the science of ecology as regards the environment would be ‘out of touch with reality’. This is

⁴⁹Katz. op. cit. in Katz. 2000 op. cit. p. 30.

obviously true, but the point at issue in an environmental ethics is how far should science be relied on when it comes to decisions that involve matters of value. It is not true that science has all the answers. Science-informed environmental ethics have many difficulties in forming a system of morality that would motivate people to care for the environment.

The problem with the ethical theories is the metaphysics on which they build. Much that is written in environmental philosophy is based on a metaphysics that is reductionist materialism. Roy Bhaskar regards this a feature of what he calls modernism:

The final feature that I would like draw attention to is its materialism. This may sound slightly shocking to some because in many quarters materialism is regarded as a well-worked out philosophical concept. I do not think it is a well worked-out philosophical concept but we can go on to that later. But typically the modernists assumed a reductionist materialism. They intended to undervalue the role of ideas, of consciousness, of intentionality in human life. Of course, when you do that you eliminate the difference between the human and the non-human. You take away everything that is truly characteristic of the human world which has to be understood as agentive, that is as involving human agency, presupposing intentionality, and thus consciousness and ideation.⁵⁰

Science-informed environmental philosophy could be included in Bhaskar's definition of modernism. Bhaskar contrasts this acceptance of certain features of modernism with postmodernism. Those who wish to lessen the difference between human and non-human within environmental thinking accept some form of materialism even if not reductive materialism. Science, taken alone as a source of knowledge, encourages this form of thinking. Humans are then included in nature and not just as an organic

⁵⁰ Bhaskar, R. *Reflections on Meta-reality: transcendence, emancipation and everyday life*. New Delhi: Sage Publications, 2002. p.31.

level but even at a mechanical level, where the laws of classic physics become ultimately the dominant mode of all thinking. I will now turn from the perspective of a science-informed environmentalism, to types of environmental philosophy influenced by postmodernism.

Chapter 2

Postmodernism and its Influence on Environmental Philosophy

The development of postmodernism from Continental philosophy has been outlined earlier in this thesis. Within it are strands of different types of philosophical movements: structuralism, post-structuralism and deconstructionism and social constructionism. Also pragmatism and pluralism can be included in this broad category. It is difficult to link all these movements together, but there are some common themes and they result in the one prevalent movement today of postmodernism itself.

Whereas the science-informed environmental philosophers accept scientific realism, postmodern environmental philosophers accept the postmodern scepticism of the concept of 'reality'. Science assumes a common reality that it is possible to know. Only in the realms of quantum mechanics are there questions about that reality. But the postmodernist trend within many areas of philosophy casts doubts on the concept of a common reality, and the word 'reality' is often only used between quotation marks. This scepticism about reality has its roots in both Continental philosophy and the philosophy of Wittgenstein and those who have been influenced by him. Since Wittgenstein many philosophers have affirmed that humans understand their world, and their relation to the world, through language. A postmodernist would agree that it is only through language that we can understand the world. An environmental philosopher within the postmodernist trend says:

After Wittgenstein, reality is a word that increasingly finds itself between quotation marks...
Humans, regardless of place or time, can never stand outside language to offer descriptions to each other of the thing itself

(although they often claim to do so.)

So stated the linguistic turn appears to entail a new paradigm, that is a reflexive comprehension of language that has consequences across all areas of human endeavor, including science, religion and philosophy. Language is more and more seen as ontogenetic, that is as constitutive of the *meaningful* world that humans inhabit, and less seen as representative of an independent reality. Science itself is viewed as a form of discourse through which our society typically constructs its picture of the world, the things in the world, and the relations among the things in the world, including our own ecosocial processes of production and reproduction.¹

In this school of thought, the information gained from science is influenced by social structures as well as by subjective interpretation.

Environmental philosophers who work within this framework understand that any decisions to be made about the environment are at first reliant on the kind of social structures that are existing and the language that is used, and this includes the language used in science and the various descriptions of nature through science. They believe that the concept of nature, as inherited from the past, must be deconstructed and then reconstructed in a new way. New language should be used to encourage a more positive attitude towards the environment. Environmental philosophers within postmodernism are influenced by what Oelschlaeger terms ‘the so-called linguistic turn’. Oeschlaeger claims that science as well has brought about the ‘linguistic turn’:

Paradoxically, it may seem, my approach to postmodern environmental ethics begins with the scientific revolution and its consequences for the theory of language. My rationale is simple: no adequate description of postmodern environmental ethics can be given apart from language. Modern science has had an enormous effect on the way in which language is conceptualised. Indeed, it can be claimed that modern science engendered the so-called linguistic turn.

¹ Oelschlaeger, M. ‘Introduction’ in Oelschlaeger, M. ed. *Postmodern Environmental Ethics*. Albany: State University of New York, 1995. p.5

Thus modern science has also had an enormous effect on postmodern environmental ethics, since it explicitly takes the linguistic turn.²

Oelschlaeger views quantum theory and the theory of indeterminacy as unravelling the modern view of science to a postmodern view where the natural world is understood as processes and that the most basic or atomic level of reality is indeterminate. Postmodernism is therefore influenced by the Copenhagen interpretation of quantum theory with its belief that scientific discoveries are influenced by human consciousness, both at the level of subjective perceptions as well as social movements. Kuhn's interpretation of science whereby scientists work within a particular social practice is therefore accepted without question.

Oelschlaeger criticizes the modernist use of scientific language as placing humans apart from nature. However, I have argued that with the acceptance of evolutionary theory as providing a total explanation of humans, as in evolutionary psychology, humans are considered as a part of nature in every respect.

Postmodernism, with its linguistic turn, leads to an understanding of humans as apart from nature, or, at least, nature is subject to human interpretation. Postmodernist environmental philosophers would disagree with me as they interpret humans as 'embedded' in nature and therefore humans are a part of nature, as I explained earlier.

Oelschlaeger as a constructive postmodernist believes that the solution to environmental problems would be to construct a new language different from the present scientific language that scientists use within the modernist framework. But the question that a postmodern environmental philosopher needs to ask is how can they accept any of the theories of science. Oelschlaeger accepts evolutionary theory:

² Ibid. p. 2.

With the rise of evolutionary thinking and nonlinear thermodynamics, some members of the scientific community came to believe that the cosmos was better described in Heraclitean terms than in Parmenidean terms. A number of philosophers, including C.S. Pierce, Henri Bergson and Alfred North Whitehead, can be read as being among the postmodern avant guard, that is as initiating a sustained critique of the modern worldview and affirming an alternative or postmodern worldview.³

These philosophers accept a theory of science in order to reconstruct a new worldview. If postmodernists understand science as finding information within cultural constructions, it is difficult to accept how they can base their worldviews on any scientific theory. However, a postmodernist would claim that what science holds as 'true' has some existence but lies at the boundary of the subjective and the objective. The difficulty then arises of how we can separate the subjective from the objective. It is this type of thinking that leads postmodern environmental philosophers to use the term 'worldview' rather than seek to find an underlying 'reality' for the solution to environmental problems. The term 'worldview' implies that humans are constructing their own realities, much like primitive people created myths.

With the emphasis on culture and context, the postmodernists understand the concept of nature in a different way from science-informed philosophers. They deny that the concept of nature is formed from the experience of an objective reality. Instead they believe that 'nature', as it is understood now, is the result of historical and cultural influences. What is understood as 'nature', or as 'natural', is interpreted

³ Ibid. p. 3.

as being formed by dominant power groups within society and their influence on thinking:

Since 'progressive culture' has constantly re-thought the limits it has imposed on what is 'natural' or 'proper' to human beings and their society, the use of 'nature', as if it referred to an independent and permanent order of reality embodies a kind of error, as failure to register the history of the legitimating function it has played in human culture. From this 'culturist' perspective then, 'nature' is a kind of self-denying concept through which what is culturally ordained is presented as pre-discursive external determination upon that culture.⁴

This historic and cultural perspective influences many writers in environmental philosophy, sometimes when they are even trying to escape the dilemma caused by postmodernist thought. Postmodern thinking has affected the way people perceive information. It is often seen as socially and politically constructed so that it may be difficult even to reach a popular acceptance that there is an environmental crisis to begin with. Arran Gare, although trying to escape the postmodernist situation, speaks of a 'definitive social construct' of the environmental crisis:

As yet, there is no definitive social construct of the environmental crisis. The mass media presents one image of the global environmental crisis, scientific journals another, while economic journals scarcely recognize any but minor problems which can be solved by the proper functioning of the market. Scientists, economists and business leaders in the USA have dismissed environmentalists as cranks, while many political leaders in Third World countries see the claims of environmentalists as nothing more than as effort to prevent Third World countries sharing the benefits of industrialization. The majority of the world's population have no conception of a global environmental crisis at all.⁵

⁴ Soper, K. *What is Nature?* Oxford: Blackwell, 1995. pp. 33-34.

⁵ Gare, A. *Postmodernism and the Environmental Crisis*. London: Routledge, 1995. p.73.

Gare points out that within a postmodernist perspective one cannot present one solution to this situation. First of all, it is necessary to decide which position is most nearly reflecting a 'true' position, and whether there is an environmental crisis and not just one culturally created for the benefit of any groups within society. This type of thinking makes it almost impossible to even begin an environmental ethic.

A postmodern environmental philosopher tackles the problems of the environment by deconstructing the socio-economic power complexes of the modern world and reconstructing a new 'narrative' to describe humans and their relationship to nature. However, although they see the need of constructing new 'worldviews' or 'narratives', at the same time they are opposed to all 'totalizing narratives'. They reject the total view approach and so are wary of environmentalists who dictate a particular foundational solution to environmental problems. Postmodernists in general are in support of difference and not of universalization. Therefore, postmodern environmental philosophers do not accept the holistic theories of deep ecologists, and reject 'Cartesian certitude' as is found in the thinking of environmental philosophers influenced by sociobiology. They are opposed to globalization and therefore are against the solutions offered by science-informed philosophers in general, being in favour of diversity and ambiguity, as well as plurality. All globalizing claims are suspect:

...poststructuralists are suspicious of all such globalizing claims and are more concerned to deconstruct all claims to a privileged stand-point. To gain any perspective on the environmental crisis, and to evaluate these different responses, all that can be done is to examine and then contrast the various stances on the issue.⁶

⁶ Ibid. p.74.

The opposition to ‘totalizing’ as well as the emphasis on language is exemplified in Jim Cheney’s work. Language, for him, is a way of manipulating the world around us. He is opposed to ‘totalizing language’ because he believes it undermines the individual and his/her experiences:

The effect of totalising language is to assimilate the world to it. Totalizing language provides an abstract understanding that cuts through individual differences when these are irrelevant to its purposes.⁷

Totalizing language is the result of one culture having power over others and superimposing their ‘worldview’ on individuals outside the dominant culture:

The possibility of totalising, colonizing discourse arises from the fact that concepts and theories can be abstracted from their paradigm settings and applied elsewhere. Although these abstractions are fully intelligible only within the paradigm setting which gave birth to them, such abstractions achieve a life of their own; they can be articulated in accordance with canons of coherence and made into apparently self-contained wholes ready for export and application to a variety of situations. The situations to which a theory is deemed applicable, however, are specified within the theory, by the theory as articulated in abstraction from its paradigm setting.⁸

The result is that the totalising language constructs the view of nature without taking into account those individuals who experience nature in different ways. Cheney follows the postmodernist’s emphasis on contextual language. Contextual language is language used in specific places by the people there. Cheney incorporates within his

⁷ Cheney, J. ‘Postmodern Environmental Ethics: ethics as a bioregional narrative’ in Oelschlaeger, 1995. op. cit. p. 26.

⁸ Ibid. pp. 25-26.

thinking some of Heidegger's existentialism. The world is formed through human beings who are within the world. In rejecting totalising language, Cheney believes that contextual language should be used in dealing with environmental problems rather than totalising language:

Within the geography of human landscape the contextual voice can emerge in clarity and health through a 'constant recontextualizing' which prevents the oppressive and distorting overlays of cultural institutions (representing a return of the repressed) from gathering false, distorting, and unhealthy identities out of the positive desire for unity, for Oneness'.⁹

Any total view of the world, using totalising language, assimilates the world to it, and so contextual language, that is, language used about specific places and peoples, needs to be used in environmental matters. This approach also influences postmodern ethical theories in general. They criticize modern ethical theory as linguistically naïve, maintaining that ethics in general and as applied to environmental thinking is situated in language, and that due notice should be taken of linguistic context and the socially dominant form of narrative. Change can be brought about by discourse:

We in the postmodernist West are only beginning to see such possibilities in language. Postmodernism makes possible for us the conception of language conveying an understanding of self, world, and community which is consciously tuned to, and shaped by, considerations of the health and well-being of individual, community, and land and our ethical responsibilities to each. This postmodernist possibility is an actuality in the world of tribal myth and ritual.¹⁰

⁹ Ibid. p.33.

¹⁰ Ibid. p.28.

But the problem with this restriction to the local means that there can be no overall view of what needs to be done for the environment as a whole. Many have recognized the fact that the problems of the environment are of a global nature and this is why Arran Gare advises that a 'grand narrative' for the environment should be constructed. This would be unacceptable to most postmodernists.

Postmodern environmental philosophers lay the blame on the values of the Renaissance, Humanism and the Enlightenment for the problems of the environment. Authority figures and intellectuals of these times have 'silenced' nature. They use Foucault's analysis of social power as the basis for their arguments:

To regard nature as alive and articulate has consequences in the realm of social practices. It conditions what passes for knowledge about nature and how institutions put that knowledge to use. Michel Foucault has amply demonstrated that social power operates through a regime of privileged speakers, having historical embodiments as priests and kings, authors, intellectuals, and celebrities. The words of these speakers are taken seriously (as opposed to the discourse of 'meaningless' and often silenced speakers such as women, minorities, children, prisoners, and the insane). For human societies of all kinds, moral consideration seems only to fall within a circle of speakers in communication with one another. We can, thus, safely agree with Hans Peter Duerr when he says that 'people do not exploit a nature that speaks to them'. Regrettably, our culture has gone a long way to demonstrate that the converse of this statement is also true.¹¹

They attack the humanist for marginalizing nature and causing it to be 'silent', in Manes' expression. For a postmodern environmental philosopher the solutions of science-informed environmental philosophers have not gone beyond the concerns of the rational human subject and therefore are not successful:

¹¹ Manes, C. 'Nature and Silence' in *Ibid.* pp. 43-44.

By neglecting the origin of this silence in the breakdown of animism, the humanist critics of deep ecology reiterate a discourse that by its very logocentrism marginalizes nature, mutes it, pushes it into a hazy backdrop against which the rational human subject struts upon the epistemological stage. It has become almost a platitude in modern philosophy since Kant that reason (as an institutional motif, not a cognitive faculty) is intimately related to the excesses of political power and self-interest. As Foucault puts it, 'we should not need to wait for bureaucracy or concentration camps to recognize the existence of such relations'. The easy alliance of power and reason that sustains those institutions involved in environmental destruction also sustains their discourses.¹²

The conclusion of Manes is to take away from humans the concept that they take centre stage within the natural world. The concept of 'Man' in the Humanist sense should be removed and humans should understand themselves as 'homo sapiens', one species among many. However, by doing so they are removing those very characteristics of humans that have led them, first of all to be aware of the damage to the environment, and secondly to contemplate the role of humans towards nature. We need both rationality and power in order to control nature at a suitable level for the benefit of both ourselves and all other species.

Turning to the issues of how humans are to value nature, postmodern environmental philosophers are opposed to moral monism. They do not accept that the same moral principles can apply to all things in nature. Thus they advocate moral pluralism:

The alternative conception toward which I have been inviting discussion, what I call moral pluralism, takes exception to monism point by point. It refuses to presume that all ethical activities (evaluating acts, actors, social institution, rules, states of affairs, etc.) are in all contexts (in normal interpersonal relations, across large spaces and many generations, between species)

¹² Ibid. p. 44.

determined by the same features (intelligence, sentience, capacity for emotions, life) or even that they are subject, in each case, to the same overarching principles (utilitarianism, Kantianism, nonmaleficence, etc.). Pluralism invites us to conceive the intellectual activities of which morals consist as being partitioned into several distinct frameworks, each governed by its own appropriate principles.¹³

In arguing for moral pluralism, the postmodernist environmental philosopher is criticizing much of the philosophy of those who work within the scientific framework. Many of those philosophers have been attempting to find one principle to guide our actions towards nature, such as the land ethic of Leopold or the identification of deep ecology. Moral pluralism appears in general ethics and is a reaction to the confusion of many conflicting schools of thought within ethics. However, moral pluralism has the problem of when to use which set of principles. As in much postmodernist thought it leads towards more fracturing of the social framework. Environmental ethics, as in any other area of ethics, demands an all-embracing principle to guide all humans across all cultures.

Moral pluralism also appears in the philosophy of pragmatists. Rorty, a neo-pragmatist, takes on a form of scepticism as regards philosophy in general. He accepts pluralism:

In this spirit of chastened pluralism, we may conclude this section with a reflection on Richard Rorty's dictum that our current age of troubled transition has finally come to the 'end of philosophy'. The effort to reconstruct philosophy is futile, he argues, since the correspondence of thought with reality is untestable and coherence unattainable. The wise neopragmatist attitude would be to accept the incommensurability of problems, affirm pluralism and live without the 'rage to order' the universe in all-embracing perspectives.¹⁴

¹³ Stone, C. D. 'Moral Pluralism' in *Ibid.* p. 250.

The pragmatist environmental philosopher accepts 'the incommensurability of problems' and denies the possibility of one moral principle in environmental ethics, and embraces pluralism. Their concern is to move from theoretical debates and be able to engage in the practical resolution of environmental problems. They feel that the endless theoretical debates within environmental philosophy slow down the process of change in the practical world. They advocate the need to place practical issues of policy consensus at the forefront of environmental philosophy.

Andrew Light and Eric Katz describe two types of pluralism for environmental pragmatists: theoretical pluralism and metatheoretical pluralism:

Theoretical pluralism is the acknowledgement of distinct incommensurable bases for direct moral consideration. One example of this theoretical distinction would be a position which holds a concern for the moral consideration of different individual animals, based on both Peter Singer's criteria of sentience and Paul Taylor's criterion of respect for all teleological centres of life. Metatheoretical pluralism involves an openness to the plausibility of divergent ethical theories working together in a moral enterprise—as both ecofeminist and ecological holists can work towards the preservation of the same natural habitats, based on different foundational claims.¹⁵

While it is laudable to encourage all who have a concern for the environment to be able to work together, it is still important to discover some basic foundation on which all environmental decisions could be founded. Although a number of different positions can be held towards the environment, at the practical level there will

¹⁴ Ferre, F. *Being and Value: toward a constructive postmodern metaphysics*. Albany: State University of New York Press, 1996. p. 283.

¹⁵ Light, A. and Katz, E. *Environmental Pragmatism*. London: Routledge, 1996. p.4.

inevitably occur at some point a clash of values. The theoretical work needs to continue.

Anthony Weston argues that environmental ethics is at an 'originary' stage, a time when there is an evolution in the area of values for the environment alongside of new social practice. At this point in time there should be an open-ended inquiry and a time for experimentation in the expression and language of environmental thought:

A pluralistic project is far more tolerant and inclusive. Indeed it is surely an advantage of the sort of umbrella conception of environmental ethics I am supporting here that nearly all the current approaches may find a place in it.¹⁶

This is also laudable, as long as the 'umbrella conception of environmental ethics' is not accepted indefinitely, but only until such a time as a complete view is better understood. There is a feeling of world weariness in these accounts as though there could not be a way of humans able to relate to nature in one way, and indeed pragmatists would not accept that there was one particular vision of nature that was correct.

Environmental pragmatists are influenced by American pragmatism. Kelly Parker outlines the major characteristics of pragmatists' theories about the world:

There is an irreducible *pluralism* in the world we encounter. There is the idea (supported by contemporary physics) that *indeterminacy* and *chance* are real features of the world. *Change* *development* and *novelty* are everywhere the rule... Pragmatism, then, sees the *reality* as process and development, and sees *beings* as relationally defined centers of meaning rather than as singular entities that simply stand alongside one another in the world. It emphasizes not substantial beings, but interrelations,

¹⁶ Ibid. p. 156.

connectedness, transactions and entanglements as constitutive of reality.¹⁷

There are some strongly postmodernist elements in Kelly's thinking, particularly the acceptance of indeterminacy and chance from the Copenhagen interpretation of quantum physics, and connectedness and entanglements. Values are a part of ever-changing processes and all values emerge in experience. What is good is understood as the interaction of the experiencing organism with its environment. Therefore there can be no laws, because every situation is different and a pragmatist accepts that reactions are different in each situation. Only past experiences give us direction and this is uncertain:

After many trips through the swamp, we arrive at the means that serve best.¹⁸

It is a rather ad hoc way of finding value, and without too much reflection.

For an environmental pragmatist, the environment is a part of us and we are a part of the environment. A pragmatist asks what aspects of an environment give us valuable experience. Also there is the question of what relationship should we have to the environment, because all things are related. Pragmatists support moral pluralism in environmental ethics because they emphasize the differences in moral situations. There are many kinds of entities and possible relations among them, so that there are many varieties of values and hence many different conflicts to be resolved. There is irreducible pluralism in the world so that pragmatists accept

¹⁷ Parker, K. 'Pragmatism and Environmental Thought' in *Ibid.* p. 24.

¹⁸ *Ibid.* p. 26.

anthropocentrism, biocentrism and ecocentrism within environmental ethics. They accept that each theory held on its own is problematical, so they advise that all should be accepted and apply which ever relevant one to a situation when necessary: sometimes the individual is important; sometimes the whole biosystem.

The general effect of the theories of pragmatism in environmental ethics is that not much has been worked out at all. There is an impression that the thinkers are overwhelmed by the particulars of the world and are not able to perceive universal patterns. There is not an underlying metaphysics that can link all the aspects they accept.

Roy Bhaskar is critical of postmodernism and his criticism could apply to environmental philosophy influenced by postmodernism. He describes the main points of postmodernism:

First of all postmodernism highlights what I will call epistemic relativity. That is, there is an emphasis on difference, relativity and pluralism... for postmodernists an understanding of the truth of epistemic relativity has always seemed to rule out ontological realism, commitment to a real world and judgemental rationality, commitment to the rationality of choice.¹⁹

Bhaskar outlines the characteristics of postmodernism in the following terms: relativism, linguisticism, ontological irrealism, judgemental irrationalism, no grounds for belief, life is an assemblage, there is no total view, failure to universalise, incapacity to maintain a concept of human emancipation, heightened sense of reflexivity (that is the understanding of the self in relation to its contexts) and therefore emphasis on contextuality, politics of identity and difference and then

¹⁹ Bhaskar, R. *Reflections on Meta-reality: transcendence, emancipation and everyday life*. London: Sage Publications Ltd., 2002. p. 34.

support of minority groups, and acceptance of emotional experience over intellectualising. If Bhaskar is correct in his analysis of postmodernism, and I believe he is, then it is not a philosophy that can offer any positive solution to the environmental crisis that exists. In dealing with environmental problems we need to have beliefs that are judged to be true; we need a total view of the problems as well as of our relationship to nature; we need to be able to universalize and to see past our own perspectives; and we need to release ourselves from our own contextual situation. We also need to see beyond our differences and to be able to intellectualise and not be lost in the confusion of emotions and subjective perspectives.

Postmodern environmental philosophers deny too many of the characteristics of humans that are needed in order to make a solution to the environmental crisis a possibility. There are also contradictions in their position. If there is no 'nature' apart from the constructions of social power groups, then there is little basis for any environmentalist to give reasons to anyone as to what behaviour or viewpoint to take as regards nature. If they do suggest any criteria for a particular attitude to nature then by virtue of their own theories they are 'fixing' or 'essentializing' through their very choice of language according to their philosophical position. While decrying 'theory' they put forward their own theory; while criticizing 'narratives' they create their own narratives. They claim that science is knowledge that is the result of social manipulation, but environmental philosophers influenced by postmodernism still accept knowledge from the biological and ecological sciences for decisions about solving environmental problems. Postmodernist-informed environmental philosophers cannot find a value in nature for itself, nor can they conceive of nature that exists over and above human 'embeddedness' within it. They can only construct different 'myths' or 'narratives' or 'ideologies' from the ones they perceive as

detrimental to the environment now, and they do not have an argument for anyone to accept any one of these myths as being the 'right' one.

Chapter 3

Ethics

When faced with environmental problems philosophers have sought to find a solution by positing value, other than instrumental value, in nature and the things of nature. The problem, they say, has arisen because humans have looked at nature from a human point of view, using it for their own advantage. Some philosophers claim that the value must be a moral value or, at least, a value that the things of nature have in themselves beyond merely human concern. Science-informed philosophers seek the value for nature through the sciences, ecology and evolutionary theory. Postmodern environmental philosophers seek to change the language we use in regard to nature claiming that the problems have arisen from certain power groups. Both positions in philosophy claim value for nature but it is uncertain what sort of value this should be. As I showed in the last chapter, both positions have serious problems with their claims for value in nature.

If we have a duty to care for nature it seems that the value we should give nature is a moral one. Holmes Rolston thinks that this is not the case, but that nature has objective values of some kind. The problem is, that if we should be duty-bound to act well towards nature beyond our own concerns we seem to be within the realms of morality; otherwise there would be no obligation. Nature can have instrumental value for us and this is no problem to understand. But instrumental value alone has led to the misuse of nature and the present environmental problems. Science-informed philosophers have put forward the concept of intrinsic value: nature has value in itself and for itself. They have attempted to reach a non-anthropocentric position towards nature. I showed in Chapter 1 of this part that a

non-anthropocentric position is very difficult to achieve, if at all, although the concept of it may help towards being more sympathetic to the things of nature. The concept of intrinsic value I also showed to have many problems, as the value that the non-human world had cannot be as strong as the value we give to humans. But, again, the concept of intrinsic value within nature may encourage humans to care more for nature.

However, there are further problems with the non-anthropocentric approach to nature. When philosophers talk of the intrinsic value of nature they think of the wilderness of America or the equatorial forests of South America or the gentle wooded hills of England. In contexts of this kind it may be easy to think of the things of nature as having intrinsic value: they flourish and have a good of their kind. However, it is possible that the world could be a gigantic manure heap on which grubs and maggots of various kinds, worms, ants and cockroaches live and flourish successfully. It forms an environment of ecological balance and all the creatures have a good of their kind. According to holistic environmental philosophers all these creatures have intrinsic value and therefore we should make no judgement about such a world. But we would. Why would we? Because it is not a world in which humans would be happy. So when we speak of a nature that has value we inevitably speak of a world which is favourable to humans: it has value to us, whether it is trees that soak up carbon dioxide, or wooded hills where we can walk, or fertile plains where we can live. Deserts are full of flourishing life, reptiles and small mammals, but we lament the erosion of areas that have been overused and are turning to desert. Why? The reason is that they are not areas of flourishing in our eyes, except, perhaps, for specialists in the natural sciences.

To give intrinsic value to the things of nature does not answer the problem of our relationship to nature because ultimately we value only those things of nature that are directly or indirectly of benefit to us, at least those things that do not harm us: this seems like instrumental value again. However, to conclude that nature can only have instrumental value to us leads us back to where we have come from and the results of humans through the centuries of only valuing nature in an instrumental way and thereby believing it not to be wrong to destroy it. This is a particular worry when we consider the higher mammals because of their levels of conscious awareness and their sentience and our ability to identify with them to a certain extent. They cannot be included in the moral circle in the same way as humans because they are not moral agents, but we do have moral obligations to them. To regard nature as having only instrumental value cannot be the right conclusion. So how are we to value nature? Richard Routley's example of the 'last man' brings out this moral obligation:

The last man (or person) surviving the collapse of the world system lays about him, eliminating, so far as he can, every living thing, animal or plant (but painlessly if you like, as at the best abattoirs). What he does is quite permissible according to basic chauvinism, but on environmental grounds is wrong. Moreover one does not have to be committed to esoteric values to regard the last Mr. Last Man as behaving badly and destroying things of value (the reason being perhaps that radical thinking and values have shifted in an environmental direction in advance of corresponding shifts in the foundation of fundamental evaluative principles.¹

'The last man' example illustrates that many of us would consider the man wrong, and morally wrong, to destroy the environment for no reason at all. Therefore we

¹ Routley, R. and Routley, V. 'Human Chauvinism and Environmental Ethics', in Mannison, et al. eds. *Environmental Philosophy*. Department of Philosophy, Research School of Social Sciences, Australian National University, 1980. pp.129-131.

have a moral obligation towards nature not to destroy it. But where does this moral obligation come from? Environmental philosophy leads to environmental ethics. Environmental philosophers turn to the ethical theories of today.

Ethics has always been the most difficult area of philosophy. There have always been questions about what morality is and what ethical theories we should accept:

In radically different ways, philosophers from Socrates to Wittgenstein have found in ethics a source of deep philosophical perplexity. Virtues, principles and consequences for human well-being have all been proposed as the most important focus of ethical understanding. Intertwined with these are concerns about rationality, impartiality and moral freedom.²

Environmental ethics is involved in these perplexities. Ethics in general is concerned with reasons for actions and so environmental ethics must take part in these bigger debates:

Ethics in its widest sense stands to questions about what there is reason to do, as logic in its wider sense stands to questions about what there is reason to believe. It is the normative theory of conduct, as logic is the normative theory of belief. Through its concern with action ethics also becomes concerned with character, as it bears on action and reason for action...And through that concern with character, it becomes concerned with questions about what there is reason to feel, and how reasons to feel connect with reasons to act.³

Many ethical theories of the past were concerned only with relations between humans. Alasdair MacIntyre describes Aristotle's ethics:

² Skorupski, J. Ethics in Bunnin, N. and Tsui-James, E. P. eds. *The Blackwell Companion to Philosophy*. Oxford: Blackwell Publishers Ltd., 1996. p.198.

³ Ibid. pp. 199-200.

‘Every craft and every inquiry, and similarly every action and project, seems to aim at some good; hence the good has been well defined as that which everything aims’. The book which Aristotle opens with this trenchant sentence is traditionally known as the *Nicomachean Ethics*...but its subject matter is declared to be ‘politics’. And the work which is called the *Politics* is presented as the sequel to the *Ethics*. Both are concerned with the practical science of human happiness in which we study what happiness is, what activities it consists in, and how to become happy.⁴

Kant’s moral philosophy is concerned only indirectly with non-humans: how humans act towards nonhumans has importance only within the sphere of human morality. Within religious spheres one could argue that there has appeared a greater value for nature than there has been within philosophical traditions but this viewpoint is controversial. An example from the psalms of the Old Testament can show this respect for nature beyond a human-centred point of view:

The trees of the Lord are full of sap;
The cedars of Lebanon, which he hath planted;
Where the birds make their nests:
As for the stork, the fir trees are her house.
The high hills are a refuge for the wild goats;
And the rocks for the conies.⁵

Within many religions there is an appreciation of nature that is definitely not anthropocentric. However, within a secular world, ethical theories have difficulty in reaching a non-anthropocentric appreciation of nature and many have found the

⁴ MacIntyre, A. *A Short History of Ethics: a history of moral philosophy from the Homeric Age to the twentieth century*. London: Routledge & Kegan Paul, 1967. p.57.

⁵ Psalm 104. vs. 16-18. in *The Bible: authorized version*. Editor, J. Stirling. London: the British & Foreign Bible Society. 1954.

Christian religion at fault. As usual religious writings are often open to many interpretations.

The collapse of church authority over matters of morality has meant that there has been a yawning gap where once there was a coherent system of moral rules. Philosophers and the Law have tried to fill that gap but in many ways there is a moral crisis that becomes more perplexing within the framework of postmodernism that encourages difference and moral pluralism. Which of the many ethical theories should be used when discussing the value of nature? Alastair MacIntyre in his book *After Virtue* writes about his own perception of a moral crisis when looking at moral philosophy from an historical and anthropological view:

But at the same time as I was affirming the variety and heterogeneity of moral beliefs, practices and concepts, it became clear that I was committing myself to evaluations of different particular beliefs, practices and concepts. I gave, or tried to give, for example, accounts of the rise and decline of different moralities; and it was clear to others as it ought to have been to me that my historical and sociological accounts were, and could not but be, informed by a distinctive evaluative standpoint. More particularly I seemed to be asserting that the nature of moral community and moral judgment in distinctively modern societies was such that it was no longer possible to appeal to moral criteria in a way that had been possible in other times and places-*and* that this was a moral calamity! But to *what* could I be appealing, if my own analysis was correct?⁶

MacIntyre in this passage eloquently reveals the postmodern dilemma of moral debate today. All our actions and thoughts are governed by some value system, but they seem to be the remains of many different and conflicting ethical theories. For some philosophers the answer is to accept some kind of moral pluralism. The

⁶ MacIntyre, A. *After Virtue: a study in moral theory*. 2nd edition. London: Duckworth, 1985. p.ix.

weakness of moral pluralism is its implied relativism. Ethical theories are understood to have validity contextually, as different situations require different ethical theories. This implies that there is no ethical theory that can deal with the total situation. However, local solutions would not be enough when environmental problems are global problems.

MacIntyre is right to point out that today we have a confusion of ethical theories that give us a multitude of reasons for ways of valuing and many of them contradict one another. MacIntyre's book *After Virtue* gives a good historical account of how the present moral confusion has arisen, although I do not agree with his conclusion. The philosophy of Nietzsche openly questioned the objectivity of morality. Continental philosophers accepted Nietzsche's analysis of morality. The individual subject, as Kierkegaard had revealed, was the important centre for experiencing and obtaining knowledge. Sartre also emphasized the need for the individual to acknowledge his/her own freedom and to escape *bad faith* by being able to decide on moral values rather than accept the current moral code without question. But the emphasis on the individual and the subjective experience combined with the Nietzschean rejection of the possibility of objective knowledge resulted in a morality that was not based on any firm foundation. Individuals should be free to create their own moral systems from their own subjective experiences and these moral systems need not be universalising. Continental philosophy therefore promoted subjectivism and relativism within ethical theories. It also undermined the role of reason within ethical theories and supported an emotional response to morality.

At the same time, the logical positivists, under the influence of scientific methodology, had separated fact from value. The logical-positivists viewed

language as only being meaningful when it could be verifiable by experience. A statement is true or false depending on whether the facts could be checked. If there is no possible evidence for a statement being true or false, then it is meaningless. Wittgenstein's *Tractatus* influenced the logical positivists in what they regarded as meaningful statements. A. J. Ayer later claimed in *Language, Truth and Logic* that there were only two kinds of propositions: truth known by definition and truth known by reference to sense experience. This claim resulted in the conclusion that moral statements must be meaningless. This opened the door to an emotivist theory of morality. Therefore both within Continental philosophy and within British philosophy emotivism was a serious element in ethical theories. MacIntyre certainly argues for the case that today the existentialism of the Continent has been extremely influential and that the rational-based ethical theories have been discredited because of the postmodernist attack on the concept of reason as being nothing more than the result of a particular power structure of eighteenth century imperialism. He argues that to have some amount of credence analytical moral philosophy has resorted to ethical theories based on philosophy of use rather than a philosophy of meaning. For some thinkers, ethics was seen as a covert way of expressing one's own preferences or giving commands. MacIntyre shows the link between Continental existentialist thought and an emotivist-based approach to ethical theory in analytical philosophy and the move to a theory of use:

I therefore take it that we have no good reason to believe that analytical philosophy can provide any convincing escape from an emotivism the substance of which it so often in fact concedes, once that emotivism is understood as a theory of use rather than meaning. But it is not only analytical moral philosophy of which this is true. It also holds of certain at first sight very different moral philosophies in Germany and France. Nietzsche and Sartre deploy philosophical vocabularies which are in large part alien

to the English-speaking philosophical world and in style and rhetoric as well as in vocabulary each different from the other as much as from analytical philosophy. Nonetheless when Nietzsche sought to indict the making of would-be objective judgments as the mask worn by the will-to-power of those too weak and slavish to assert themselves with archaic and aristocratic grandeur, and when Sartre tried to exhibit the bourgeois rationalist morality of the Third Republic as an exercise in bad faith by those who cannot tolerate the recognition of their own choices as the sole source of moral judgment, both conceded the substance of that for which emotivism contended.⁷

MacIntyre was writing in the 1980's. In recent years ethicists has returned to cognitive-based ethical theories, such as consequentialism, Kant's deontological ethics and virtue ethics. To some extent applied ethics, concerned as it is with matters of vital importance in today's world, has given impetus to this change. In fact the writings of environmental philosophers may have had some influence on Philippa Foot's more recent ethical theory when she attempts to close the fact/value distinction by naturalizing ethics. She wants to link the evaluation of plants and animals to the moral evaluation of humans:

My belief is that for all the differences that there are, as we shall see, between the evaluation of plants and animals and their parts and characteristics on the one hand, and the moral evaluation of humans on the other, we shall find that these evaluations share a basic logical structure and status. I want to suggest that moral defect is a form of natural defect not as different as is generally supposed from defect in sub-rational living things.⁸

⁷ Ibid. pp.21-22.

⁸ Foot, P. *Natural Goodness*. Oxford: Clarendon Press, 2001. p.27.

She appeals to 'natural goodness' in nature that she finds in the intrinsic value within nature and extends the concept to human morality. I do not wish to examine her theory at this stage but simply to point out one element in her argument. She speaks of 'function' and 'purpose' when evaluating living things:

The question is, therefore, whether characteristics of humans can be evaluated in relation to the part they play in human life, according to the schema of natural normativity that we found in the case of plants and animals. In favour of this there is the fact that a certain network of interrelated concepts such as *function* and *purpose* is found where there is evaluation of all kinds of living things, including human beings.⁹

She speaks of a special form of explanation to which the ideas of function and purpose are related, either for animals and plants or humans, and these are teleological explanations.

However, in spite of the return to cognitive ethical theories, the postmodern influence is still strong, particularly amongst the populace as emotivism, subjectivism and relativism as well as moral pluralism sit well within a liberal society that accepts unbridled capitalism. Pragmatism also is suited to a liberal society.

Cognitive ethical theories have some difficulty within the postmodern situation because of the suspicion cast on the role of reason and any type of totalizing system of thought. Also there are conflicts within the numerous cognitive ethical theories and thus there are many questions about moral decisions and which ethical theory is most applicable for today.

⁹ Ibid. p. 40.

At the same time ethics has been under attack from sociobiologists who claim that morality needs to be naturalized. They argue that morality is a result of natural selection and therefore comes under the domain of biologists and not philosophers:

What made the hypothalamus and the limbic system? They evolved by natural selection. That simple biological statement must be pursued to explain ethics and ethical philosophers, if not epistemology and epistemologists, at all depths.¹⁰

Wilson claims that ethics can be 'biologized':

The time has come for ethics to be removed temporarily from the hands of philosophers and biologized.¹¹

The affect of this 'biologizing' has been the reducing of morality to the extent that it is at the point of elimination. It is explained as simply a way by which human genetic material is kept intact:

Human behaviour...is the circuitous technique by which human genetic material has been and will be kept intact. Morality has no other demonstrable ultimate function.¹²

Michael Ruse also gives a reductionist account of morality: it is a means by which humans are able to survive and humans, by their belief in morality, are subject to an illusion:

¹⁰ Wilson, E. O. *Sociobiology: the new synthesis*. Cambridge: Harvard University Press, 1975. p.3.

¹¹ *Ibid.* p. 562.

¹² Wilson, E. O. *On Human Nature*. Cambridge: Harvard University Press, 1978. p. 167.

Morality, or more strictly, our belief in morality, is merely an adaptation put into place to further our reproductive ends. Hence the basis of ethics does not lie in God's will... or any other point of the framework of the Universe. In an important sense, ethics... is an illusion fobbed off on us by our genes to get us to cooperate.¹³

This emphasis on the evolution of morality by natural selection leads to Dawkins' conclusion, misled by his application of the moral term 'selfish' to a biological entity, that all human behaviour, including what we term 'altruistic', is ultimately always selfish:

The logic..is this: Humans and baboons have evolved by natural selection...Anything that has evolved by natural selection should be selfish. Therefore we must expect that when we go and look at behaviour of baboons, humans, and all other living creatures, we will find it to be selfish.¹⁴

Sociobiologists and their ilk go on from these types of statements to discuss altruism and co-operation among humans as a mixture of opportunism and exploitation. All behaviour of humans is ultimately selfish and when claims are made that some behaviour is altruistic humans are being self-deceived by their clever genes. This account makes a mockery of morality.

Sociobiologists and Ultra-Darwinists claim that science is the source of all knowledge and that therefore as biologists they have the expertise to 'know' about human behaviour. But this claim should be questioned. Evolutionary theory as the only explanation of human behaviour is very simplistic. It gives a reductionist

¹³ Ruse, M. and Wilson, E.O. 'The Evolution of Ethics' in *New Scientist*. 108. no. 1478. pp. 50-52.

¹⁴ Dawkins, R. *The Selfish Gene*. New edition. New York: Oxford University Press, 1989. p. 4.

account of morality and takes strength from a monistic materialism: everything, including human behaviour, can be explained by reduction to simple physical parts.

A further claim of evolutionary accounts of morality is that human behaviour can be explained by reference to the behaviour of non-humans. This claim also needs to be questioned. The evolutionary account of behaviour is adequate for non-humans, but morality is a phenomenon that only appears in humans: it is nowhere else in nature. It is questionable whether morality can be explained only in terms of biology. Many philosophers have argued against the reductionist explanation of morality, including Holmes Rolston, although he bases much of his environmental ethics on evolutionary theory. Rolston argues that there is no morality in nature and on this point I would agree with him. But within humans at a certain level of consciousness and a certain level of cultural complexity, the concept of right and wrong appears. It is therefore, at the very least, a cultural phenomenon and not a biological one (although it could not appear without the basic evolution of human beings):

To interpret events in terms of biology, when these are events in culture is to fail to see that there is an emergent chapter in the story. It is an archaic interpretation. To interpret events in biology in terms drawn from cultural phenomena, which emerge novel to biology, is anachronism, a misplaced interpretation historically. It is a mistake both to see ourselves in fur and feathers and to see ourselves as nothing but fur and feathers. Try as we may to redefine the term borrowed from one domain for use in the other, we fail this way when we label behaviour of bacteria, bees and baboons as selfish and then find that human altruistic behaviour is the same.¹⁵

¹⁵ Rolston, H. *Genes, Genesis and God: values and their origins in natural and human history*. The Gifford Lectures, University of Edinburgh, 1997. Cambridge: Cambridge University Press, 1999. pp. 279-280.

But the difference between the explanation of ethics from a sociobiologist viewpoint and that of Rolston is ultimately the difference between their underlying beliefs. The sociobiologists interpret humans as a part of nature in every respect and their explanations are within a reductionist materialism. But the explanation of morality as being essentially a human property is a move towards understanding humans as apart from nature in some important sense. Culture cannot be reduced to biological terms. Rolston explains morality as an emergent property that is different in kind from the building blocks in which it has its foundation. In this way the formulation of ethics is based on belief systems.

Any ethical theory is based on beliefs and values and these beliefs and values exist prior to any ethical theory. Indeed if there were no beliefs and values, the whole idea of morality would become meaningless, because there would be no basis for calling any action good or bad. It works both ways: ethics is informed by fundamental beliefs and values, but fundamental beliefs and values may not be recognized until a moral dilemma occurs. This is certainly true of problems in the environment. Only when the problems arose was it necessary to question our beliefs and values about nature. That is why so often environmental philosophers become concerned with what are metaphysical issues.

Metaphysics is a notoriously difficult area to approach. Yet values cannot be understood without a metaphysical system and a metaphysical system cannot be begun without values. Ferre points out the circularity of dealing with any metaphysical problem:

If, as argued in chapter 1, metaphysical thinking is aimed at constructing a comprehensive, adequate and coherent theory of reality, should we not say instead this is a book about the (proper) understanding of value in a (good) theory of reality?

Note the value terms. Is this bad? Is it a sign of circular reasoning? If our first formulation seems to beg the question against the intrinsic value ladenness of reality, does the second beg the question in the opposite way, toward the inescapable inclusion of values in any satisfactory theory of value?¹⁶

A metaphysical system is required for any ethical theory, but values already are needed for forming a metaphysical system. The difficulty of metaphysics lies in its subject matter. As Ferré says:

...metaphysics is nothing more (nor less) than the theory of reality in general.¹⁷

And so:

...it aims at complete comprehensiveness. This makes for trouble.¹⁸

The area of knowledge which metaphysics is meant to cover is immense and often the subject has been dismissed as nonsensical or, at least, an area of knowledge that is best left alone. There is an implied arrogance in the task of metaphysics:

There are times when we philosophers are morally no less than epistemologically obliged to acknowledge the arrogance - the sheer presumption - of trying to pour the ocean of reality into the thimbles of our minds. This is one of those times. If there is a justifiable ground for rejecting the whole enterprise of metaphysical theorizing, here it is. Many have done just that. I for one cannot bring myself to blame them. In the past I have been in their company. I still recoil from the whiff of dogmatism.

¹⁶ Ferré, F. *Being and Value: toward a constructive postmodern metaphysics*. Albany: State University of New York, 1996. p.19.

¹⁷ Ibid. p.1.

¹⁸ Ibid.p.4.

If ever a 'know-it-all' attitude is radically inappropriate, it is when one is indeed trying to know the *All*.¹⁹

Metaphysics is concerned with 'all that is', and by this factor become an area that is almost impossible to approach. Yet it may be suggested that without some form of a metaphysical structure to the world around us, humans would not be able to make any sense of it. In the absence of any constructed metaphysics, a concept of reality will nonetheless be formed. When we are faced with environmental problems the need of a metaphysical system to underpin our moral obligation to nature becomes unavoidable; otherwise we can make no claim for that moral obligation.

Although there are no intentionally formed metaphysical systems today it appears that monistic materialism, as Roy Bhaskar describes it, underlies both postmodernism and Ultra-Darwinism, even though each is strongly opposed to the other. They are metaphysically poor in the informing of any ethical theory, but particularly when it comes to environmental ethics. The one encourages diversity and embraces moral pluralism, which lacks foundation for any ethical decision: the other gives a deterministic account of humans and undermines all morality by its reductionist explanation. These two areas of thinking do not remain separate from one another but merge into a confused system of metaphysics in which ethics and any system of valuing also become confused. There is a similar confusion in the understanding of nature and the relationship of humans to nature. Whatever is said at the intellectual level, there is an underlying suggestion that:

Humans are biological creatures, determined by evolutionary processes. Moral behaviour is the result of natural selection.

¹⁹ Ibid. p.5.

And that:

There is no objective reality or objective values. Humans are creatures that create their own worldviews (even within science) and their own value systems that are best for the survival of the individual.

These two views are contradictory but they reveal the paradox of the human situation: we are and we are not a part of nature. This is the subject/object distinction that haunts philosophy and is highlighted in areas of discussion to do with nature and the environment. What neither of these two views, taken separately or together, is able to give us is why we should have a moral obligation to nature.

When we take the two together we have the conclusion:

Moral obligation to nature is only for those humans who, because they have evolved that way, choose to have a moral obligation to nature within their worldview.

This conclusion highlights the problem: when we are concerned with the things of nature, there is something wrong with our concept of reality or 'reality'.

What is needed when we talk of ourselves and our relationship to nature is what Nagel calls 'a view from nowhere':

The attempt is made to view the world not from a place within it, or from the vantage point of a special type of life and awareness, but from nowhere in particular and no form of life in particular at all. The object is to discount for the features of our pre-reflective outlook that make things appear to us as they do, and thereby to reach an understanding of things as they really are.²⁰

In metaphysics and ethics we require a non-relativistic point for viewing the world. Mechanistic materialism does not see the problem as even existing: postmodernism would see Nagel's solution as accepting mechanistic materialism.

²⁰ Nagel, T. *Mortal Questions*. Cambridge: Cambridge University Press, 1979. p.208.

The underlying problem is the objective/subjective distinction. Science so often works towards understanding all of nature, and humans as a part of nature, in objective terms: postmodernism incorporates nature into the subjective. But a metaphysical system of 'the whole' needs to unite the objective and the subjective. Mary Midgley describes the objective and the subjective as two 'aspects of life':

These two aspects of life are not two kinds of stuff or force. They are two points of view – inside and outside, subjective and objective, the patient's point of view of his toothache and that of the dentist. The two angles often need to be distinguished for thought. But both of them are essential and inseparable aspects of our normal experience, just as shape and size are inseparable aspects of objects.²¹

Not only do we need to accept the two 'aspects of life', but we also need to know the limitations of both – what things are a part of objective knowledge, and what things are the area of subjective experience. A metaphysical system needs to situate both 'aspects of life' within it before we can move to finding value for nature. This project is inevitably extremely difficult but, nevertheless, worth pursuing.

²¹ Midgley, M. *Science and Poetry*. London: Routledge, 2001. p. 134.

Chapter 4

Metaphysics

I have argued in the previous chapter that when we concern ourselves with the problems of the environment we become concerned with the reason for why we should value the things of nature and which things we should value above others. This brings us into discussions about values in general and moral values in particular, and thereby to ethical theories. However, the strength of ethical theories relies on underlying belief systems, and this is the realm of metaphysics. Any metaphysical account needs to accommodate both the objective and subjective aspects of our lives.

Our beliefs should be ones that are true beliefs if they are to give full authority to our ethical theories. I am not talking about a 'worldview' or a 'grand narrative' as postmodernism would have us believe, but a search for something that is not based on our own constructions. For values to have meaning there needs to be a belief in an objective reality of which we can have knowledge. This is a massive problem and not one I can solve in this thesis. Nevertheless I hope to have done some work to the formulating of the problem and that I will give some new ways of dealing with it. The first task is to secure our capability of achieving objective knowledge.

1. Objective Knowledge.

The research for this thesis has led to the unravelling of two major opposed trends of thought in the thinking of today – that of science, as originally formulated, and that confusion of thought that has been termed 'postmodernism'. The results of the scientific enterprise and the need of humans to find a place for subjective experience outside the confines of 'objective' science, have led to major metaphysical

confusions. We need to be sure of the role of the subjective and the objective in our approach to our understanding of nature. Ferré outlines what our agenda is for the future:

...of reuniting physics with mentality, objectivity with subjectivity, efficient causality with purpose, stability with change.¹

Amongst this list we can see the same problems that intrigued the ancient Greek philosophers: reason and experience, reality and appearance, teleological explanations and events explained mechanically, permanence and change.

In the past it was assumed that objective knowledge was obtained through the use of reason. Postmodernists have questioned this concept of reason and they have put the emphasis on the interpretations of the world that humans contrive within social and cultural environments. Foucault, in particular, attacks reason and the connected term 'rationality' by turning all such concepts into ideology that are non-rational by nature:

His real point, [Foucault] himself would say, is not that the ideological perspectives of the past were foolish or irrational at all, but rather that all ideology in the very wide sense in which he uses the term, including our present ideology, is culture relative. He is trying to show us how every culture lives, thinks, sees, makes love, by a set of unconscious guiding assumptions with non-rational determinants. If previous ideologies now seem 'irrational' it is because we judge them by our culture-bound notion of rationality.²

¹ Ferré, F. *Being and Value: toward a constructive postmodern metaphysics*. Albany: State University of New York, 1996. p. 262.

² Putnam, H. *Reason, Truth and History*. Cambridge: Cambridge University Press, 1981. p. 160.

Hilary Putnam points out that this type of thinking is extremely worrying because of its deliberate attack on rationality itself:

What is troubling about Foucault's account is that the determinants he and other French thinkers point to are *irrational by our present lights*. If our present ideology is the product of forces that are *irrational by its own lights*, then it is internally incoherent. The French thinkers are not *just* cultural relativists; they are attacking our present notion of rationality from within, and this is what the reader feels and is troubled by.³

The relativists' arguments against reason and rationality are tremendously compelling, but they lead to nihilism by discarding any way in which humans can achieve true knowledge. From their point of view, there cannot be objective knowledge for we have no way of knowing if we have access to it even if there were such a thing. This is an unsettling conclusion. It is true that we still have the ancient problem of how far we can trust our senses to provide us with information of an objective reality versus the suggestion that humans are trapped within their own perceptual and conceptual frameworks, but what has been lost is the sense of a divine gift, 'reason' in the traditional sense, which leads humans beyond appearances to reality in a way that Plato believed.

The attack on objective knowledge and reason has consequences for our belief in objective values. In fact the concept of objective values has been abandoned by many thinkers since the beginning of the 20th century. Science presents an objective reality but denies that it can discover objective values: postmodernism accepts values but concludes that they are a result of so many factors that they cannot be termed 'objective' and so supports pluralism, relativism or even subjectivism. With the

³ Ibid. pp. 160-161.

postmodernist attack on reason and objective knowledge, we first need to establish both these concepts as well as the possibility of objective value. There could be objective knowledge without objective value, as some scientists assume, but there cannot be objective value without objective knowledge.

Objective knowledge, if not interpreted as intersubjectivity, implies that there is a reality to be discovered. However, even within science, objective reality has been brought under scrutiny from some interpretations of quantum theory. Objectivity seems a hard concept to be able to hold and yet, to be able to have and use knowledge, the concept of objectivity is essential. We certainly need to have the concept of objectivity in opposition to subjectivity. In many of our discussions about the world we are brought to the conclusion that we are necessarily drawn into the duality of objectivity and subjectivity. Perhaps the extreme form of dualism, as expressed by Cartesian substance dualism, is mistaken, but that does not imply that all expressions of duality are wrong. We need to distinguish between the subjective and the objective and we are, in fact, as Robin Attfield shows in his article in *Environmental Values*, committed to this distinction:

My next point is that all readers of this essay (including its author) are committed to accepting this distinction, even if any are consciously inclined to reject it. For none of us can help believing that we... are reflecting ...on value and objectivity and on various beliefs...about these things. And if we believe this, then whatever we may say about the Copenhagen interpretation of quantum mechanics, or the self as a social construct, or the relational theories of perception and of identity, we also recognize and accept the distinction between thinkers and objects of thought. For we presuppose this distinction before we can as much as consider the nature of selves or of objects.⁴

⁴ Attfield, R. 'Postmodernism, Value and Objectivity' in *Environmental Values*. 10 (2), 2001. pp. 146-147.

The objective/subjective distinction is important for a foundation of knowledge but that acceptance is not to be equated with acceptance of the fact/value dichotomy. Putnam traces the origins of the latter division to Hume's dictum that an 'ought' can never be derived from an 'is', along with his distinction between 'matters of fact' and 'relations of ideas' that became the analytic/synthetic dichotomy. The logical positivists accepted Hume's analysis so that 'facts' were to do with what could be observed, or objects. Later they found that they needed to include theoretical terms as 'facts', but by accepting theoretical terms the logical positivists had to redefine cognitive significance as being a system that helps in prediction. This move led them into a quandary over the axioms of mathematics and logic:

But to *predict* anything means (to logical positivists) to *deduce observation sentences from a theory*. And to deduce anything from a set of empirical postulates, we need not only those postulates but also the axioms of mathematics and logic. According to the logical positivists, these axioms...do not state 'facts' at all.⁵

The axioms were defined as analytical by logical positivists. The subversion of the analytic/synthetic dichotomy by Quine revealed the confusion of the thinking of the logical positivists. And the clear notion of 'fact' as the logical positivists had defined it also collapsed. Quine's analysis broke down the concept of the a priori which led him to question any putative rules of right reason that judged how experience should be interpreted. In that move he went too far, as it led him to a position that undermines the ability for us to be able to attain objective knowledge of reality

⁵ Putnam, H. *The Collapse of the Fact/Value Dichotomy: and other essays*. Cambridge: Harvard University Press. 2002. p. 29.

beyond our own reality. Although he is not a relativist as regards truth, the truth for him is reduced to 'what is held to be true'.

However, Quine's analysis did open the doors to questioning of the logical positivist's definition of 'fact'. Putnam points out that values, which the logical positivists had excluded from being facts by their definition and therefore were not within the cognitive realm, were mostly thought of as ethical values. But there are other values, such as epistemic values that scientists use:

The classical pragmatists, Peirce, James, Dewey, and Mead, all held that value and normativity permeate *all* of experience. In the philosophy of science, what this point of view implied is that normative judgments are essential to the practice of science itself. These pragmatist philosophers did not refer only to the kind of normative judgments that we call 'moral' or 'ethical'; judgments of 'coherence', 'plausibility', 'reasonableness', 'simplicity', and what Dirac famously called the beauty of hypothesis, are all normative judgments in Charles Peirce's sense, judgments of 'what ought to be' in the case of reasoning.⁶

I do not want to take a pragmatist's position, but there is something worthwhile in Putnam's analysis of values. Ethical values are one type of value amongst many, including aesthetic values and epistemic values. To equate values with the subjective is not satisfactory for, as Putnam points out, even science uses certain values which are understood to be objective, as, for example, 'a coherent theory' where 'coherent' is a value judgement which is intended not to be limited to any subjective point of view. The fact/value dichotomy makes the mistake of equating objectivity with description, assuming that where there is a fact there must also be an object. But value terms as well as mathematical and logical truths, although there are no objects

⁶ Ibid. pp. 30-31.

to which they refer, can also be objective. 'Objectivity' is better equated with 'governed by reason', or even 'discovered by reason'. This equation puts the emphasis on reason or rationality and so we conclude that 'reason' is an essential concept as regards to obtaining objective knowledge. We can define reason as a mode of discovering patterns or order in the world about us beyond our own subjective experiences, and the order once discovered can be shared with others as a legitimate way of perceiving the world. In this way the use of reason leads us to objective knowledge and also to objective values once we free ourselves from the fact/value dichotomy as Putnam suggests. David Brink points out that even if we accept the fact/value dichotomy the is/ought gap is no greater than any is/is gap in other areas of knowledge:

Philosophers of science concerned with intertheoretic reduction have long claimed that propositions in one scientific discipline cannot be deduced from propositions belonging to other scientific disciplines without the addition of bridge premises that nomologically connect possession of properties picked out by the discipline being reduced and properties picked out by the reducing discipline. A classic illustration of this claim is the inability to deduce the laws of thermodynamics from the laws of statistical mechanics without the aid of bridge premises, such as Boyle-Charles law, which state lawlike relations between kinetic molecular energy and temperature.⁷

The acceptance of the is/is gaps between two levels of explanation demonstrates that the is/ought gap does not provide a reason to deny that moral claims are fact-stating and that we can therefore have objective moral values.

⁷ Brink, D. *Moral Realism and the Foundations of Ethics*. Cambridge: Cambridge University Press, 1989. p. 167.

Agreeing on the possibility of objective knowledge brings us to the concept of truth. The problem that we have is to do with related terms: objective knowledge, reason and rationality, truth and reality. To have objective knowledge that is not simply intersubjectivity or consensus of opinion we need a concept of reality. We also need a concept of truth, for in order that we can argue about the status of knowledge as objective or subjective we require a way of relating to reality in terms of true or false. I accept the realist concept of truth as defined by William Alston:

A statement (proposition, belief...) is true if and only if what the statement says to be the case actually is the case.⁸

Alston continues to describe the conditions for truth by referring to the proposition 'gold is malleable'. He says that the content of any statement gives everything that is needed to make the statement true:

In particular...there are no *epistemic* requirements for the truth of my statement. It is not required that any person or any social group, however defined, know that gold is malleable or be justified or rational in believing it. It is not required that science be destined, in that far-off divine event towards which enquiry moves, to arrive at the conclusion that gold is malleable. It is not required that it be accepted by a clear majority of the American Philosophical Association. It is not required that it has been rendered probable by some body of empirical evidence. So long as gold is malleable, then what I said is true, whatever the epistemic status of that proposition for any individual or community.⁹

⁸ Alston, W. *A Realist Conception of Truth*. Ithaca: Cornell University Press, 1996. p. 5.

⁹ *Ibid.* p. 6.

For a concept of truth to be meaningful it needs to be as Alston describes it. Truth is related to what there is, to a reality, and not to just what we know. Reality is the foundation for claiming that there is objective knowledge so that objective knowledge is not considered as the result of numerous subjective interpretations. We also need a faith in reason, for reason is then understood to be the means by which humans are able to have access to reality and objective knowledge. Reason also is required to separate the objective from the subjective. This does not mean that we would never be mistaken. We may not always think clearly, or we may not have all the necessary information, or we may be swayed by personal experiences. Nevertheless, reason is a prerequisite to the obtaining of objective knowledge that is knowledge of reality.

But the foregoing argument has been a problem for many philosophers over the centuries. The concept of truth appears when we need to communicate information about the world around us. It seems to become a problem when there is a system of signs to convey information from person to person. For would a non-human have a problem with truth? One could imagine the higher primates having the ability to communicate a truth or a non-truth, but it is unlikely that other creatures should be involved in this type of communication. So truth and objective knowledge are linked to communication and the assumption of a shared world:

All propositional thoughts whether positive or sceptical, whether of the inner or the outer require possession of the concept of objective truth, and this concept is accessible only to those creatures that are in communication with others. Knowledge of other minds is thus basic to all thought. But such knowledge requires and assumes knowledge of a shared world of objects in common time and space. Thus the acquisition of knowledge is not based on a progression from the subjective to the objective; it emerges holistically, and is interpersonal from the start.¹⁰

¹⁰ Davidson, D. *Problems of Rationality*. Oxford: Clarendon Press, 2004. p. 18.

It is not the case that we move from the subjective to the objective. We already reside in the objective world by our assumption of a shared world. Davidson concludes that we must assume that most people must be right most of the time. However, Davidson's conclusion needs some correction in that we should allow for the difference between what is generally held to be true and what *is* true. Nevertheless, we can at least agree with Davidson that there is an objective world of which we can have objective knowledge because we live in a shared world.

The argument I outlined in the last paragraph but one, is an argument for the correspondence theory of truth. It is from the perspective of metaphysical realism:

On this perspective, the world consists of some fixed totality of mind-independent objects. There is exactly one true and complete description of the 'way the world is'. Truth involves some sort of correspondence relation between words or thought-signs and external things and sets of things.¹¹

Putnam calls this the externalist perspective because it takes the perspective of a God's Eye point of view. Now I hold that the externalist perspective is the only view to have if we are to make sense of objective knowledge and truth. There is one reality and an external perspective on that reality however difficult it is for humans to reach it. I therefore hold with a correspondence theory of truth.

Now this argument is notoriously difficult to uphold for there is always the problem of how we can bridge the gap between what we know about the world through our perceptions and what there really is. This problem has been expressed as the problem of appearance and reality. It is also the problem of how it could ever be

¹¹ Putnam, 2002. op. cit. p.49.

possible for us to escape our own conceptual frameworks and belief systems so that the concept of reality makes no sense. We can never be outside our own situation to compare it to reality. Putnam does not hold the correspondence theory of truth for he argues for an internalist perspective:

The perspective I shall defend has no unambiguous name. It is a late arrival in the history of philosophy, and even today it keeps being confused with other points of view of a quite different sort. I shall refer to it as the *internalist* perspective, because it is characteristic of this view to hold that *what objects does the world consist of?* is a question that it only makes sense to ask *within* a theory or description. Many 'internalist' philosophers, though not all, hold further that there are more than one 'true' theory or description of the world. 'Truth', in an internalist view, is some sort of (idealized) rational acceptability – some sort of ideal coherence of our beliefs with each other and with our experiences *as those experiences are themselves represented in our belief system* – and not correspondence with mind-independent or discourse independent 'states of affairs.'¹²

Putnam, accepting the internalist perspective, thereby defines 'truth' as 'rational acceptability' and is accepting a coherence theory of truth. This definition of truth is not strong enough to do the work we need it to do to underpin any scientific knowledge let alone any other type of knowledge we may wish to pursue. Although the correspondence theory of truth is the more difficult one to argue for, the coherence theory of truth can so easily collapse to a relativist position, although Putnam would not accept this. Although Putnam later argues that to draw on anthropological explanations is a form of scientism that leads to relativism (because the cultural perspective becomes most important), he does say the following to support his internal perspective:

¹² Ibid. pp. 49-50.

Our conceptions of coherence and acceptability are, on the view I shall develop, deeply interwoven with our psychology. They depend upon our biology and culture; there are by no means 'value free'. But they *are* our conceptions, and they are conceptions of something real. They define a kind of objectivity, *objectivity for us*, even if it is not the metaphysical objectivity of the God's Eye view.¹³

But in this passage he is relying on 'our biology and our culture' to explain our conceptions of 'coherence and acceptability' that can lead to the type of cultural relativism he is against. '*Objectivity for us*' is a phrase that certainly has relativist implications.

Putnam's definition of objectivity is diluted by the inclusion of 'for us' and his concept of 'truth' is diluted by his definition of it as 'rational acceptability'. Both these dilutions can lead to a postmodernist position on truth and objective knowledge. As already discussed, postmodernism casts doubt on the possibility of one truth about the world:

Actually there is no such absolute as *the truth*,.. that, like the *one God* of Abrahamic religions, is a persistent and dangerous monistic illusion.¹⁴

If there is not one truth, then there must be a plurality of truths, as postmodernists argue. But a plurality of truths makes it more difficult to maintain the concept of objective knowledge. Michael Lynch takes his starting point from Putnam when arguing for a plurality of truths about the world:

¹³ Ibid. p. 55.

¹⁴ Sylvan, R. *Transcendental Metaphysics: from radical to deep pluralism*. Cambridge: White Horse Press, 1997. p. xiii.

The notion of *pluralism* shines brightly within academia and throughout the culture at large. In its more general form, pluralism is the idea that there can be more than one story of the world; there can be incompatible, but equally acceptable, accounts of some subject matter. There are no absolute facts but a diversity of truths, all of which equally clamor for our attention.¹⁵

But he realizes that to claim that there is a diversity of truths casts doubts on the possibility of objective knowledge. He is aware that this is a dangerous situation to be in when we need the concept of objective knowledge to make sense of any enterprise. He has a clever argument in which he argues for a realist concept of truth within a metaphysical pluralism. There is only one concept of truth but it is limited to conceptual schemes:

According to the type of pluralism I've been defending in this book, the conditions under which a proposition is true are determined by the conceptual scheme in which the proposition is expressed. But what makes a proposition true is not its relation to the scheme but whether or not the conditions obtain. For a claim to be true (or false), the conditions must be relative to a scheme.¹⁶

Although Lynch realizes the necessity of objective knowledge, his arguments do not really solve the problem if a pluralist position is taken. He argues that there are many worldviews and conceptual schemes, but an acceptance of this argument one could retort would lead to the impossibility of knowing which of the worldviews or conceptual schemes was correct. In fact whether they were correct or not does not come into the equation, only whether they are viable, and that is a problem too:

¹⁵ Lynch, M. *Truth in Context: an essay on pluralism and objectivity*. Cambridge: MIT, 1998. p.1.

¹⁶ *Ibid.* p.139.

The pluralist, then, needn't admit that every possible worldview or conceptual scheme is as good as every other. There are *viable* and *nonviable* worldviews. A viable worldview hangs together, is free from massive inconsistency, fits the empirical data, is mostly trueful, and so on. A nonviable worldview is fragmented and inconsistent, ignores the data and is more often mistaken than not. Of course, there is no calculus to tell us when we have a viable or nonviable scheme.¹⁷

But if there is nothing that can tell us if we have a viable or a nonviable scheme then the conclusion must be that we have no objective knowledge. Truth is limited within particularly conceptual schemes and that gives us no footing to decide which of the conceptual schemes should be accepted. Lynch claims that his thought was inspired by Putnam's work; so Putnam's coherence theory of truth clearly does open the doors to the difficulty of claiming that there is objective knowledge. It seems wiser to accept a correspondence theory of truth so that objective knowledge can be a possibility.

We need to have a belief in the possibility of objective knowledge to underpin all our enterprises. To do this we need a correspondence theory of truth as well as a concept of reality. I take the realist position as being the only way to retain the concept of objective knowledge. Realists are often equated with being materialist, but this need not be so. A realist can accept the reality of both mind and matter. Roger Trigg defines a realist as one that holds that there is a world that is independent of our judgement of it:

Although realists may be materialists, they do not have to be. The nature of the ultimate constituents of the world is a totally different problem from the relation of reality to our true judgements about

¹⁷ Ibid. p. 150.

it. Indeed realists leave open what is to be meant by 'the world'. We have used the term rather broadly to mean 'what there is'. The realist can accept that mind, matter and even other kinds of entities might exist. His argument with the idealist is not concerned with the reality of mind. He is merely concerned to hold that the mental does not exhaust reality.¹⁸

The realist holds that truth is related to what there is, even if what is is beyond our abilities to experience, and this chimes well with the correspondence theory of truth.

A major opposition to the realist in academic fields today comes from those who define 'truth' as being related to what agrees only with our experience:

We must distinguish between those who want to define truth by some notion of correspondence or agreement with reality, and those who turn instead to the idea of truth being related to what agrees with our experience.¹⁹

The correspondence theory of truth does not guarantee realism, but it is at least a way of avoiding the pitfalls that occur if the possibility of correspondence is denied. Truth that is defined as agreeing with our experience takes us eventually a long way from what may be first thought of as realism. An argument for reality as agreeing with experience may go as Trigg outlines it:

It may be suggested that reality must be experienced if the notion of correspondence is to be meaningful. Correspondence with an ineffable and mysterious reality would be useless as a criterion for truth, and it may be thought that we cannot *mean* by 'true' a correspondence which we can never discover. Truth appears to be forever removed from our grasp unless reality can be experienced and expressed in

¹⁸ Trigg, R. *Reality at Risk: a defence of realism in philosophy and the sciences*. 2nd edition. London: Harvester Wheatsheaf, 1989. p. 28.

¹⁹ *Ibid.* p.39.

language. The natural consequence is to insist that we mean by 'reality' empirical reality. In other words, reality is what we experience and hence we can talk about.²⁰

But when this line of argument is taken it brings us to the verification principle:

The corollary of this is that truth becomes linked to the possibility of verification. The insistence that the truth or falsity of meaningful sentences must make a publicly observable or verifiable difference is the basis of the so called 'verification principle'. It is held meaningless to talk of what is beyond such verification.²¹

However, verificationism, although a theory about meaning, raises questions about the relationship of truth to reality. The theory as first formed led to the conclusion that the only reality that was intelligible was one that humans could describe through observations. A verificationist refused to accept that there was a separation between what was true and what could be recognized as true. So the discussions are confined to the notions of truth and language, and what makes a meaningful sentence. This way of thinking of truth led to the anti-realist position. An anti-realist will hold that some sentences are neither true nor false, and even that we cannot talk of truth and falsehood for some sentences, as truth is limited by the human capacity for evidence. The anti-realist limits truth and reality by defining them within the limits of what humans have evidence for at any one time.

Trigg outlines Dummett's version of anti-realism. Dummett accepts:

²⁰ Ibid. pp.39-40.

²¹ Ibid. p. 40.

...that a statement is true 'only if there is something in the world in virtue of which it is true'. He would part company with a realist in thinking that *all* statements are true or false, and would say that if we cannot decide the truth of a sentence for lack of evidence, there is nothing in the world in virtue of which it is true. 'The world' or 'reality' is the world as *we* see it or reality *for us*.²²

The problem with this conclusion is that it takes away the force of our ability to discover reality itself. The emphasis on meaning has led to an ontological claim which limits humans to a reality that is only within their ability to find evidence for it. There is no reality beyond the evidence humans find. The anti-realist does not just limit what we can say about reality, but limits reality itself to what we can say about it. This leads to the conclusion that Trigg sums up:

Under this view [anti-realism] 'reality' can never be inaccessible, since it is normally no more than the circumstances under which we learnt the meaning of what we wish to say.²³

The anti-realist, like the verificationist, becomes entwined in language because of their emphasis on truth being linked to meaning. In this way their concept of reality becomes concerned about communication between humans and the form of language that we possess. Truth becomes only a semantic category.

This approach cuts across other problems in philosophy. It is a problem not only about the relation of concepts to reality but also a problem about the distinction between mind and language. Concepts can be thought of as wholly mental or formed

²² Ibid. pp. 44-45.

²³ Ibid. p. 45.

by a shared language. The emphasis on the latter is one interpretation of Wittgenstein's philosophy whereby meaning is defined in terms of use and the mind becomes just a linguistic ability. But the adequacy of language in describing reality and the status of reality apart from, and sometimes even beyond, language cannot be a linguistic question. A realist, like myself, would hold that truth must also lie beyond the confines of human language even though we may become concerned with it through communication. It may be the case that we cannot talk of what is not expressible, but if knowledge is to advance, particularly scientific knowledge, we need to assume a reality and a truth beyond our present verifications and language:

The realist belief in strong objectivity with its consequent insistence that many things are beyond the powers of our language or understanding to grasp raises serious problems. We cannot talk of what is inexpressible, so we are not even in a position to say that we cannot put 'it' into words. What is 'it'? Our response is to point to what happens in science as scientific knowledge grows and its vocabulary continually increases. New words have to be produced to refer to new entities as they are discovered. The realist view of science is that the categories used by scientists are intended to reflect real distinctions in nature.²⁴

When looking at a scientist's confrontation with problems about 'what there is', we can see how our present language and concepts can be a restriction to the attempt to understand 'what there is'. David Bohm puts forward the case in his book *Wholeness and the Implicate Order* that our language is largely to do with fragmentation. This leads scientists to approach reality in fragmented terms and may lead to the confusions at our understanding of reality at the quantum level. We need to ask the right questions but our questions may be based on the wrong presuppositions. It is the

²⁴ Ibid. p. 45.

presuppositions. It is the scientist who can step beyond the present confines of language and language structures that often solves important problems in science:

In scientific inquiries a crucial step is to ask the right question. Indeed, each question contains presuppositions, largely implicit. If these presuppositions are wrong or confused, then the question itself is wrong, in the sense that to try to answer it has no meaning. One has thus to *inquire into the appropriateness of the question*. In fact, truly original discoveries in science and in other fields have generally involved such inquiry into old questions, leading to a perception of their inappropriateness, and in this way allowing for the putting forth of new questions. To do this is often very difficult, as these presuppositions tend to be hidden very deep in the structure of our thought.²⁵

Science to make progress needs to go beyond language and even beyond particular accepted concepts of thought. Theories are put forward so as to give a new pattern and order to what there is. Then they are tested experimentally to see if the pattern and order expressed in the theory is close to reality. If the theory is close to reality then the experiments confirm the theory. If the theory is not close to reality then the experiments do not confirm the theory. Scientists largely assume that they are dealing with objective reality. It is in the area of science that we can most easily argue for objective knowledge because of its success in solving problems.

Science has been the main area of knowledge that has held the belief in objective knowledge: objective knowledge was a prerequisite of science. Still unquestionably accepted among some parts of the scientific community is that science has as its goal the pursuit of objective knowledge and even truth:

²⁵ Bohm, D. *Wholeness and the Implicate Order*. London: Routledge and Kegan Paul, 1980. p. 36.

...in pursuit of some worthy aim (variously characterized as truth, knowledge, explanation etc.) the members of the [scientific] community dispassionately and disinterestedly apply their tools, the scientific method, each application of which takes us a further step on the royal road to the much esteemed goal.²⁶

The postmodernist viewpoint challenges this 'goal'. Kuhn and Feyerabend were amongst the first thinkers that questioned the scientific enterprise as entirely objective. The war between scientific realism and postmodernism is fought at a metaphysical level. Scientific realists accept the objectivity of science, but postmodernists challenge this objectivity claiming that science is governed by ideological assumptions and that there is no objective truth:

The differences between the proponents of these sketches go as deep as intellectual divergences ever go, involving in this case differences concerning the objectivity of truth, the possibility of rational discourse, the nature of values, language and meaning and explanation, among others.²⁷

Thinkers who follow Kuhn and Feyerabend put forward a thesis that denies commensurability of two scientific theories and then from this conclude that there can be no facts that are outside constructed theories: truth is relative:

Both Kuhn and Feyerabend pass from the thesis of incommensurability to a thesis of the relativism of truth. Kuhn says that the most fundamental feature of incommensurability is: 'In a sense I am unable to explicate further (that) the proponents of competing paradigms (ie. incommensurable theories) practise their trades in different worlds.' Feyerabend holds that the proponents of

²⁶ Newton-Smith, W. H. *The Rationality of Science*. London: Routledge & Kegan Paul, 1981. p. 1.

²⁷ *Ibid.* p.2

incommensurable theories differently constitute the facts. For him there are no facts which are independent of our theories concerning them.²⁸

When trying to make sense of why scientific theories change our conception of reality so radically at times, the non-rationalists say that when a scientific paradigm changes, the meanings of all terms change according to the new paradigm.

Roger Trigg argues against the postmodernist trend because it opens the doors to relativism and nihilism:

The chill winds of relativism and even nihilism are blowing ever more strongly. The status of the parts of human knowledge which have seemed most firmly established, is put in question. If we cannot say what the world is like with any hope of success, we must realize that our beliefs however firmly held are merely the result of influences on us and our society. These in turn may have nothing to do with the way the world is. The work of such writers as T.S. Kuhn and Paul Feyerabend in the philosophy of science has made it seem impossible that anyone should adopt one theory rather than another on rational grounds. Their accounts appear to invite the sociologist or the psychologist to give explanations why a theory is chosen.²⁹

Trigg shows that if we believe that all our knowledge was a result of social and psychological influences on us we would have no grounds to accept one theory rather than another. The result would be that we would have no reason to embark on any project of enquiry. If there is no objective knowledge possible in science then the concept of objective knowledge in any area is threatened.

²⁸ Ibid p.10.

²⁹ Trigg, 1989. op. cit. p. ix.

The scientist who is a rationalist and accepts the possibility of objective knowledge based on the belief that we have access to reality would also accept that the goal of science is to discover truth about that reality. To argue for objective knowledge we need to assess the belief that science has as its goal the discovery of truth. Is this a valid belief? Or to put it another way, would science be intelligible if this were not the goal? Newton-Smith outlines the problem to be tackled:

1. What reasons are there for taking the goal to be truth or approximation to the truth? Can one render the scientific enterprise intelligible by assuming some other goal?
2. If no account other than one making the goal approximation to the truth is acceptable, can we provide a satisfactory explication of this notion?³⁰

It surely is the case that no scientist would begin any scientific research at all unless they assumed that they sought the truth or, at least, an approximation to the truth however difficult that might be. The scientific enterprise simply would be nonsense without that goal. So the problem lies with Newton-Smith's second point.

Many recent thinkers have accused scientific research of being socially and politically controlled or being confined within certain conceptual frameworks. But scientific research to be rational must go beyond these restraints. Whether the scientific enterprise is seen as rational or non-rational affects the overall view of metaphysical reality:

Where the rationalist sees progress (or the possibility of progress) judged in relation to his standards, the non-rationalist sees mere change which is to be explained sociologically

³⁰ Newton-Smith, 1981. op. cit. p.15.

and/or psychologically. Theories simply supplant one another. The explanation of these mere changes lies in the external factors and not in the internal factors specified by a rational model.³¹

If science has as its goal 'approximation to truth' then it must see itself as progressing, not simply changing theories. Of course there may be any amount of social and economic factors that mould an enterprise of any kind, but this does not mean that all enterprises have been socially, psychologically and economically determined, nor that there can be no progression within enterprises.

In science, the notion that science progresses or achieves some approximation to reality is proved by the powers of problem solving. It is quite evident in the contemporary world that science has increased its powers of problem solving, as in the growth of technology and the successes of medical science; so this supports approximation to the truth. Further, from this conclusion it is an inescapable fact that scientific method is applied successfully. Newton-Smith answers Feyerabend, who denies scientific method, that scientific progress could not be possible without scientific method:

If you want to make scientific progress you cannot do just anything.³²

This sounds like common sense! Science is rational in that it follows the best method to achieve the goal of approximation to the truth and that is attested by its successful predictions. In answer to the instrumentalist, science does not just give approximate

³¹ Ibid. p.17.

³² Ibid. 269.

ideas that work, for the results of the scientific enterprise not only predict successfully but also give explanations. Sometimes those explanations are faulty but continued explorations refine those faults. Knowledge is acquired and as knowledge is acquired so there is scientific progress. That there are sometimes sociological or political motivations to the scientific enterprise does not entail that these are the only ones. Humans do not always follow rational motivations, but this does not entail that they never follow rational motivations, for how would we judge the one against the other if there were no rational motivations? Science must be accepted as rational where it has been successful at explaining the world around us. If this is possible then the goal of approximation to the truth must be accepted as viable. In that case it follows that there is a reality that can be discovered and that objective knowledge is a possibility.

Quantum theory has undermined this concept of the objective. It produces many paradoxes that seem unsolvable and it does not appear to be in line with classical physics. At the quantum level it is impossible to make measurements of a sub-atomic system without disturbing it in some way. The problem of the elimination of the subjective/objective distinction, as mentioned earlier, becomes apparent at the quantum level. Reflecting on matters at the quantum level the scientist or philosopher may conclude that the measurements have not been genuinely made until someone has become conscious of the results. The observer then becomes a part of the system, not separated from the reality he/she observes. The problem that we have at the quantum level is that we cannot know the system itself but only how it behaves. This raises the question about the concept of objective reality. Further, there appears to be an essential indeterminism at the quantum level. Knowledge obtained can only be within the terms of probability. This leads to the emphasis being placed on the measurements and observations made rather than on 'what is'. Because of the

impossibility of knowing 'what is', scientists and philosophers have been led to accept an instrumentalist explanation of science. However, other scientists have followed Einstein's questioning of the situation.

Einstein was unhappy with the paradoxes that quantum mechanics seemed to imply. He believed in a well-ordered universe. In his biography on Einstein, Ronald Clark reports on a letter from Einstein to Philip Frank:

What Einstein was saying was this: if all the details of a coin's velocity, mass, moment of inertia, and other relevant factors were known as soon as it was in the air, and if it was still impossible to tell only by statistics which way it would fall, this was due not to a failure of causality. There was simply another causative factor which had not been considered. So with the laws of nature. Current ability to understand events in the atomic world only in statistical terms sprang from the limitations imposed by ignorance. In due course scientists might learn all the necessary facts, and the mysteries would then be removed. In 1907 it was difficult to dispute that this would eventually be so. The arguments were not developed until more than a decade later when the progress of physics slowly revealed that at the atomic level the laws of cause and effect give way to the laws of chance. Einstein remained unmoved, acknowledging that the work of his earlier years had led to the new situation, confident that 'God did not play dice with the world'.³³

In other words, Einstein realized that he could not have achieved what he had done in science if he had not assumed that 'God does not play dice with the world'. Thus, Einstein would not accept indeterminacy. He recognized the fact that, if there is to be knowledge at all, then there needs to be a real world that has order that humans, in principle, can understand. He fought against a conclusion that many intellectuals accepted.

³³ Clark, R. W. *Einstein: the life and times*. Introduction by Sir Bernard Lovell. London: Hodder and Stoughton, 1973. p. 120.

But the philosophical issues raised by quantum mechanics are by no means esoteric. Does quantum mechanics imply the overthrow of causality, and if so, how (if at all) is science still possible? If the observer creates the result of his or her observation, can one consistently suppose that there is a single objective world accessible to our observations? ³⁴

If indeterminacy is accepted then this will support an uncertain, disordered world – a world of particulars that show no overall pattern. In this world there can be no objective knowledge but merely pragmatic knowledge – knowledge that works in practical ways - and we would not be able to say why. This has become the accepted opinion of many people today, including eminent intellectuals. The concept of a world in which there can be no objective knowledge because there is no underlying reality to reach has had far reaching consequences in other areas of thought beyond science:

For this [conceptual problems in the foundations of quantum theory] has been among the most fertile sources for people in the (erstwhile) humanistic disciplines who wish to give ‘scientific’ credence to their claim that realism is a thoroughly outmoded doctrine which no self-respecting physicist would nowadays endorse. ³⁵

The result of this thinking outside physics departments was:

The emergent trend towards anti-realism and cultural relativism in various quarters of ‘advanced’ theoretical

³⁴ Healey, R. ‘Quantum Mechanics’ in Newton-Smith, W.H. ed. *A Companion to the Philosophy of Science*. (Blackwell Companion to Philosophy). Oxford: Blackwell Publishers Ltd., 2001. p. 376.

³⁵ Norris, C. *Quantum theory and the Flight from Realism: philosophical responses to quantum mechanics*. London: Routledge, 2000. p.2.

debate...the advent of a new postmodernist fashion which seemed to count reality a world well lost for the sake of pursuing its own favoured kinds of hyperreal fantasy projection.³⁶

Thus the indeterminacy theory fuelled the postmodernist trend. But also the postmodernist trend fuelled the acceptance of the indeterminacy theory. Anti-realism and cultural relativism that have flourished in many academic departments has filtered into everyday life. In any debate there is little acceptance of truth or reality, or that truth should be the goal. The result is acceptance of pragmatism in the style of Rorty, or pluralism, both within academia and the populace.

Although quantum theory has fuelled the postmodernist undermining of an objective reality, there are scientists today who question the Copenhagen interpretation of quantum physics because of its unacceptable implications. New theories are constantly being put forward to 'close the gap'. David Bohm has offered a theory in opposition to the indeterminacy theory. He suggests that the problems that appear at the quantum level can be solved in a similar way in which the problem of the Brownian motions was solved in physics. What may appear random at one level of understanding can be found to be determined by deeper individual laws:

Similarly, in the field of physics, when it was discovered that spores and smoke particles suffer a random movement obeying certain statistical laws (the Brownian motion) it was supposed that this was due to impacts from myriads of molecules, obeying deeper individual laws. The statistical laws were then seen to be consistent with the possibility of deeper individual laws, for as in the case of insurance statistics the overall behaviour of an individual Brownian particle would be determined by a very large number of essential factors. Or, to put the case more generally: *lawlessness of individual behaviour in the context of a given statistical law is,*

³⁶ Ibid. p.1.

*in general, consistent with the motion of more detailed individual laws applying in a broader context.*³⁷

More recently other physicists have sought an underlying substance beyond the quantum level to solve the paradoxes. What is important about these endeavours is that it reveals the fact that humans, whether scientists or not, seek to understand the world around them. To accept that the world is the result of pure chance happenings is to cease the search for an explanation of it. The only way to understand the world is to seek for some order or pattern within it. Humans never cease from searching for these patterns. Mathematics is a supreme example of this need to find patterns. Even within chaos theory there is a search for patterns that do not at first appear to be there. Like the ancient philosophers we seek order from chaos, because this is the only way we can learn about the world in which we live. The search for order is also the search of objective reality and a truth beyond appearance. To give up this goal would be for humans to return to being simply experiencing centres in the same way as non-humans, or to be locked within our own concepts learning nothing new and without any insight to the deeper truths that surround us.

Writers in the *New Scientist* recently express their concern at the attack on reason. They point out that science began with the belief in an ordered world:

In medieval and early modern Europe, when science made its greatest strides, scholars believed that the secrets of the universe could be unravelled because they had been implanted by a reliable and all-powerful creator God who had written nature's rules in a dependable way. In other words, the full emergence of science required belief in one all-powerful god, whose perfect creation awaited rational, scientific explanation.³⁸

³⁷ Bohm, 1980. op. cit. p. 87.

³⁸ Koch, R. and Smith, C. 'The Fall of Reason' in *New Scientist* 24 June 2006. p. 25.

They go on to argue that science has achieved so much that it would be foolish to abandon the original belief in reason:

There is little justification to abandon our trust in rationality and in science, for the best forms of civilization depend utterly on them. But in losing the idea that science helps us all make sense of the world, the west has forfeited one of its main sources of optimism, success and commitment to a humane society.³⁹

To accept the successes of science is to accept that science has the means to obtain objective knowledge. For objective knowledge we need to accept the assumption that there is an ordered reality of which we can to some extent obtain knowledge by the use of our reason.

2. Objective Values.

We can accept that science is successful in obtaining objective knowledge because of the way it both explains our world and advances our ability to control the world. If we hold that objective knowledge is possible because reason leads us to some part of reality and thereby to some truths about the world, then we can take a realist position. However, we need to go beyond scientific realism to metaphysical realism. Those that accept scientific realism believe that it is through the scientific enterprise that knowledge of what there is can be discovered. However one can be a realist while holding that science is not the only way in which to obtain knowledge.

³⁹ Ibid. p. 25.

Trigg differentiates between an epistemological view of reality (knowledge of reality) and a metaphysical one (reality itself):

Once we are clear that reality is to be firmly distinguished from whatever method may prove successful for an understanding of it, we are free to wonder whether the methodology of the physical sciences provides the only path to knowledge.⁴⁰

This distinction allows us to criticize some aspects of the results of the scientific enterprise while retaining a realist approach. Science may be an excellent way of understanding some areas of what there is, but is by no means the only way. There has been a tendency to restrict reason and rationalist explanations and accounts of truth to the scientific realm and treat the scientific method as the only way of obtaining objective knowledge. To return to Putnam and his comments on reason and rationality:

Starting in the fifteenth century, and reaching a kind of peak in the seventeenth century scientists and philosophers began to put forward a new set of methodological maxims. These maxims are not rigorous formal rules; they do require informal rationality, ie. intelligence and common sense, to apply. In short, there is a scientific method; but it presupposes prior notions of rationality.⁴¹

In other words, science is not the way in which reason and rationality come into being. Reason and rationality are necessary before the scientific enterprise can even begin to take place. Science therefore need not be the only area of knowledge that

⁴⁰ Trigg, 1989. op.cit. p.xxiii

⁴¹ Putnam, 2002. op. cit. p. 195.

deals with objective knowledge and truth. This is particular important when dealing with social interactions and morality. If we hold that reason and rationality are the ways in which we can achieve objective knowledge then we can also hold that in areas of knowledge other than science we can reach objective knowledge because reason and rationality are precursors of science. Putnam holds that truth and rationality are interdependent:

The argument in a nutshell was that *fact* (or truth) and *rationality* are interdependent notions. A fact is something that is rational to believe, or more precisely, the notion of a fact (or a true statement) is an idealization of the notion of a statement that is rational to believe. 'Rationally acceptable' and 'true' are notions that take in each other's wash.⁴²

I would agree with him up to a point although perhaps not to the extent that leads him to believe that 'truth' can be defined as 'rationally acceptable'. A truth may be rationally acceptable but because it is a truth and not because this is what rationally acceptable means. However, Putnam has more recently found his own definition inadequate:

Although I myself tried for a number of years to defend the idea that truth can be identified with 'idealized rational acceptability', I am today convinced that this was an error.⁴³

Putnam is against anti-realism for he holds that there are many truths, as a matter of contingent empirical fact, that are beyond the power of humans to ever know. I would

⁴² Ibid. p. 201.

⁴³ Putnam, 2002. p.124.

agree that there are truths that we can never know, but this should not limit us in our attempts to pursue truth even if it might seem at present beyond our limitations.

Although a metaphysical realist position is a difficult one to defend it is the only one possible if we are not to slide into relativism, or pluralism or a pragmatic approach to knowledge. If the argument holds that there is objective knowledge that justifies scientific enterprises because there is a reality of which we can have some truth, then we can begin to argue for objective values. Following Putnam, I have argued that as the scientific enterprise depends on our powers of reason and rationality we can apply our reason and rationality to other areas of knowledge, particularly that of morality and values in general. There can be no question that we are valuing creatures, that we are concerned with right and wrong and values of many kinds. The question so often asked is where our values come from. Both scientific realists, such as Ultra-Darwinists, and postmodernists explain morality in historical terms, whether evolutionary theory for the former or cultural history for the latter. Both explanations are forms of reductionism. They are both trapped within a form of thinking which finds the possibility of discovering values not acceptable because we do not have sense organs for determining values. Putnam calls this empiricist phenomenology:

Connected with the idea that to know that there are values we would need to have a special sense organ is the empiricist phenomenology according to which perceptual experience (as opposed to 'emotion') is value neutral and values are added to experience by 'association'.⁴⁴

⁴⁴ Ibid. p.102.

But the reality of the situation is that humans are constantly using value terms even within the realms of science. Humans are more valuational creatures than they are scientific creatures. Perhaps this is because humans are social creatures and as soon as we are interacting with one another we need to be dealing with matters of value. If we have a faculty to understand the world around us, we certainly also have a faculty to value the world as well. Now, just as in understanding the world successfully through science we need to use reason and rationality, so we need to use reason and rationality in discovering the right values to hold. Just as in science the concept of truth, or the approximation of truth, is a necessary one in the motivation to pursue knowledge (or why would there be science), so the concept of truth or the approximation of truth is also necessary for motivation in the discovery of right values. The pragmatist's equation of truth to 'consensus of opinion' is not good enough. Although debates are required concerning values, rather as recommended by Habermas' discourse ethics, it cannot be undertaken as if all we are doing is coming to a consensus of opinion. It needs to be undertaken in the sense that we are *discovering* true values. Ultra-Darwinists and postmodernists could never accept this position. But for morality to have meaning, values need to be considered as having objective reality.

To argue for objective values is not to deny that we cannot make mistakes in our values. Errors can be made as errors are often made in the sciences. It was an error of the ancients that the earth was understood to be the centre of the Universe. It could not be recognized as an error until the discoveries of the 15th and 16th centuries. Similarly errors can be made in finding right values. However, just as we make some discoveries in science that appear to be as close to the truth as possible, because explanations are given for certain phenomena that previously seemed mysterious, so

certain moral values, once discovered, seem obviously to be true, such like 'no human should be slave to another'. As Putnam puts it:

In the case of ethics, the corresponding thought is that we can concede to the skeptic that we have no *irreducibly* ethical knowledge. But what is, what could be, *more* irreducible than my knowledge, face to face with a needy human being, that I am *obliged* to help that human being?⁴⁵

Just as we need to argue for scientific realism to give meaning to the scientific enterprise, so we need to argue for moral realism to give meaning to morality.

Moral realism is a thesis about the metaphysical states of moral claims. Realism about the external world asks us to take the claim of the natural sciences and commonsense physical theory literally, as claims that purport to describe more or less accurately a world whose existence and nature are independent of our theorizing about it...

In a similar way, moral realism asks us to take moral claims literally as claims that purport to describe the moral properties of people, actions and institutions – properties that obtain independently of our moral theorizing. Moral realism is roughly the view that there are moral facts and true moral claims whose existence and nature are independent of our beliefs about what is right and wrong... The moral realist thinks that our moral claims not only purport to but often do state facts and refer to real properties, and that we can and do have at least some true moral belief and moral knowledge.⁴⁶

Brink's case for moral realism is to be applauded and I accept his arguments.

Many ethical theories today attempt to find objective values for morality, but they often try to do this by 'naturalizing' ethics. There is a danger in this if it is

⁴⁵ Ibid. p.132.

⁴⁶ Brink, 1989. op. cit. p. 7.

achieved in a reductive way. David Brink accepts ethical naturalism but argues that it needs to be understood in a non-reductive way:

A non-reductive form of ethical naturalism claims that moral facts and properties are constituted by, and so supervene upon (or vary in a lawlike way with), natural and social scientific facts and properties even if moral terms are not definable by natural terms.⁴⁷

I do not accept Brink's utilitarian approach to ethics but I do want to argue for moral realism and accept that moral facts supervene on natural and social scientific facts and properties without being defined by natural terms. Moral facts are acquired by processes of reasoning in a similar way to the process of reasoning in the acquiring of scientific facts. The process of formulating ethical theories is no different from the process of formulating scientific theories. Both require a certain amount of input from experience before an insightful creative leap to the formulating of a particular pattern and order that is then tested by experiment and observation. Such insightful creative leaps are found in the sayings of religious leaders, 'Love thy neighbour as thyself', or ethical theorists as in Kant's categorical imperative or the realization of the importance of future states of affairs for moral facts, which is one positive aspect of consequentialism. However, although we are valuing creatures the acquiring of moral facts is infinitely more complicated than the acquiring of scientific facts. The ability to discover the patterns and orders within the interactions of humans, or between human and non-human, is a complex matter. There is room for many mistakes both at the normative level and at the theoretical level. But to admit that it is a complex matter to acquire moral facts is not to say that we can only resort to moral

⁴⁷ Ibid. p.9.

pluralism or leave the realm of ethics to an emotivist or subjectivist position. Rather it involves a great deal of thinking. It requires the use of reason in the same way as is used within the sciences, but at a more complex level.

Brink argues against the non-cognitivists' approach to ethical theory.

Morality does not come from an internalist, subjective stance. Moral realism can be accepted because it explains the point and nature of moral enquiry:

Although various sorts of considerations support moral realism its intuitive appeal derives, I think, from the way it explains the point and nature of moral inquiry. In moral argument and deliberation, it seems, we are trying to *discover* what sorts of things are valuable, praiseworthy, or obligatory. We *recognize* moral requirements, they *constrain* our will and our conduct. We think people can be morally *mistaken* and some people are morally more *perceptive* than others.⁴⁸

The italics are Brink's but they underline the claim he is making that morality is about discovering moral facts by the use of reason. We could not take part in discussions about morality or come to realize that we were mistaken in some moral beliefs if ultimately there were no moral facts to be discovered. It is a similar enterprise to the scientific one where theories are accepted because they are a way of perceiving pattern and order in the world around us. Ethical theories can be accepted because they also are an attempt to see the pattern and order in the way people interact with one another and the world around them. Both scientific theories and ethical theories may be wrong or incomplete and there is the possibility that we may never be able to reach the whole truth either about the world around us or how we should behave. But both types of theories rest on the assumption that there is a reality that can be known.

⁴⁸ Ibid. p. 8.

This assumption is an important one and we can see the success of this assumption both in the discoveries of science and the progression in the ever-expanding moral circle.

3. Value for Nature.

Once we accept objective knowledge and objective values, we can also accept the realist position, both in science and in morality. In this way we can begin to move towards discovering the moral obligation we have to nature. Both in science and in morality humans reveal their differences from non-humans. We are creatures that can learn about the world around us beyond our immediate needs of survival. Many scientific discoveries were not motivated by a need for survival but from a deep curiosity about what the world is *really* like. Morality, the deep reflection on how we should behave towards one another, does not appear in the non-human world. As I have mentioned before, that non-humans are outside of morality lends to their attractiveness: their actions are outside of judgement. Only humans judge and value at all levels. The ability to evaluate and judge is the source of morality and this ability, alongside of a curiosity about the world, appears at a particular level of consciousness.

I have been arguing that both Ultra-Darwinism and postmodernism are metaphysically poor as regards to values. This metaphysical poverty, I have argued, leads to some unsatisfactory ideas in environmental philosophy because they do not answer the problem of why humans should care for nature. Postmodern thinking leads to a confusion of various different moral codes with no one principle to follow in making decisions about the environment. Science-informed environmental philosophy is lost in defining terms like ‘intrinsic value’ and ‘non-anthropocentrism’

in order to find value for nature. But intrinsic value gives little solution to the problem of how we should behave towards the environment because at some level we must use nature and so it is the instrumental value of nature that we are concerned about. In many ways we cannot escape from an anthropocentric point of view because our concern for nature comes from the concern we have for our own well-being, although we can moderate our demands on nature. The question is about how we should use nature, or what is the moral way to use nature. To take a sociobiologist's explanation of humans, as Callicott does, results in a morality which is far from the original concept of morality. 'Morality' in Callicott's terminology is the result of natural selection. If we are behaving 'morally' towards nature we will survive: if we don't behave 'morally' then we won't survive. But how do we know in advance what is a surviving 'morality' and what is not?

I have argued that we should be confident in the discoveries of science, that they are the 'truth' or an approximation to the truth, because they are so often successful in explaining and predicting the world around us. Evolutionary theory has proved to be successful: it explains and predicts many aspects of life on earth. Therefore evolutionary theory must be an approximation to the truth. However, we must be careful about the extent of the theory. As Dennett says Darwinism is so successful it is like 'a universal acid': it can explain everything. But perhaps it can explain too much. There are certain areas of the human condition that if explained by an extreme form of Darwinism become problematical. These areas are those of morality, freewill, responsibility and spiritual experiences, and also, I would argue, the sense of purpose. In Darwinian explanations they lose their original meaning and may even be assumed to be illusions developed in the mind to aid survival.

Although I have opposed Ultra-Darwinism against postmodernism, in some areas they complement one another. Postmodernists would favour a coherence theory of truth and so would Darwinians:

The Darwinian simply denies that truth can mean correspondence between one's ideas and reality, arguing rather that truth means... a coherence between all the parts that we hold important and significant. Unless challenged, one accepts the touchstone and tries to make a comprehensive, consistent and meaningful overall picture.⁴⁹

Therefore both Darwinians and postmodernists would disagree that the correspondence theory of truth was a possibility. 'Reason' also becomes suspect, for a wholehearted Darwinian would have to argue that reason was the result of evolutionary processes so that it has been formed in the way it is because that led to the survival of humans at the present. Postmodernists would say that 'reason' was the result of certain cultural movements.

Somehow we need to save the concept of 'reason' in a stronger way than just a result of evolutionary processes for human survival. If it is an adaptation we must hold that it is a specific adaptation because it does actually allow us to attain 'truth' of the world about us, or at least an approximation of the truth: our minds are so formed that it is possible for us to perceive a true picture of reality even if we may be prone to errors. We need a strong sense of 'reason' not only to underpin our discoveries in science, but also to underpin our ability to find truths about morality.

The other criticism I have made of both Ultra-Darwinism and postmodernism is that their explanations of humans are in terms of the past: either evolutionary

⁴⁹ Ruse, M. *Can a Darwinian be a Christian: the relationship between science and religion*. Cambridge: Cambridge University Press, 2001. p. 109.

history for the former or cultural history for the latter. But humans are as much defined by their futures as by their past. At a certain level of consciousness and self-awareness humans are able to deliberate and in this way free themselves from any kind of determinacy, whether biological or environmental. It is this psychological fact about humans that the existentialists explore in their description of anxiety. The freedom in our choices for the future can be overwhelming for us. We stand in the present free to form our futures. We are goal-orientated, purposive creatures. We are concerned with our futures whether in terms of education or career or a family. We fix our goals and we then have a purpose to fulfil our goals. Morality, I argue, is connected to this purposiveness. Morality is not only formed by past experiences but is also to do with our projections into the future and our concept of progress.

In morality the objective and the subjective are united. From the subjective stance we are aware of goals to be achieved, purposes to be fulfilled. Moral codes, I have argued in the last chapter, come from our ability to perceive patterns in our behaviour which lead to moral truths: morality supervenes on objective facts about the world. This is true for interactions between humans, but also for interactions between humans and non-humans. There are facts about nature and there are facts about the well-being of humans. Science informs us of what aspects of nature are necessary to our well-being. As well as the facts from science, we have the means to envisage ourselves as better people, to be able to live more harmoniously with other people and to be able to create a better environment. We possess concepts that are concerned about improving ourselves, our social relationships and the ways in which we live. By reason and insight we can find moral truths that can bring about the reality of our projections into the future.

Although circumstances may confine us, we are free to make what we can of those circumstances, whether to be overcome by them or to make the best of them. The concept of the human as free within the moral sphere is an important one. We need to hold to the belief that we are free to take the moral path whatever our situation: neither genes nor social environment determine our moral behaviour. Our futures are open to us: we can create goals and progress towards those goals. The desire to achieve these goals gives us purposes. Ultra-Darwinism and postmodernism limit the concept of morality. Neither account for the fact that morality is concerned with the future and with progress that can take us beyond the limits of our present situations.

When dealing with environmental problems we need to free ourselves from determinism in morality: morality is not the result of natural selection. At the level of human civilization where morality arises we have gone beyond biological selective processes. It is to do with our capabilities of reasoning and projecting to the future. Morality transcends cultural perspectives: for morality to be morality is for it to be universalising. Morality is concerned with every human in every situation or culture. True morality brings into play obligation that requires a deeper commitment to action than pure practicality requires: it is not to do with consensus of opinion.

Purpose and progress are linked. If we cannot progress in any area of knowledge then there would be no purpose in undertaking any attempts to gain knowledge. Knowledge would become merely description of our present situation, one that could have an explanation in historical terms – how we arrived at this particular stage of knowledge – but not one that could help us to move forward. In matters of the environment it is important to accept the possibility of progress; otherwise there will be little motivation for action. I am not condoning the sort of

concept of progress put forward by Comte and the French intellectuals of the 19th century, nor that of Spencer's evolutionary progress, nor unbridled economic and technological progress. But I am referring to a belief in progress in the sense that, however prone to errors, humankind can have a more enlightened set of values. We can move forward to a better world than we have now:

Yet there is no reason to reject belief in the desirability or the possibility of many of the strands in the notion of progress. We can in some measure mould our own future, and to do so we need whatever understanding of nature and society we can come by, combined with a moral vision of states of society and of the world which would count as better than the present ones, and such grounds as there are for hope that we can move towards them.⁵⁰

We need a goal of a better way of humans living with nature and the belief that we can progress towards that goal. Morality is concerned with those goals. However, morality is not simply to do with consequences, for then the consequences become more important than the acts themselves. Each act should be decided upon as one that will help bring about a better state of affairs. If we want a society in which we can trust one another, then we should never deceive one another. The final goal will be a better world for all and each act is a move towards that goal.

Humans are purposeful beings at many levels. We set ourselves goals whether these are at the level of basic survival, for example to seek for employment for the purpose of earning money, or at a higher level as in education for the purpose of a worthwhile career, or in political movements for the purpose of changing society. However, in the realm of morality purposes are beyond the individual or even the

⁵⁰ Attfield, R. *The Ethics of Environmental Concern*. 2nd edition. Athens: The University of Georgia Press, 1991. p.83.

social group. The purposes of morality are concerned with the well-being of humanity at large and even the well-being of non-humans and all of nature. This ability for humans to have purposes transcending themselves is unlike anything else in nature. This gives humans a unique and important position in nature.

Not only in our own lives do we find purposes to fulfil, but we also perceive purposes within nature. There may not be purposes in nature itself. Following Bacon's scientific method final causes have been eliminated from the scientific study of nature, but nevertheless humans are still compelled to view nature as having purposes. We can link the concepts of function and purpose when we observe nature. I refer back Philippa Foot's link of function and purpose to evaluation:

In favour of this there is the fact that a certain network of interrelated concepts such as *function* and *purpose* is found where there is evaluation of all kinds of living things, including human beings. It is possible of course that the meaning of words such as 'function' or 'purpose' should diverge when used in speaking on the one hand of characteristics and operations of plants and animals and on the other of those of human beings. But it seems significant that there is a special form of explanation- teleological explanation – to which the idea of function and purpose is related in each case.⁵¹

The purpose that we see in nature where we link purpose to function is the awareness of purpose that comes from our own level of consciousness. The things of nature just are, living according to the needs of survival: they have no goal or purpose. However, humans can perceive that parts of nature are the way they are because they achieve some purpose, whether it is for the ecological balance of nature itself or for the well-

⁵¹ Foot, P. *Natural Goodness*. Oxford: Clarendon Press, 2003. p. 40.

being of humans. Trees have the purpose of maintaining the balance of carbon dioxide and oxygen in the atmosphere which benefits all living things.

We can link nature, humans and value together if we claim that value comes into being where humans perceive that something has a purpose for achieving a particular goal. Therefore trees have value for humans and nature as a whole because they have the purpose of maintaining the right type of atmosphere for life. The function of the particular gives the purpose for it within the whole. The reflective human may further search for the purpose of the whole. We are beings who interpret the world around us in terms of purposes. Humans alone perceive this purposefulness in their own lives and in nature.

Science has been opposed to final causes and so has lessened the role of purpose in nature. In my brief history of the concept of nature I showed how the move has been away from teleological explanations. But this has caused a problem about values. It is teleological explanations that give value both to humans and to nature. Teleological explanations give a role to humans within nature, because humans have the purpose to care for nature. This is certainly true of many religious explanations of humans, for example the stewardship tradition in Christianity. In a Christian teleological framework humans have been given the Earth to care for it and bring it to fruition. The Earth is not perfect; nature is not in harmony. But the human has the ability to conceive of the perfect and to desire harmony. It is the role of humans to work towards the goal of perfection and harmony. That would mean that we need the facts of science to understand the world about us in order that we are able to strive towards that perfection and harmony. We are not here to be victims of evolutionary forces: we are here to make possible a greater good. That is our purpose.

The facts of science may need to be fitted into a broader metaphysical picture, one which supports a teleological view of everything. This may seem unsettling to pure Darwinians, but not to those of a religious inclination. Perhaps religion has some role to play in our lives. It is a difficult one to tackle for a Darwinian, as can be seen from Dawkins' satisfied acceptance of atheism:

Although atheism might have been *logically* tenable before Darwin, Darwin made it possible to be an intellectually fulfilled atheist.⁵²

However, Michael Ruse has argued for the possibility of being both a Darwinian and a Christian in his book *Can a Darwinian be a Christian?* He does not see them as mutually exclusive:

Can a Darwinian be a Christian? Absolutely! Is it always easy for a Darwinian to be a Christian? No, but whoever said that the worthwhile things in life are easy? Is the Darwinian obligated to be a Christian? No, but try to be understanding of those that are. Is the Christian obligated to be a Darwinian? No, but realize how much you are going to forswear if you do not make the effort, and ask yourself seriously (if you reject all forms of evolutionism) whether you are using your God-given talents to the full.⁵³

Ruse speaks for Christianity when he shows that there is no conflict between religion and science: Darwinism does not entail atheism. However, his defence of Christianity against scientific atheism could be one that could be used for all religions and for any teleological philosophy.

⁵² Dawkins, R. *The Blind Watchmaker*. New York: Norton, 1986. p. 6.

⁵³ Ruse, 2001. op. cit. p. 217.

Science is wary of teleological explanations because these types of explanations take us into the realm of speculative metaphysics which is a highly uncertain area of knowledge. However, science itself is not adverse to highly speculative theories, for example string theory or theories that rely on multiple universes.

In environmental philosophy we are concerned about giving value to nature. A non-teleological explanation, as science offers today, cannot give value to nature, but a teleological explanation can. The problems of the environment have forced us to re-examine our place within nature. We can no longer be complacent about ourselves and our intellectual abilities. Environmental philosophy leads us eventually to question our very beings. Science cannot give the answers, for it was never the task of science to do so. That science works within a non-teleological framework does not imply that our understanding of ourselves and the world about us should be within that same non-teleological framework. When we are seeking for values we are led to a teleological explanation of humans and nature.

Conclusion

Environmental philosophy prompts questions about value, the nature of our being and what we understand to be nature. The deeper level of questioning leads to metaphysical problems. In the absence of any formed system of metaphysics, environmental philosophy flounders as much as any other area of philosophy today. Searching for solutions to problems at a metaphysical level cannot be merely creating 'worldviews': we are concerned with questions about reality. Metaphysics today needs to unite the objective and the subjective – the world that we call 'nature' and our own experiences within the world. We need to accept a reality that includes the objective knowledge from science, as well as other areas of knowledge, and subjective experiences that include the religious and spiritual:

The materials with which metaphysical construction can be done are not to be lifted directly from science or religion, though both are intimately related to the project. These quests for reality are of great importance. They each rest on and thematize immense foundations of experience of different sorts. Each demands respect: science for its explicitness and precision, religion for its qualitative depth and pervasive power.¹

Although to venture forth into a metaphysical project may be daunting, it cannot be overlooked. We require firm foundations in metaphysics if we are to be able to find an ethical theory that will give guidance not only to interpersonal actions but also to the actions between human and non-human. Knowledge from science is not sufficient for this task. There are many areas of human experience that need to be seriously

¹ Ferré, F. *Being and Value: towards a constructive postmodern metaphysics*. Albany: State University of New York, 1996. p. 378.

considered and included within a metaphysical system, such as morality, free will, purpose and inspiration:

In addition, metaphysical construction needs to be open to other forms of experience of all kinds. Moral experience with its great intuitions of obligation, responsibility, good, and right, needs to be included with respect. Other personal experiences such as freedom purpose, love, limits, aspiration, possibility, and creativity are resources as well.²

It is not the province of science to explore metaphysical issues, nor can philosophers wash their hands of this immense task, or feel a weariness of trying to find a total view of reality. Environmental problems require that we seek solutions.

Part of the task of environmental philosophy is to find a theory of value. This is only viable if we accept the possibility of objective values which rest on the possibility of objective knowledge. I have argued for both in Part III. The success of science reaffirms our confidence both in our use of reason and the possibility of objective knowledge. Having affirmed our confidence in science we can also be certain of other areas of knowledge and our use of reason, as reason is a prerequisite for the scientific enterprise. We can then proceed to use our reason in the search for objective values. In Chapters 1 and 2 of Part 3 I showed that a total scientific approach to finding value in nature is inadequate and that a postmodern approach results in confusion. The metaphysics upon which they rest (although not always completely formed) is not sufficient for forming a theory of value, at least not one that links humans to nature.

² Ibid. p. 378.

Environmental philosophy is also required to give a theory of human nature.

Postmodernism is against any totalising concept of human nature and so abandons the task. A scientific account of human nature omits too much of the important areas of human experience. A reductionist explanation of humans reduces many central human experiences to mere illusions. Subjective experiences, such as free will, responsibility, inspiration and purpose, are not given enough weight within the reductionist scientific account. Science can provide valuable information about the world and ourselves within it, but it is not the only way of understanding the world. Mary Midgley argues against Dawkins' remark that 'science is the only way we know to understand the real world' in her book *Science and Poetry*:

Dawkins makes it plain here that the kind of science he means here is essentially just particle physics. But the world which we need to understand – the world we actually live in – is in the first place a perceptual and social world, a turmoil of lights, colours and noises, love and hate, danger and hope, friends and enemies, plans and despairs. It has to be this kind of world because we are not pure observers, but social animals of a particular species.³

A theory of human nature has to take into account the human condition and the social situations in which we find ourselves. It also needs to account for our fears and hopes, our dreams and aspirations. Much of the human condition is to do with the future. We stand in the present, not just formed by the past events, but with an awareness of the future and what we expect and wish from it. We have goals given to us ('do well in your school exams') or we form them for ourselves ('I want a good, fulfilling career'). These goals give us purposes to be fulfilled and influence our every waking hours. It is not from where we have come that so engages us but where

³ Midgley, M. *Science and Poetry*. London: Routledge, 2001. p. 141.

we are going. The individual who does not have goals and purposes (even if they are ones imposed upon a person), falls into depression or, at least, is motivated by little. Both the Ultra-Darwinian account of human nature and the postmodern approach to human nature lack the acknowledgement of the importance of the future to humans. They are historical accounts, whether in terms of evolutionary theory or in terms of cultural and political movements. I showed in Part II how the combination of these two types of historical account of human nature leads to human inertia. A theory of human nature, particularly when we are concerned about the future of the planet, needs to include human goals and purposes.

Andrew Brennan first stipulated that environmental philosophy requires a theory of nature, and that a theory of nature, a theory of human nature and a theory of value should all be linked. In ancient philosophy there were two major explanations of nature: teleological and non-teleological, as I briefly outlined in Part I.

Teleological explanations are found in the philosophies of Plato and Aristotle, as well as in the philosophy of the Stoics. The teleological explanation gained strength under Christianity throughout the medieval period. There were also non-teleological explanations of nature in the ancient world which were eventually most fully formed in the philosophy of the Epicureans. Non-teleological explanations regained credibility after the rise of science as they fitted well with the exclusion of final causes from science. Teleological explanations were eventually only accepted by those who had religious beliefs.

However, non-teleological explanations of nature have problems in finding value for nature as well as not adequately linking humans to nature. The non-teleological explanations in science regard humans as entirely a part of nature and that humans can be explained in objective terms much like any other part of nature. This

means that some fundamental areas of human experience are not accounted for and values are reduced to subjective experiences. Science-informed environmental philosophy seeks to find value by means of 'intrinsic value', a value that nature has in itself. However, the term 'intrinsic value' is a confusing one. It can only be credible from the subjective perspective of the valuing individual, where the individual can claim 'I have value for myself'. Thus the term can be applied to humans (subjective experiencing individuals) but it becomes difficult to apply it to non-humans when we see no evidence of the same level of self-awareness as there is in humans except in some of the more sentient non-humans. Intrinsic value admits of no degrees and it would be difficult for humans to live at all if everything of nature possessed intrinsic value. The only way to redeem 'intrinsic value' within nature would be to hold that there was a God that valued each and every part of His creation for itself.

Non-teleological explanations often give a description of nature as harsh and cruel. As Dawkins says in answer to the theories of Ashley Montagu and Lorenz:

Unlike both of them, I think 'nature red in tooth and claw' sums up our modern understanding of natural selection admirably.⁴

Humans, being a part of nature, are then required to pursue their own individual survival and well-being as the most rational thing to do. The Epicureans of the ancient world encouraged individuals to take care of themselves rather than be concerned about the political and social problems of the day. The following passage from Lucretius, a disciple of Epicurus, sums up the Epicurean attitude:

⁴ Dawkins, R. *The Selfish Gene*. London: Granada, 1978. p. 2.

What joy it is, when out at sea the stormwinds are lashing the waters, to gaze from the shore at the heavy stress some other man is enduring! Not that anyone's afflictions are in themselves a source of delight; but to realize from what troubles you yourself are free is joy indeed. What joy, again, to watch opposing hosts marshalled on the field of battle when you have yourself no part in their peril! But this is the greatest joy of all; to possess a quiet sanctuary, stoutly fortified by the teaching of the wise, and to gaze down from that elevation on others wandering aimlessly in search of a way of life, pitting their wits one against the other, disputing for precedence, struggling night and day with unstinted effort to scale the pinnacles of wealth and power. O joyless hearts of men! O minds without vision! How Dark and dangerous the life in which this tiny span is lived away! Do you not see that nature is barking for two things only, a body free from pain, a mind released from worry and fear for the enjoyment of pleasurable sensations.⁵

In the face of all the cruelties of life, the Epicureans extolled the virtues of the individual pursuing his own life free of pain. For the Epicureans a natural life was one without pain and therefore the individual's only concern was to seek a life of tranquillity, free from the concerns of the world. There are certain parallels between the lifestyle encouraged by the Epicureans and the lifestyles fashionable today under the influence of an extreme form of Darwinism (echoing the Social Darwinism of Spencer) and postmodernism. Both sociobiology and postmodernism promote individualism. The emphasis is on the individual who pursues his/her own lifestyle. Liberty and the rights of the individual are the main political and social concerns. Since the 1970's (and before) the western world has been an individualistic one. The central role of the individual and the individual's lifestyle has fed the consumer society, a fractured society that is given full support by the media and politicians in order that big businesses can flourish. The corollary of an individualistic society is the undermining of communities and socialist political movements. It is not a society

⁵ Lucretius. *On the Nature of the Universe*. Translated by R. E. Latham. Revised with an introduction and noted by John Godwin. London: Penguin Books, 1994. p. 38.

which can bring about motivation for solving environmental problems. Buying 'green' becomes another fashionable trend to put money into the enterpriser's pocket. What is required for an environmental movement is that humans recognize their dependence on one another and their dependence on nature. This would require a global community, one in which the poverty of the nations outside the west would be of more concern than the convenience of using a personal vehicle for getting to work.

Teleological explanations underlie the philosophies of Plato and Aristotle and the Stoics. The assumption in these philosophies, although they differ from one another in several ways, is that the universe is an orderly structure. The notion of order is combined with the notion of goal and purpose. Humans are rational creatures who by use of reason can discover the underlying order. *Logos*, reason or law, is important in Stoic philosophy. The Stoics posited a cosmic principle that was not only intelligible but also intelligent. Of much importance today for environmental philosophy is the Stoic's idea that all things are interdependent. In Stoicism to be a good and happy man is to be related in a certain way to Nature or God. Although the individual is not forgotten in these systems of thought, the emphasis is more on the place of the individual within the whole society and also nature. Each individual has a purpose within the whole system and is a necessary component in the successful functioning of every area of human activity. This gives the individual certain responsibilities. Christianity and other major religions present a similar call on the individual to take a responsible role within society. In Stoic philosophy co-operation is emphasized as the key to human relationships:

The Stoic philosophy of Nature provides a cosmic orientation for personal identity which far from neglecting human relationships makes them implicit in life according to reason. 'We have come

into being for co-operation'. (Marcus).⁶

Certainly if we are to solve the problems of the environment humans will need to be motivated to co-operate.

A teleological explanation of nature, particularly one within the Christian faith, emphasizes the beauty and goodness of nature. Alister McGrath refers to the sense of wonder that a Christian experiences when observing nature;

One of the central themes of Christian theology is that the creation bears witness to its creator: 'the heavens declare the glory of the Lord!' (Psalm 19:1). For Christians to experience the beauty of creation is a sign or pointer to the glory of God, and is to be particularly cherished for this reason.⁷

As the first part of my thesis revealed, Christians have had a tradition of perceiving nature as a bountiful gift from God.

Although I neither wish to endorse wholly the philosophies of Plato, Aristotle and the Stoics (I would, for example, question the determinism within Stoicism), nor any religion, I have come to the conclusion that teleological explanations of nature have certain advantages over non-teleological explanations of nature within environmental philosophy. Teleological explanations can successfully link a theory of nature, a theory of human nature and a theory of value. The emphasis on the future in teleological explanations can give humans a moral direction to care for nature for the future good of both humans and nature. Teleological explanations also provide

⁶ Long, A. A. *Hellenistic Philosophy: Stoics, Epicureans, Sceptics*. 2nd edition. London: Duckworth, 1986. p. 163.

⁷ McGrath, A. *Dawkins' God: genes, memes, and the meaning of life*. Oxford: Blackwell Publishing, 2005. p. 149.

strong motivation for people to act because they emphasize the individual's purpose within the striving for the good of all.

Environmental philosophers have argued that humans once lived in harmony with nature in some 'Golden Age', but that this harmonious relationship has been lost. I argued at the beginning of my thesis that harmony never existed between humans and nature, neither is it in nature itself. But humans have a concept of order and harmony and these concepts are strong in teleological explanations. The attainment of harmony between humans and nature is the future towards which humans should strive, for what we require at the moment is that we reach a balance between ourselves and nature. The knowledge we gain through science combined with the insights that religion and philosophy bring can help us towards understanding what we should do in our relationship to nature to attain that harmony. This may require control of nature to a certain extent, but we should also seek the wisdom to know when it is best to allow nature to be left outside our control. The concept of future harmony can give the guideline for how we should value nature. Each part of nature will be seen to have a function and purpose towards that goal of harmony. Thus trees have value because their function and purpose is to keep the balance between carbon dioxide and oxygen in the atmosphere; bees and other insects have value for the function and purpose of pollinating plants; flies and other creatures have value for their function and purpose of decomposing of waste matter; and many other creatures and plants will be found to have important purposes to keep the balance of an ecosystem.

A part of the future harmony will be that humans should live together in co-operation and not in competition with one another, as well as not over-exploiting nature. Humans have the purpose of understanding nature, to perceive what is good

and what is bad in nature, and for acting as stewards towards nature. The tradition of stewardship fits well into a teleological explanation, as indeed it was within a teleological explanation that the concept of stewardship was first formed. Science can provide the information of what we require from nature for our own well-being, and philosophy and religion can provide the deeper metaphysical structures in which humans can find the motivation to co-operate with one another.

Philippa Foot in her book *Natural Goodness* argues for natural goodness from 'Aristotelian necessities':

These 'Aristotelian necessities' depend on what the particular species of plants and animals need, on their natural habitat, and the ways of making out that are in their repertoire. These things together determine what it is for members of a particular species to be as they should be, and to do that which they should do. And for all the enormous differences between the lives of humans and of plants or animals, we can see that human defects and excellence are similarly related to what human beings are and what they do.⁸

Human beings are valuing creatures who live in social situations and who need a healthy environment and a fruitful nature. We are beings that are as much, or even more, concerned about our futures as of our pasts: we are motivated by goals and seek purposes in life. When we seek a metaphysical basis for environmental philosophy we need to consider the importance of meaning and purpose in people's lives. The major religions have always been concerned with this larger metaphysical picture. A metaphysical basis for an environmental philosophy requires that knowledge both from science and religion should be included in the account. Concerns about nature promote the deeper reflections on what humans are and what

⁸ Foot, P. *Natural Goodness*. Oxford: Clarendon Press, 2003. p. 15.

role they have towards nature. Without people having a sense that they are part of a larger whole they will not be motivated to care for nature.

In conclusion, we need to hold to the clarity of our reason and the possibility that through our reason we can obtain objective knowledge and objective values. Only in that way can we underpin our scientific knowledge (including evolutionary theory and the solving of the problems in quantum physics) as well as guarantee that it is possible for us to discover objective moral values that are true for all people for all time. These moral truths will not only be about the way we should behave towards one another, but also about the way we should behave towards nature. The concepts of order and harmony can guide us.

The future may look bleak to some with the present political upheavals and the increasing environmental disasters. But the Epicurean way of seeking our own tranquillity within a disturbing situation would be disastrous. Rather we should accept our role as that part of nature that can rise above our own individual comforts and our own wish for individual survival. We should understand ourselves as a part of a global community in which each of us has a part to play, sharing similar values, to bring about peace and harmony with one another and with nature.

In the past two hundred years or so, we have steadily moved towards non-teleological explanations of nature and ourselves. With the deeper reflection that has been brought about from trying to find value for nature and how to motivate people to care for nature, it may be time to reverse that process of thought. A re-examination of teleological explanations may be the way to go in order to link together a theory of nature, a theory of human nature and a theory of value.

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