Teilhard De Chardin as Response to Modernity's Nature-Human Dichotomy in Environmental Ethics

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“The world is but a canvas to the imagination” – Henry David Thoreau

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Abstract:

Modernity as a philosophical and intellectual movement has cultivated a perspective of humanity as separated from nature. In modernity, nature is valuable only insofar as it has instrumental value (i.e. that it may be utilized for the benefit of humanity). This study postulates that such an approach to the nature-human relationship may have led to considerable environmental damage and misuse, and that the perspective of humanity as separate from nature should be re-evaluated.

Pierre Teilhard de Chardin's philosophy is investigated as a possible means to overcome this dichotomy. De Chardin describes varying ontologies that are embedded in the evolutionary process and against which all human relevance and action must be sketched. This differs from an evolutionistic approach, because whilst engaging with scientific discourse (which tends to be reductionist in approach), De Chardin also incorporates spiritual and religious ideas and perspectives. Furthermore, De Chardin's ideas differ from vague pantheism, irrationally or mystically formulated, because he engages with the terminology used in modern science and re-evaluates this terminology's application and conclusions in relation to his newly developed cosmology (or cosmogenesis).

Several questions are central in this study: Firstly, could De Chardin's approach be incorporated into the natural scientific discourse? Secondly, does De Chardin's cosmology provide new avenues for investigation into a closer and more sustainable relationship between humanity and the natural world? In this study it is postulated that De Chardin does make a contribution to a more sustainable relationship between nature and humanity through his perspective of a holistic ontology that differs from simple mysticism and his postulation of the noosphere, which leads to a new evaluation of humanity's technology use.

Key concepts:

Environmental ethics, Modernity, Nature-human dichotomy, Pierre Teilhard de Chardin

Opsomming:

Moderniteit as 'n filosofiese en intellektuele beweging het 'n perspektief van die mensdom as geskei van die natuur laat ontstaan. In moderniteit word die natuur as waardevol gesien slegs as dit instrumentele waarde vir die mensdom het (d.w.s. as dit gebruik kan word tot voordeel van die mensdom). Hierdie studie voer aan dat so 'n benadering tot die natuur-mens verhouding moontlik tot aansienlike skade in die natuur gelei het. Dus moet die perspektief van die mensdom as geskei van die natuur herevalueer word.

Pierre Teilhard de Chardin se filosofie word ondersoek as 'n moontlike wyse om hierdie digotomie te oorkom. De Chardin beskryf verskillende ontologieë wat as deel van die evolusionêre proses ontwikkel en waarteen alle menslike betekenis en dade geskets moet word. Dit verskil van 'n streng evolusionistiese benadering, want terwyl die wetenskaplike diskoers (wat geneig is om reduksionisties van aard te wees) as basis gebruik word vir sy filosofie, sluit De Chardin ook geestelike en godsdienstige idees en perspektiewe in. Verder, De Chardin se idees verskil van vae panteïsme wat irrasioneel of mistiek geformuleer is, omdat hy die terminologie van die moderne wetenskap gebruik en op so wyse mistieke panteïsme herevalueer met betrekking tot sy nuut-ontwikkelde kosmologie (of kosmogenesis).

Verskeie vrae is sentraal in hierdie studie: Eerstens, kan De Chardin se benadering deel vorm van die natuurwetenskaplike diskoers? Tweedens, bied De Chardin se kosmologie nuwe geleenthede vir die ondersoek na 'n meer volhoubare verhouding tussen die mens en die natuurlike wêreld? In hierdie studie word voorgestel dat De Chardin wel ‘n bydra maak tot ‘n meer volhoubare verhouding tussen die mens en die natuur deur sy ontwikkeling van ‘n holistiese perspektief op die realiteit en sy idee van die noosfeer, wat ‘n nuwe evaluering van die mens se tegnologie toelaat.

Belangrike konsepte:

Moderniteit, Natuur-mens tweespalt, omgewings-etiek, Pierre Teilhard de Chardin

Table of Contents

CHAPTER 1: INTRODUCTION

"Those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts. There is something infinitely healing in the repeated refrains of nature – the assurance that dawn comes after night, and spring after winter" (Rachel Carson, Silent Spring)

Humanity has never been able to integrate and access information more easily than in the current epoch. Technological advancement has heralded a new age, an Information Age, wherein the creation and exchange of information has taken a prominent role in the life of all individuals. The Internet, *Google*, *Facebook*, *Twitter*: These words have entered the cultural lexis to describe innovative ways of connecting people of different social spheres, cultures and widely separated geographic locations. Humanity is living in a virtual village, a global village that extends across the surface of the Earth which allows people to communicate with astonishing ease and swiftness. This interconnected village and the easy availability of information has made individuals more aware of global issues, including the possible negative influence that humanity has on the natural environment. We are becoming increasingly aware that whilst nature may persevere for many more "refrains", as eloquent described by Rachel Carson in the quote above, it will not necessarily persist in a way that can sustain continued human life.

The awareness that nature may not be able to sustain continued human life did not begin with the current Information Age; indeed the ease of information exchange has merely caused a more prominent mindfulness by providing a forum for individuals to discuss environmental issues. The 1970s saw the first formulation of *Environmental Ethics*, a field of ethics that regards centrally not humans, but non-human creatures and the natural environment they inhabit. This field suggests moral approaches for dealing with such non-human entities and systems in response to the misuse and damage of the natural environment through irresponsible human action. The public consciousness realized, for the first time, that the latter half of the twentieth century was a period of ecological crisis (Kureethadam, 2003:62). Popular documentaries like Al Gore's *An Inconvenient Truth* (2006), and music such as

Muse's album *The 2nd Law* (2012), suggest that this trait is prevalent in modern society and should be challenged. Such documentaries and artistic works indicate that popular culture is dealing with these same issues through intellectual and artistic enquiry. This environmental crisis affects not only humans, but rather all living things. However, it would be a mistake to presume that deliberation and evaluation of the natural world only became prominent in the last century. Indeed, the history of philosophy presents a veritable menagerie of perspectives of the natural world and the relationship that exists between it and humanity.

Nature has been investigated variously in the history of philosophy, but rarely in relation to the modern idea that humanity may in some way irrevocably damage nature. Natural philosophy refers to the philosophical study of nature and the physical universe that was prominent before the rise of modern science. Plato (429-347 B.C.), for example, describes natural philosophy as a theoretical rather than practical branch of philosophy in *Charmides*. Later philosophers, such as Descartes who developed Cartesian Dualism, describe two substances in the world. These are matter and mind, the former being deterministic and natural, whilst the latter is volitional and non-natural. However, a responsible relationship between humanity and nature has not been a central focus throughout the history of philosophy due to the fact that humanity did not have the power to damage nature on the massive scale that occurs today through pollution and natural resource misuse.

Even before the dawn of philosophy there existed a multitude of religious views on humanity's place within nature. These sometimes took the shape of Earth or Nature gods or goddesses in older "nature" religions. Christianity also postulates a specific relationship between nature and humanity, presented in Genesis as God's original cultural mandate. In the Biblical view, nature was created by God as fundamentally *good*. The original cultural mandate states that human preservation and cultivation of the natural world is a Christian duty. The Christian approach towards nature is encapsulated in both God's creation and salvation through Jesus Christ. In Christian ecotheology, salvation through Jesus Christ is not simply understood as salvation *from* creation, but rather the salvation *of* nature. Ernst Conradie claims, however, that the history of Christian theology does not present a record of doing justice to both creation and salvation in its consideration of nature (Conradie, 2012:1). Some major religions, such as Judaism, postulate ideas of inherent interconnectedness

between humanity and nature. However, other religions present a variety of approaches. Islamic tradition, for example, presents laws that foster the integrity of biodiversity, as well as other laws that present a utilitarian nature-human relationship (Msafiri, 2007:53). These examples illustrate that religious approaches present a long tradition of formulating specific ontologies regarding humanity's place in nature.

Nevertheless, as stated in the previous paragraphs, the 1970s saw the rise of a new sense of responsibility towards the natural environment through the rise of environmental philosophy. This sense of responsibility is important in the current age of environmental crisis because ideas concerning nature, or more specifically how one perceives the relationship between humanity and the natural environment, will invariably affect whether one wishes to protect the environment or whether one is content to misuse it.

This first chapter will identify the central research question of the study in view of this introductory synopsis, followed by a hypothesis statement and a contextualization section. The chapter ends with an identification of the study approach and with a personal note regarding this approach, including the scope of the broader study.

1.1. Research question

Several approaches have been suggested to protect nature from unconstrained development and misuse by humanity, especially from the varying fields of the *Environmental Sciences* and *Environmental Ethics* that have developed in the past few decades. This study presents an attempt to expand and develop elements of these approaches, and to make a novel contribution in these fields by suggesting a more sustainable relationship between humanity and nature. This study will endeavour to integrate the work of Catholic thinker, palaeontologist and philosopher Pierre Teilhard de Chardin (1881 - 1955) with the current discourse on environmental issues. It is postulated that De Chardin's perspectives could potentially make a contribution to this discussion. The research question of this study is therefore formally stated as follows: **Could De Chardin make a worthwhile contribution**

to environmental ethics, specifically by allowing a new evaluation of the nature-human dichotomy in a way that differs from the dualistic perspective that was developed in modernity?

This central research question prompts several further questions which will also be investigated in this study. These questions include:

1) Why is the nature-human dichotomy in **modernity** a problem for sustainable environmental ethics?
2) In what ways does **De Chardin** provide an alternative to this nature-human dichotomy?
3) To what extent does De Chardin provide an alternative approach to the broader **environmental** ethics discussion?

A variety of further sub-questions will also be discussed during the course of the study, but these main questions will serve to limit the study's scope. The intention of the study is therefore to introduce and evaluate De Chardin's work within the specific context of environmental ethics. De Chardin's specific relevance to this field will be discussed later in the study.

1.2. Hypothesis

This study focuses on themes that each deserve individual academic studies in their own right, namely *modernity's nature-human dichotomy*, *De Chardin's philosophy* and *environmental ethics i*ssues. This study in no way pretends to provide a comprehensive treatment of each of these subjects, but instead focuses on the unique link that is postulated between each of these (seemingly) disparate topics. The goal is therefore rather to engage with the broader question of De Chardin's possible contribution to the dilemma of the nature-human dichotomy cultivated in modernity, and the application thereof in environmental ethics. The position is therefore taken (formulated as a hypothesis) that: **De Chardin's philosophy does, to a significant extent, overcome the nature-human dichotomy that**

developed in modernity and provides an alternative formulation of this nature-human relationship which may lead to a more sustainable environmental ethic, thereby addressing some serious environmental problems that have philosophical roots in modernity.

The definition of "sustainable", in the context of environmental ethics, links to a variety of ideas and concepts. No single definition is universally accepted, and some even dismiss the idea of "sustainability" as unattainable.[1] However, in this study it is postulated that a degree of sustainability could be reached in the human interaction with nature; this "sustainability" is specifically understood as formulated by the Brundtland Commission of the United Nations which stated that sustainability "is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UN, 1987). The *World Summit on Social Development* (2005) added that this view implies reconciliation between the *natural environment*, *social equity* and *economic demands* (UN, 2005). When used in the context of this study, the word "sustainable" may therefore be best described as a longer term viable approach towards nature, in contrast to the "burn-and-pillage" approaches of modern neo-capitalism which are often camouflaged as "sustainable development". Although not dismissive of the broader debate on the sustainability question, this study will argue that the direction of development in the modern Western world does not show a responsible approach with regards to nature and that this irresponsibility calls the future of humanity's interaction with nature into question (i.e. the interaction is not sustainable). However, it is held that a more responsible and sustainable approach is possible, and that De Chardin's philosophy could encourage such an approach to a large extent.

One must add to the main hypothesis of this study that De Chardin's philosophy is not, however, without its own problems and critique. Some of these points of criticism will be discussed in later chapters, including possible defences from De Chardin's work against such

[1] Loubser, for example, states that the "general opinion in the West seems to hold that 'nature' must be conserved in such condition that minimum human ecological survival is possible, but at the same time 'culture' should be developing to make increasing 'quality of life' a possibility" (2005:4). She states that traditional views of sustainability attempt to intertwine these dialectic opposites, but a harmonious resolution seems unlikely.

critiques. The continued relevance of De Chardin's philosophy to environmental ethics will thus be highlighted and in the last section of this study his work will be appropriated in the field of technology (specifically communication network technologies and social networking). Especially here the creative and unique contribution of De Chardin will be made clear. De Chardin's philosophy does, in other words, present some possibility to overcome the nature-human dichotomy, but also challenges contemporary views on communication technology and social phenomena in relation to environmental ethics questions present in our society to generate a different perspective on the nature-human relationship. As will be explained in the later sections of this study, such a new evaluation of existing technologies and the role that it plays in our societies may have very positive consequences regarding a more sustainable approach towards nature.

1.3. Research methodology

A literature review will be utilized as method of research for this study. Various resources will be analyzed and synthesized according to the research question. Recent studies on environmental ethics and the philosophy of De Chardin will be the main focus. In both cases only certain sources will be selected and this selection will be motivated in the study. It is not possible to be comprehensive in the focused scope of this study and the aim is to focus on the most influential sources in this regard.

The relevant sources will be evaluated and critically discussed in the study. An attempt will be made to creatively synthesize and structure these sources, as well as my own view, with the aim of answering this study's research question. These ideas will then be contextualized and evaluated with regards to the work of other relevant philosophers.

The research will therefore focus specifically on how De Chardin's philosophy relates to environmental issues and will attempt to creatively appropriate and integrate his thought with current environmental issues and ethics. The intention is not to relate it to a list of different individual issues, but to relate it to environmental issues in a more general sense (as explained later on).

An important question that arises during the study and when dealing with the work of De Chardin concerns questions on the relationship between secular and religious approaches with regards to the world. This aspect must be clarified because it has an influence on the research methodology and approach of this study. For this reason my personal interest in the study will also be mentioned. A note on terminology and scope of the study is also appropriate here.

The relationship between secular and religious approaches

This study will attempt to relate De Chardin's philosophy to environmental ethics issues by suggesting a re-evaluation of the ontological perspectives that form part of the worldview that is engendered in modernity (particularly with regards to the relationship between humanity in nature, a relationship that is considered fundamentally separate in modernity). Questions on the relationship between secular and religious approaches with regards to the world arise when dealing with the work of De Chardin. The contemporary Western environmental ethics discourse may be categorized as mainly secular, even though religious thinkers are currently also making important contributions to the field.[2] However, the prominent secular slant of the environmental ethics discourse is possibly due to the high degree of social and political relevance that is inherent in it. The discussions in the field of environmental ethics are not just theoretical exercises; they are used by politicians and policy makers to make communal decisions regarding the environment in multicultural and multi-religious societies. In these contexts the secular approach appears to be a sensible middle-ground from which to approach environmental questions.

If the "secular approach" is seen to be more sensible, the question must be asked of why De Chardin, who is considered a religious thinker (at least partially), has been chosen as the main focus of this study. This question can be answered in different ways and the reasons will be presented later in the study, especially in the section dealing with possible contributions that De Chardin could make to overcome the nature-human dichotomy. To emphasize the relevance of De Chardin's philosophy in the context of secular environmental

[2] See in this regard, for example, the works of E.M. Conradie, especially *Creation and Salvation – Volume 2: A Companion on Recent Theological Movements* (2012), *Redeeming Creation* (1996) by F. van Dyke *et al*, or the works of B.J. van der Walt.

ethics I will interpret and appropriate his work utilizing secular and humanistic criteria. The intention is to link his whole system of ideas, also the religious or mystical elements, to problems in a secular framework. I argue that such an approach, rather than an uncritical re-statement of his entire philosophy (which includes mystical ideas), is the only way to sensibly and relevantly contribute to the current environmental ethics debate. This approach should not be understood as simply attempting to "play the drums" of De Chardin's philosophy to a secular tune. Rather, my personal view is inherently that the current approaches with regards to environmental ethics are insufficient to an extent and that the appropriation of insights from De Chardin's work might help reframe the discourse in a way that is beneficial for both humanity and nature. Such a requisition is not possible, or it is at the very least restricted in its implementation, if his ideas are considered solely from a religious perspective.

Personal interest

My personal approach in this study is influenced by both personal spiritual and religious views and my natural scientific training in biochemistry and genetics. Whilst my own spiritual convictions will obviously play a role in how the study is approached, the success of the study will inevitability be measured according to the secular and humanistic criteria that is predominant in the public and academic discourse on environmental ethics. Therefore, although I have an affinity for De Chardin's religious convictions in my own spiritual views, I will attempt to utilize a more secular interpretation of De Chardin's thought. This interpretation is done in an attempt to unravel some of the problematique faced by modern environmental ethics. However, the intention of this study is not one-directional and the secular discussion will hopefully form a springboard to further discussions that may be more religious and spiritual in nature (in line with the approach that De Chardin's takes). A further aim of this study is also for this current discourse to go beyond the scope of the secular environmental ethics debate.

The relevance of incorporating religious, mystical and scientific approaches in this study (elements which form part of De Chardin's work) can be motivated as follows: Many authors state that it is important to emphasize that environmental problems are not merely of political, scientific or social character and instead relate directly to fundamental worldviews

and ethical stances. O'Hear, for example, emphasizes that an individual's stance on environmental issues reflects basic philosophical and ethical commitments (O'Hear, 2011:vii). Aidan G. Msafiri states that ecological problems "embrace an ethical dimension" (2007:85). These statements imply that environmental issues do not simply form a part of governmental or legislative spheres, but rather that one should look towards engaging the individual with environmental issues. I am in agreement with Msafiri when he states that the worldwide damage to the natural environment requires deep re-evaluation and reflection on human actions and personal worldviews if humanity is to redress matters (Msafiri, 2007:85).

Terminology

The terms "destruction of nature" and "human destruction" are of importance in this study and their individual meanings should be clarified at this point. Often in public discourse there is a tendency to refer to the *destruction of nature* when discussing environmental ethics issues such as pollution or deforestation. This is an inaccurate portrayal of what is actually happening, even though thinkers such as Hannah Arendt, for example, suggest that total obliteration of the natural world is indeed a possibility (Arendt, 1958:2-3,139-140). A better phrase than the *destruction of nature* would perhaps be *human destruction*, for if there are no humans to be sustained by nature, there would be no possibility of perceiving whether nature as a whole could be destroyed. However, such a reformulation removes the centrality of nature from the issues under discussion.

Nevertheless, *human destruction* emphasizes that environmental ethics questions in fact relate more to the number of human generations that can survive the homeostatic changes we cause in nature, rather than whether nature itself could be destroyed (Loubser, 2005:12). For example, the environmental variables (temperature, pollution levels, etc) with which nature could change and still sustain humanity are much smaller than the changes in environmental variables that would lead to nature's destruction. Furthermore, it should be emphasized that humanity is more than capable of misusing nature until the conditions for its continued survival are changed so much that continued human existence is impossible.

Although the phrase *human destruction* will not be used in this study, it is important to note that this is most importantly the issue at stake when investigating the relationship between humanity and nature through critical philosophical reflection. It is hoped that such reflection may influence public debate on the subject, as all too often the focus is placed on *destruction of nature*, rather than on *human destruction*. A small shift in the way environmental problems are described to the public and how related terminology is applied (refer to section 4.1 for more details on this point) may shift the public discourse from complacency regarding the misuse of some external phenomena (nature) to an active revolution of the approaches taken in modern industry and technological development – upon the realization that our basic survival depends on it.

Some other terms used in this study, such as *modernity*, *nature-human dichotomy* and *environmental ethics* will be defined and discussed later in the study.

Scope of the study

From the above discussion it can already be noted that the way in which humanity approaches its relationship with nature will play a fundamental role in both the future development and continued survival of the human race. The current study will investigate this nature-human relationship. At the outset this subject matter seems to place the study in the realm of environmental ethics, but the study is not an ethics investigation *per se*. A large part of the study is devoted to a meta-critique of modernity (i.e. modernism), and later an evaluation of the ontological perspectives presented by De Chardin is conducted. The purpose of this study is, in other words, not to establish a new moral theory with regards to environmental ethics, but rather to reframe the relationship between humanity and nature in the context of modernity on an ontological level. This reframing will have very direct moral implications if one realizes that the way humanity deals with nature has clear influences not only on nature itself, but also on the people making environmental decisions and on other human beings in communities. The question of the relationship between humanity and nature is self-evidently ethical, and the relationship has specific *environmental* ethics implications.

This study will therefore oscillate between several philosophical fields of inquiry. It will begin with a question that may be regarded as part of environmental ethics. It will approach this question in a cultural-critical manner. The fundamental ontological views of a specific thinker (De Chardin) will then be appropriated in an attempt to overcome the cultural problematique. Finally this study will interpret and apply these views in an original way as a possible solution to broader environmental ethics questions. First, however, this study's research question must be contextualized within the broader environmental ethics discourse.

1.4. Contextualization

This study's journey of intellectual investigation begins with questions traditionally asked in environmental ethics; thereafter the study proceeds to other philosophical regions, such as the cultural-criticism of modernity and an evaluation of De Chardin's ontology.

Environmental ethics is one of the applied philosophies that developed formally in the 1970s. Whilst the historical roots of environmental ethics may be traced back much further than the 1970s both implicitly and explicitly in the thought of various thinkers who related their work to the natural world, it is only during this period that environmental ethics established itself in the form we know today. This establishment of the modern form of environmental ethics was due to the reshaping of the environmental movement from an earlier phase in the 1950-1960s, which consisted primarily of natural resource conservation, towards a movement that actively participated in environmental issues on a social and political level (Light & Rolston, 2003:1). The publication of *The Silent Spring* by Rachel Carson in 1963 may have been the catalyst for this shift. The effect of agricultural pesticides, like DDT, on humans, animals, plants and ecosystems were revealed in Carson's publication and a new era wherein environmental issues became much more prominent and urgent was entered (Carson, 1963). The social and political consequences and engagement was clearly indicated by Carson and her book emphasized that fundamental changes were needed in the way that people approached environmental issues – in particular with regards to how humans understood the value of nature and how human societies were organized in light of this understanding (Light & Rolston, 2003:1). Environmental ethics was no longer understood as mere esoteric

conservation of endangered species, for example, but as something that has direct implication for the life world (socially and politically) and survival of humanity.

The causes for environmental problems were diagnosed in a more holistic way at the start of this era. Andrew Light and Holmes Rolston, for example, state that "various figures in this movement courted controversy by diagnosing the environmental crises in the long-prevailing Western, Enlightenment, humanist, scientific, industrial, technological mindsets, and found them all wrong-headed and misdirected" (2003:1,2). Specific symptoms of such Western mindsets and approaches were also indicated, which included things such as pollution, deforestation and escalating consumption. Higher institutions of academia heard the rallying call and marshalled the troops in the form of sociologists, historians, lawyers, economists, philosophers and ethicists. The era of environmental *crisis* had dawned.

Richard Sylvan is often identified as first establishing what we today know as environmental ethics with his inquiry: "Is there a need for a new, an environmental, ethic?" – The title of his 1973 paper (Callicott, 1984:299; Sylvan, 1973:1). Sylvan described his specific approach towards environmental ethics as a quest to develop "an ethic dealing with *man's relation* to land and to the animals and plants which grow upon it" (Leopold, 1966 – my emphasis). The new formulation of environmental ethics was thus about a broad *relationship* between humanity and nature and not about conservation *per se*. Humanity's role in this relationship is enormous in comparison to nature's role, because humanity possesses intellectual faculties capable of evaluating its interaction with nature, whilst nature is possessor only of irrational forces. Humanity can choose not to misuse nature, to not pollute, whilst nothing of the sort could be required of nature. Though such a description is not necessarily perfect (this perspective is criticized as dualistic to a degree later in this study), it does highlight the centrality of humanity as role player in the nature-human relationship. Holmes Rolston highlights this relationship between humanity and nature when he says that environmental ethics will remain prominent in the future "as long as there are moral agents on Earth with values at stake in their environment" (Rolston, 2011:1).

With this shift in the understanding and development of environmental ethics, environmental ethics became a discipline which describes the values carried by the non-human world and how humanity should respond on an ethical level to preserve or restore those values. A principal inquiry underlying this claim asks how values carried by nature could be described and whether nature is directly morally considerable in itself, or whether humans impose moral appreciation or need onto the natural world (Light & Rolston, 2003:1-2). In other words, the question evolved from "isolated conservation" to a relationship view with relational values and the preservation of these values for the sake of both humanity and nature as central.

But what exactly is *nature* and what is *humanity*? The importance of this question at the start of an environmental ethics study is obvious, but the inquiry also has broader implications for all human beings because one of the most fundamental relationships a person will find herself in is the interaction between the individual human being and the environment. A person is born into an environment of one form or another. Environment in this sense is always linked to a person; there is always the question "whose environment?" (O'Neill *et al*., 2008:1-4) and what type of environment this is. It is therefore sensible to distinguish a general reference to *environment* from *nature*, and also *nature* from *humanity* and *humanity* from *environment*, as all three are central concepts in this study:

> *Nature (also referred to as "wild" nature)* – Nature itself is a multi-faceted concept, but broadly refers to the living world that humanity inhabits (in conventional usage, this definition does not include humanity). Nature includes all non-human beings, as well as the environment that they occupy, as independent of humanity (O'Neill *et al*., 2008:1-4). In this definition there is a clear separation between humanity and nature, a perspective that will be criticized later. The definition does not, for example, acknowledge that humans are bodily beings and that they are thus inseparable from nature. It should be noted unambiguously that this definition is merely a working definition at this point of the study and that a fuller and more comprehensive idea of nature will be developed during the course of this study.

Environment – Hannah Arendt gives an interesting formulation of the environment by stating that it is another world that man has produced, a "natural-cultural" interface, that is called the environment (Arendt, 1958:2-3,9). This concept includes cultivated nature that has been managed by humanity and any other environments (such as the urban environment) that were generated by humanity. In other words, it includes those areas of nature which are very directly influenced or changed by mankind through her contact with it – whether through agricultural, residential or other development and needs.

Humanity –The human individual, but also the products of groups of individuals that give rise to the phenomenon of "culture" or "civilization". In its broadest sense this refers to *Homo sapiens* and the intellectual products of the species. It will be argued in this study that humanity is "elevated" above nature due to its ability to reason and think consciously, on the one hand, but that humanity is also a part of nature because it is susceptible to the same forces as other aspects of nature (refer to Chapter 3 for more on De Chardin's formulation). This study is, to a certain extent, a reaction to the Kantian idea that humanity is superior to nature, but it is also not suggested in this study that humanity is simply part of nature with no further classification. In this study the "human" and the "cultural" are linked and mostly used synonymously because "humanity" refers to the uniquely human in contrast to nature – it includes the cultural and intellectual abilities of humanity and does not focus primarily on the bodily nature of humanity.

A central enquiry of Richard Sylvan's 1973 paper deals with the manner in which *value* is ascribed to nature in the modern world. Further literature in the years following his seminal paper explored this issue further by postulating various alternative approaches for bestowing value on the environment. It appears easy to determine what a moral agent sees as valuable; a value is that which is highly regarded by a moral agent (in the case of an individual) or that

which is highly regarded by the majority (in the case of a community). This understanding of values, however, leads to an anthropocentric view of nature, the idea that nature has only as much value as humans choose to prescribe it (O'Neill *et al.*, 2008:1-4). In other words, if nature is "highly regarded" by individuals or a community, it has value, but otherwise not. No inherent "value" can thus be assigned to nature in this view. Normally nature attains value for humans as only as far as it has a purpose or function for humans. The value of nature is therefore reduced to "instrumental value".

In contrast to this view it has been stated that nature holds an intrinsic value that can be estimated or determined, in contrast to an instrumental value that could be attributed through human faculties based on estimations of value. How this alternative intrinsic value can be determined or estimated is however a contentious issue. In the brief history of "formal" environmental ethics, these two distinct approaches with regards to how value is conferred on nature have been prominent (both formulated in relation to humanity): The first is an anthropocentric value theory and the second is a non-anthropocentric value theory. These value theories (or axiologies) form part of a larger debate that centres on "anthropocentrism", or human-centred ethical thinking (Light & Rolston, 2003:9).

One may question these two broad outlines of value theories (or suggest, rightly, that they are dualistic), but these are often presented as the only two central approaches which could be postulated in current secular environmental ethics – either nature is valuable because humans say that it is or due to intrinsic features in nature that go beyond the valuation of humanity (deep ecology approaches form part of the latter axiological perspective). The idea that nature might be morally considerable on its own – as stated in non-anthropocentric views – forms a significant part of current environmental ethics debate and research; still, both anthropocentric and non-anthropocentric views contribute to the broader environmental ethics dialogue (Light & Rolston, 2003:2). A third possibility would, however, be to say that a transcendent being (e.g. God, god, or gods) attributes value to nature. However, in the secular, humanistic dialogue that is characteristic of the environmental ethics discourse there often appears to be only these two viable alternatives: Either humanity evaluates nature as valuable *or* nature is valuable inherently, regardless of humanity's evaluation. Both these viewpoints will be discussed in the following paragraphs. It will later be argued that these

two views are in fact inspired by a nature-human dichotomy that is resultant from a modernist worldview. By addressing the nature-human dichotomy, one will also be presented with the opportunity to question the anthropocentric/non-anthropocentric dualism that often appears prominent in modern environmental ethics. De Chardin's philosophy will be presented as alternative to these dichotomies later in this study.

In a research study entitled *Nature vs Culture in Sustainable Environmental Ethics Management* (2005), Ananka Loubser identifies two prominent Archimedean points in modernity that are telling of the current dichotomous view between humanity and nature, namely *reason* and *nature*. *Reason* is used in this context as synonymous with "humanity" or "culture", which emphasizes the relation between humanity's intellectual capacities and the value given for certain things (such as nature) through this intellectual capacity. I postulate that the existence of two such prominent Archimedean points explains to a degree why the secular discussion in environmental ethics is characterized only by value being attributed to nature by humans (anthropocentric axiology) or to nature through nature (intrinsic axiology). These approaches are symptomatic of an inherent dichotomous perspective that has influenced thought in all areas of modern society, even in environmental ethics.

Loubser notes a mechanistic element in modernity, a worldview that places *reason* as the Archimedes point (Loubser, 2005:2). This point will be investigated further in the study, with specific reference to instrumental reason (refer to section 2.2). In terms of the nature-human dualistic relationship, this *mechanistic worldview* is closely linked to the term "human" (or "cultural"). On the other hand, Loubser identifies a more holistic, organistic worldview with *nature* as Archimedes point that is present in later stages of modernity, and more prominently in postmodernity (Loubser, 2005:2). This *organistic worldview* is closely linked to the nature side of the nature-human dualistic relationship. Both these fundamental worldviews play a role in the current axiological discussions in environmental ethics, by presenting a perspective that postulates that one must choose for one or the other. Later in this study, however, De Chardin is presented as an alternative to this dichotomous view. At this point it is necessary to identify what each of these perspectives entails. The roots of this anthropocentric / non-anthropocentric dualism will then be investigated.

Anthropocentric approaches

Normal (or traditional) ethics is conventionally anthropocentric. J. Baird Callicott says that normal ethics approaches are utilized in environmental ethics to deal with unique problems that do not form part of an individual's everyday moral dealings (Callicott, 1984:299-300). This traditional approach of normal ethics can be traced back throughout the history of Western philosophy, wherein ethics approached dilemmas in distinctly anthropocentric ways – classical ethical schools assumed or defended the position that ethical reasoning was limited to human agents (Light & Rolston, 2003:9). Furthermore, this type of ethics also only applied to human agents. When ethical environmental problems like global warming, deforestation, "radwaste" disposal, and so on, are approached by using only the tools provided by normal ethics, the importance of nature is often not taken into account. In such cases the focus is only on human needs.

1) Strict or exclusivist anthropocentric axiologies

An anthropocentric value theory confers intrinsic value only on human beings, and all other things (including other forms of life) become merely instrumentally valuable. Such things are therefore considered valuable based solely on their usefulness, not due to any inherent qualities which they possess, and anthropocentric moral theories can only evaluate the "wrongness" of ethical interaction with such things based on actual or potential losses of natural resources (based on spiritual, aesthetic and material evaluation by humans) and "disruption of natural services" (Callicott, 1984:299-300). In other words, environmental action is only wrong in so far as it negatively influences the usefulness or instrumental value of nature. Callicott identifies the method by which environmental issues are approached in modernity concisely when stating that "environmental ethics is thus reduced more or less to cost-benefit analyses and public policy considerations" (1984:299) – it is all about the instrumental value of nature in this approach. This position seems indefensible in light of damage done to the natural environment during the modern period, as most modern approaches regard nature only in an anthropocentric manner.

The reasons why anthropocentric approaches remain prominent are easy to understand. Nature is a source of nearly all things that humans need, such as food, water, air, building materials, etc. and could therefore easily become only indirectly morally considerable (Light & Rolston, 2003:2). Moral value is attributed only to what humanity is able to take from nature, rather than to inherent qualities of nature in itself. This approach is argued for by many ethicists, but it is also problematic. How can one argue, for example, for value where no human interest is involved or in cases where different human interests take precedent? (Light & Rolston, 2003:7). Because of these problems a "weak" or "broad" anthropocentric approach developed in contrast to "strict" or "exclusivist" anthropocentric approaches.

2) "Weak" or "broad" anthropocentric axiologies

Due to some of the problems explained above, there is little argument in environmental ethics for "strict" anthropocentric axiologies. Most arguments presented relate instead to "weak" or "broad" anthropocentrism. This form of anthropocentrism is in contrast to radical anthropocentrism as advocated in the works of many Western scholars in modernity, such as Immanuel Kant and Descartes (Msafiri, 2007:50). "Weak" or "broad" anthropocentric approaches identify forms of human-centered thinking that attribute human-based values to nature in ways that differ from mere resource usefulness or instrumental value and instead focus on ideals such as the well-being of future human generations (Light & Rolston, 2003:9). This broader approach is more holistic (and therefore, perhaps, more legitimate for universal application), because not only usefulness is regarded as value in nature, but also other values like human well-being and aesthetics. This axiology is still, however, an anthropocentric axiology and it should be noted that De Chardin's philosophy is suggested later as a possible means to overcome the culturally-bound problematique of "weak" anthropocentrism.

A point of criticism here with regards to "weak" anthropocentrism is that an anthropocentric perspective is easily identifiable with a particular culture or era, and that not all cultures value nature in the same way (or value nature at all). Furthermore, once one admits that

human-based reasons could be used to argue for value in nature it opens the door for counter-arguments presenting human-based reasons for why nature should *not* be valued. The counter-claim is then made that the thing which humanity is attempting to save (nature) is per definition non-anthropocentric and that one should therefore attempt to escape the "vagaries of different culturally bound reasons for valuing nature" (Light & Rolston, 2003:9-10).

In contrast, Callicott argues against anthropocentrism of any kind, for example, and states that non-anthropocentric axiologies are the only way to revolutionize humanity's interaction with nature (Callicott, 1984:300). The claims of developing a non-anthropocentric value theory made by Callicott are dubious, however, as many ethicists reject non-anthropocentric claims because they see difficulty in ascribing intrinsic value to nature and cannot identify clear explanations for why nature is directly morally considerable (Light & Rolston, 2003:9). The reason for this is quite simply that humanity always stands in some relation to nature, and that humanity is the moral agency in this relationship that evaluates how to act with regards to the natural world. Humanity is continually tasked with attributing value to nature and is also the only agency that could preserve it. There is a contradiction here – non-anthropocentric value is still developed by humans and is therefore inherently "anthropocentric". Whether intrinsic value truly exists is therefore a debatable question, but it is worthwhile to ask to what extent a non-anthropocentric axiology would be a realistic alternative to anthropocentric axiologies? Non-anthropocentric approaches are discussed in the next section as answer to this question.

Non-anthropocentric approaches

A second approach with regards to value-conferment of nature is a non-anthropocentric value theory, which argues that nature has some form of intrinsic value. The protection of the environment is therefore important in a moral sense for more than the goods that it provides for humanity (Callicott, 1984:299; Light & Rolston, 2003:7). This notion could be expanded by saying that not only beings or entities are valued, but systems or structures beyond those which are already valued by humans for their usefulness. Nature becomes directly morally considerable if it possesses, *firstly*, some kind of value in and of itself which is not dependent

on anyone or anything else. *Secondly*, such value must be recognized by humanity or must inherently demand that humans protect or preserve it if non-anthropocentric axiologies are to engage with the current environmental crisis (Light & Rolston, 2003:2). Both these criteria for the claim that nature could be *directly morally considerable* or *intrinsically valuable* will be investigated in the next two sections.

1) Nature has inherent value

Many ethicists have claimed that, if we wish to develop a truly environmental ethic, anthropocentrism – in the sense of ethics being restricted to obligations, duties and concern among humans and what they have at stake - must be rejected. Tim Hayward, however, argues that such a conception of anthropocentrism is too narrowly defined and understood. This has not stopped various ethicists from pursuing the avenue of non-anthropocentric axiologies, which form a prominent part of the current environmental ethics discussion. The general claim in these non-anthropocentric theories is that preferring *human interests* over *natural environmental interests* will not lead to a way to deal with the environmental crisis (Light & Rolston, 2003:8-9). Deep ecology may also be described as non-anthopocentric to a certain extent.

An example of a non-anthropocentric axiology is Callicott's view of environmental ethics, which includes both an *application* of established philosophical categories on emerging environmental problems and a theoretical *exploration* of alternative moral and metaphysical principles. These alternative moral principles are most prominently tasked with developing a non-anthropocentric value theory in Callicott's view. A non-anthropocentric axiology is therefore seen as vital for the development of the revolutionary aspirations of theoretical environmental ethics; otherwise, Callicott claims, environmental ethics would just be describing a system of ethical application (Callicott, 1984:299). In other words, a more fundamental approach (exploration of alternative moral and metaphysical principles) is pursued in a non-anthropocentric axiology in contrast to a limited and isolated human application of ethics to certain specific environmental ethics issues in anthropocentric

perspectives. This fundamental re-evaluation is similar to the approach developed when applying De Chardin's philosophy to environmental ethics, as will be discussed in chapter 4.

The question, however, is how intrinsic value – or inherent value – of nature can be estimated or determined. Three different basic formulations of "intrinsic value" are discussed by John O'Neill in *The Varieties of Intrinsic Value* (O'Neill, 2007:131-132):

> 1) Non-instrumental value, i.e. the idea that some object or entity has value in itself, rather than being the means to some other end. The value of the entity or object is an end in itself. In this formulation, some objects have intrinsic value whilst other objects do not have such value. In this sense, it is argued that non-human beings and states are some of the entities that have such non-instrumental value (O'Neill, 2007:131-132).
>
> 2) Value due to "intrinsic properties", which are non-relational. This form of intrinsic value states that the possibility of an object having intrinsic value, as well as the degree of said value, depends solely on the intrinsic nature of the object in question. This "intrinsic nature" or these "intrinsic properties" are not linked in any way to influences outside the object itself (O'Neill, 2007:131-132).
>
> 3) Objective value, i.e. value that an object or entity possesses independently of any valuation of valuers. This formulation is therefore a denial of a subjectivist view that valuers give value to an object or entity, rather than an ethical or meta-ethical claim from these valuers (O'Neill, 2007:131-132).

All three of these variations listed by O'Neill of the concept "intrinsic value" differ sharply from the way anthropocentric axiologies approach the concept of value, but upon closer scrutiny it seems that none of these three views are very convincing in moving away completely from the human valuator. The paradox inherent in the axiology remains unresolved. Humanity remains as the ultimate decision-maker on how to deal with environmental issues and nature is not truly given a "voice", "vote" or "choice". The problem is of course that humanity is not only the "ultimate decision-maker", but is also directly

identifiable as the only species on the planet that causes large scale environmental damage and has the potential to cause irrevocable harm to the natural systems of the planet. This is true even if another source than humanity, such as God, is suggested for calling humanity to responsibly engage with nature. In such a scenario humanity must still make the conscious choice to act on these divine commands – but humanity often seems to fail dismally in this regard.

Although one may in principle argue that a broad non-anthropocentric view (as being open to an intrinsic value of nature) might be a better alternative to an exclusivist anthropocentric value theory (that regards only humanity as important), a meta-ethical critique of non-anthropocentric value-theory quickly indicates the problem with this view. It is often cited in this regard that to "claim that items in the non-human world have intrinsic values commits one to an objectivist view of values; an objectivist view of values is indefensible; hence the non-human world contains *nothing* of intrinsic value" (O'Neill, 2007:132 – my emphasis). The only recourse, of course, is the application of a subjectivist meta-ethics. However, a subjectivist meta-ethics has the unwanted outcome in environmental ethics of positing that nature has mostly instrumental value based on subjective human opinions (O'Neill, 2007:132). The central dilemma in non-anthropocentric axiologies is that the Earth is merely an object and the application of intrinsic value to it is simply not appropriate (Rolston, 2011:23). But there have been some good efforts to argue for intrinsic value in nature, for example the argument of Richard Routley.

Richard Routley famously argued for inherent value in nature (Light & Rolston, 2003:7-8) with the following thought experiment: He stated that if there were only one person left on the planet, and she chose to destroy the entire natural world as a means to go out with a bang, would anything be wrong with this last human act? He suggested that most people would answer that she should not do it, that it would somehow seem wrong. It would be wrong because of the assumption that "nature has value in itself", independent of any human existence. However, in my view, this argument is not sufficient to prove that nature has inherent value. Again, human valuation classifies the act of destroying the entire natural world as "bad". If no humans are left, no conscious individual would be able to claim that her act was wrong. Routley's argument is still based on an anthropocentric premise. The same

goes for arguments regarding species that only occur in small geographic areas, endangered or otherwise, which may be threatened by human development – again if no valuation from conscious and aware beings occur then these species cannot be *regarded* as valuable (note here that I am in no way arguing that these isolated species are not valuable, only that valuation has a human source). Light and Rolston state that an argument for intrinsic value in these cases is based more on *intuition* than on argument, even though such views are widespread (2003:8). It must at least then be acknowledged that (some) *humans* have the *intuition* that nature has intrinsic value whilst others have not, but the proof for this statement remains highly problematic.

2) Inherent value in nature must be recognized

An important second aspect of the idea that nature has inherent value and should therefore be preserved or conserved, is the fact that if this inherent value is present (which is questionable according to the previous section), nature should be recognized as inherently valuable by the majority of human agents. It is not just enough to say that nature has inherent value; humans must *observe* that inherent value in nature and react towards nature accordingly. This would be comparable to an argument that art has intrinsic value. Whilst this claim might be true, it depends on human valuation to recognize such intrinsic value in artworks and to preserve it in a place such as an art gallery. Without that recognition, no preservation of the artwork would take place (even though such an artwork would be intrinsically valuable to a very large degree). Historically, humans have not been very good at evaluating the value of things if they are unrelated to strict criteria. Any concept of nature as intrinsically valuable would therefore have to be formulated according to strict criteria, i.e. pragmatically, which defeats the point of postulating inherent value to a large extent. Do religious perspectives on the relationship between humanity and nature provide any alternative possibilities for valuaing nature?

Religious approaches

Although not forming a central part of the current secular discussion on environmental ethics, religious perspectives on nature and the value that could be attributed to nature have been a central part of the world of antiquity and the modern Western world. It would therefore be remiss to not discuss this specific topic as well, especially in light of the unique perspectives and development from such religious approaches. In this section Christianity, the Traditional African religions and broadly Islam and Judaism will be discussed with regards to nature value-conferment.

Christianity plays a central role in the Western cultural religious landscape and is based fundamentally on the belief that God is the sole creator of the world and universe (Msafiri, 2007:86). A prominent approach towards nature in the Christian tradition is encapsulated with the idea of an original cultural mandate, which states that human preservation and cultivation of the natural world is a Christian duty. This duty exists because God created the entire universe as good – which implies an intrinsic value in creation. Inherent in this mandate are commands to develop humanity culturally ("tilling the Earth") and to be stewards over the Earth ("caring for the Earth"), i.e. both destructive and constructive approaches towards "wild" nature are described in this mandate. However, because both possibilities are suggested it is up to the individual Christian to decide how to approach nature (Loubser, 2005:23; Van der Walt, 1999:25). In the modern world, however, there has been a misappropriation of this mandate to suggest that humanity should be masters over nature (or exploiters of nature) with no corresponding mention of cultivation or protection.[3]

Another religious perspective that is especially important in the South African context is the Traditional African religious perspective on religious and environmental issues, a perspective that is intensely multifaceted according to Msafiri (2007:42). In these traditions the world

[3] Ernst M. Conradie, a South African author, works specifically on environmental issues in relation to theology. In *An Ecological Christian Anthropology* (2005) he discusses the widespread sense of alienation that humanity experiences with regards to nature, and expresses concerns about anthropocentrism which has invaded the current Christian debate.

was created by a God or Supreme Being and to many ethnic African groups the *whole of reality has a divine or religious character*. In African religions there is therefore a strong idea of human beings and nature in partnership as part of the entirety of the world, and this interconnectedness is expressed through rituals, myths, worship and celebrations (Msafiri, 2007:42-43,45). African religions therefore describe a profoundly holistic view of the world, defined by Harvey Sindima as follows:

> "Nature and person are one, woven by creation into one texture or fabric or web characterized by inter-dependence between all creatures. This living fabric of nature – including people and other creatures – is sacred. Its sanctity does not mean that nature should be worshipped, but does mean that it ought to be treated with respect" (Sindima, 1989:143).

The above description shows that in African religious traditions there is a fundamental idea (similar to the Christian idea) that nature is inherently valuable. The fundamental reason is not, however, that God deemed creation as good. Rather, animals and spirits, including forefather spirits, form a part of the natural world and the natural world should therefore be worshipped and respected. African religions may thus be identified as moderately or "broadly" anthropocentric (Msafiri, 2007:50). Traditional African religious perspectives, furthermore, also encourage the protection of species that occur only in isolated geographic areas by associating strict taboos and totemic beliefs with animals like hippos and elephants (Msafiri, 2007:47). Whilst this does not overcome a culturally-bound approach towards nature, it does show that some traditional approaches towards nature are shaped in such a way that conservation and protection of these types of endangered animals becomes a central cultural focus.

The most basic tenet of Islamic faith and tradition is human obedience to Allah, and the idea that the whole of creation is transitory. Islam's views toward the natural environment are quite varied. On one hand there are laws that foster the integrity of biodiversity, whilst other tenets encourage a predominantly utilitarian nature-human relationship. It can thus roughly be categorized under the same tensions as Christianity's understanding of the value of nature, because the individual believer must choose how to deal with nature. Judaism, on the other

hand, emphasizes the unique goodness of the physical world as part of Hebrew literature and life, which hypothesizes that there is an intrinsic connectedness and dependence among humans and the natural environment (Msafiri, 2007:51,53). Not all religious perspectives can be discussed in this section, and the intention here was only to generate a flavour of the perspectives with regards to nature that arise in such religious approaches.

Often, religious approaches are seen as contrasting with the secular discussion. There appears to be a fundamental belief that secular and religious approaches function in separate domains and that these domains have very little to contribute to each other. The rise of New Atheism, the foundations of which are formulated by thinkers such as Richard Dawkins, suggests for example that religion is a delusion and that religious thoughts are merely a remnant of pre-modern traditions. In such an intellectual climate it is apparent why few religious perspectives are considered as validly contributing to the secular environmental ethics debate. However, the view that religious perspectives cannot contribute to secular environmental ethics, as described in this paragraph, will be challenged later in this study when De Chardin's philosophy, with its unique spiritual formulation, is applied to environmental ethics.

1.5. Chapter conclusion

The previous section argued that the *religious perspective* offers cannot contribute to a secular discussion of environmental axiologies, because its approach implies an inherent faith commitment which is not shared by all members of a multi-cultural society.[4] Two secular approaches, anthropocentric axiologies and non-anthropocentric axiologies, are therefore conventionally proposed with regards to nature value-conferment in the secular environmental ethics dialogue. *Anthropocentric value theories* state that humanity is central as valuator of nature. Some formulations of anthropocentric approaches are guilty of *speciesism* (the assumption that only the members of the human species matter) and lead to

[4] However, religious axiologies present perspectives on the human-nature relationship that may contribute to overcoming the current environmental crisis.

situations where it is very difficult to balance human needs with the needs of the environment (Sylvan, 1973:19). *Non-anthropocentric value theories*, in contrast, relegates humanity's place in the nature-human relationship to a much smaller role due to the claim that nature is inherently valuable, but this view is not without contradiction. Non-anthropocentrism may produce an untenable ethical theory that cannot provide answers concerning the role that humanity should play with regards to nature, because humans as decision makers play too small a role in the value theory and seem unable or unwilling to "think like a mountain" (in the description of Arne Naess (Seed, 1988)).

In summary one can therefore say that with both axiological approaches suggested in the current environmental ethics discourse, the nature-human relationship's pendulum is either at one end of the spectrum (humanity) or at the other (nature). Although both these views are prominent in environmental ethics, I argue that neither an "exclusivist" or "strict" anthropocentric value theory, nor the current postulations for a non-anthropocentric value theory[5], are sufficient for developing a type of environmental ethics that places environmental preservation and conservation centrally. Furthermore, neither one of these approaches have succeeded in developing a more sustainable relationship between humanity and nature in the past.

Some philosophers such as Bryan Norton and Eugene Hargrove suggest that we do not have convincing non-anthropocentric arguments, nor do we need them, because there are adequate human concepts for nature valuation that could be extended to cover endangered species and other natural environment aspects. Furthermore, anthropocentrism may also include values, such as aesthetic evaluations, which may lead to the preservation of nature (Light & Rolston, 2003:8-9). This description references "weak" anthropocentric axiologies as possible solution for the environmental crisis. However, as discussed in the section on "Weak" or "broad" anthropocentric axiologies, these types of value theories also entail some distinct problems, such as human chauvinism and the problems inherent in arguing from a specific cultural background. Therefore, although "weak" anthropocentrism is possibly a helpful approach regarding the nature-human relationship, there are several distinct problems that remain to be

[5] Here I am inclined to include many formulations of deep ecology.

overcome. It is worth emphasizing, however, that due to the clear practical aspects of environmental ethics the human role-player in the nature-human relationship should be stressed in order to develop a responsible approach towards the natural world through human action. Therefore, if presented with a choice between anthropocentrism and non-anthropocentrism, I would be inclined to suggest that a weaker form of anthropocentrism may be a possible avenue to investigate for developing a more sustainable nature-human relationship.

"Weak" anthropocentrism links to Rolston's description that an "interhuman ethics must serve to find a satisfactory fit for humans in their communities; and, beyond that, an environmental ethics must find a satisfactory fit for humans in the larger communities of life on Earth" (2011:3). A further motivation for the idea that a "weak" anthropocentric perspective could be utilized to deal with the environmental crisis rather than a non-anthropocentric value theory is that, to a large extent, non-anthropocentrism is ethically unattainable due to its denial of humanity's central role. It is also too far-removed from human interests for political leaders to incorporate into their environmental ethics decisions and the inherent contradiction, described earlier in this section, of humans formulating a non-anthropocentric value theory remains. In my view the arguments made for direct moral consideration of nature by philosophers such as Paul W Taylor, Richard Sylvan, Holmes Rolston and Keekok Lee are not adequate by themselves to inspire public change even though these are excellent philosophical arguments (Light & Rolston, 2003:8). Humankind will always sway the forces of nature to anthropocentric advantage, and this aspect of humanity's approach towards nature should not be disregarded (Heidegger, 1938:85-88; Loubser, 2005:14).

I therefore suggest that, in this dichotomous view of nature versus humanity, a "weak" anthropocentric value theory that finds a place for non-human valuation on a universal level may be a viable approach – such a view fits with humans and human communities and provides a possibility to deal with the natural environment. There is, however, a tension in the formulation of anthropocentrism as well. In anthropocentrism humanity sees itself as separate from the natural environment, often only taking from nature what is necessary or useful but *on the other hand* humanity is also dependent on nature for its continued survival.

This tension makes it extremely difficult to make morally responsible choices with regards to nature, as humans habitually gravitate towards short-term fulfilment of goals rather than sustaining the natural world, i.e. short-term visible results versus long-term invisible consequences (O'Neill *et al*., 2008:58).[6]

At this point I therefore question whether such a "weak" anthropocentrism is *the only* viable alternative to utilize as a basis for the formulation of a more sustainable nature-human relationship that could address problems of the current environmental crisis. Would there not be a *better* alternative than "weak" anthropocentrism, if the question of the nature-human relationship is approached in a fundamentally different way? Perhaps neither anthropocentrism nor non-anthropocentrism theories *per se* are sufficient to provide answers and solutions to the damage being done to the natural world today. Such inadequacy may be due to practical problems, such as the unwillingness of large corporations to change the way in which they approach the natural world. However, I postulate that another reason for this inability to effectively deal with the environmental crisis may be that the main axiological approaches described in the environmental debate are in fact a false dichotomy, presenting a false choice between either anthropocentrism or non-anthropocentrism. This may lead to difficulty when trying to find solutions to the environmental crisis today, as an inaccurate picture of the nature-human relationship is suggested.

The dilemma therefore remains in current environmental ethics concerning what the relationship between humanity and nature, and which of these entities is the most important factor present in the relationship. I will postulate in this study that the current conception of the relationship between humanity and nature (where humanity is perceived as separate from nature) cannot lead to a truly sustainable conservation of the natural environment, because it engenders the further dichotomous view in environmental ethics that a choice should be made between either anthropocentric or non-anthropocentric views. Attempts to address environmental problems in the past have not escaped from a traditional formulation of the

[6] Loubser describes this phenomenon by stating that "each generation of men's mass desire to make the most of their transient existence on earth" (2005:15). Environmental considerations and ethical enquiry challenges such a traditional (unsustainable) approach, however.

nature-human relationship, where the two aspects are seen as separate entities or forces. Eco-feminists agree that the roots of the ecological crisis can be found in humanity's alienation or isolation from the natural environment due to the inability "to look at nature as our life-giving mother" (Kureethadam, 2003:73). In fact, a variety of sub-disciplines in environmental ethics (including deep ecology, social ecology and eco-feminism) have described the exaggerated anthropocentrism and the nature-human dichotomy as cause of the current environmental crisis (Mathews, 1998:199). Therefore, a foundational reformulation of the nature-human relationship is necessary to correct this skewed view of humanity's place in nature.

It is postulated that this skewed view of the relationship between nature and humanity was cultivated in modernity, and it is therefore sensible to first question how this view was established in modernity (i.e. what are its philosophical roots). Secondly, these roots should be addressed if any progress is to be made. In this study the research question will be asked whether De Chardin could make a worthwhile contribution to environmental ethics, specifically by allowing a new evaluation of the nature-human dichotomy in a way that differs from the perspective that was developed in modernity. It is then suggested that De Chardin's philosophy does, to a significant extent, overcome the nature-human dichotomy that developed in modernity and it provides an alternative formulation of this relationship which may lead to a more sustainable environmental ethic, thereby addressing some serious environmental problems that have philosophical roots in modernity.

CHAPTER 2: THE PROBLEM OF A NATURE-HUMAN DICHOTOMY IN MODERNITY

This chapter deals with a central dilemma in modernity, namely: What is the relationship between humanity and nature in modernity? It is postulated that this relationship is perceived as fundamentally separate in modernity, and that such view in modernity may lead to the anthropocentric / non-anthropocentric dualism in modern environmental ethics postulated in the previous chapter.

The first step in analysing this nature-human relationship in modernity is to identify what the concept of "modernity" entails, focusing on various characteristics of modernity such as "modernity's project of progress". Furthermore, the factors of modernity that led to this view of nature as isolated from humanity will be explored. These factors are identified in this chapter as *differentiation*, *instrumental reason*, *secularization, individualism, urbanism* and *political fears*. It is suggested that two roots can be identified that influence these factors, especially in relation to the nature-human dichotomy problem. These two roots are identified, in this study, as *dualistic ontologies* in modernity and the formulation of *neo-capitalism as absolute* in the modernistic context. Thereafter, the effects of these two root problems of modernity are investigated. It is concluded that the characteristics and two roots of modernity lead to a large amount of environmental misuse and damage, and that a more sustainable approach is therefore needed when approaching the question of the relationship between nature and humanity.

Two main ways to deal with the problematic relationship between nature and humanity are discussed. The first approach identifies pragmatic solutions such as legislation, pricing and voting as ways to develop a more sustainable relationship between nature and humanity, whilst the second approach states that broader responsibility towards nature should be cultivated through engagement with individuals' and societal worldviews and ethical

frameworks. This second approach is identified as a longer-term effective approach towards addressing the environmental problems of today.

In the third chapter a solution in line with this second approach is presented as answer to the central research question: *Could De Chardin make a worthwhile contribution to environmental ethics, specifically by allowing a new evaluation of the nature-human dichotomy that differs from the perspective that was developed in modernity?* It is suggested that the work of De Chardin provides a way to overcome the nature-human dichotomy that is identified in modernity.

2.1. Modernity and modernism

The well-known philosopher of the previous century, Henri Bergson, identified the era that humanity entered with the coming of the industrial age as the threshold of a *new epoch*. In the early 1900s he said that "in thousands of years, when, seen from a distance, only the broad outlines of the present age will still be visible, our wars and our revolutions will count for little, even supposing they are remembered at all; but the steam-engine, and the procession of inventions of every kind that accompanied it, will perhaps be spoken of as we speak of the bronze or of the chipped stone of prehistoric time: it will serve to define an age" (Bergson, 1911:146).

This new epoch, characterized by the combination of science and technological development, is generally known as modernity. Modernity describes a broader historical period that began during the mid-sixteenth century and focused on concepts such as capitalization, industrialization and rationalization. It should be noted that even though the roots of modernity may be traced much further back than the French Enlightenment, it is during the mid-sixteenth century period that the clearest outline of modernity was formed. Centrally, modernity challenges all conventional and traditional ways of doings things that developed in pre-modernity or antiquity (Lyon, 1994:21). Roger Griffin provides a list on the most significant elements of modernity and the role that technology plays therein. His description

indicates the comprehensiveness of modernity and all the changes it brought to society and to the way humans interact with their environment (and eventually nature as a whole):

> "...the spread of rationalism, liberalism, secularization, individualism, and capitalism, the cult of progress, expanding literacy rates and social mobility, urbanization and industrialization, the emergence of the urban middle class (capitalist) and the working (rural and proletarian) classes from a feudal structure of society, the growth of representative government and bureaucratization, revolutionary developments in communication and transport, geographical discoveries and imperial expansion, the advance of secular science and ever more powerful technology and technocracy" (Griffin, 2007:45-46).

Reductionist scientific approaches and movements like Positivism and Empiricism became prominent in modernity, directly following from the increasing focus on science as a means to gain true knowledge during the Enlightenment. In fact, modernity may be described as an era whose dominant values are those of the eighteenth century Enlightenment, particularly with regards to *reason* as driving value (Weller, 2011:2). Modernity can furthermore be described as the social order that emerged from the French Enlightenment, declaring the dispute between the ancient and the modern as being resolved in favour of the latter (Lyon, 1994:19; Weller, 2011:17). The traditional ways of ordering society were replaced by the authorities of modernity, namely science, democracy, economic growth and law. One of modernity's main claims is that tradition may be dismissed or marginalized (Lyon, 1994:18,21). Fredric Jameson, in line with the Frankfurt School and the *Dialectic of Enlightenment* (1947), describes this aspect of modernity as a "catastrophe", because in his view it disrupts traditional ways of living and societal structures, removes sacred and traditional elements from the world and leaves a barren globe, with only raw elements to be harvested and utilized (Jameson, 1994:84; Weller, 2011:2). The negative implications in this description of modernity for the environment and nature are evident.

David Lyon describes modernity in his book *Postmodernity* (1994) as being characterized by "an unprecedented dynamism" (1994:18). Griffin expands on this idea in *Modernism and*

Fascism (2007) by stating that *modernism* is a reaction to modernity as characterized in the late nineteenth century and early part of the twentieth century.[7] The character of modernity in the late eighteenth and early half of the nineteenth century was of a revolutionary and progressive nature. It was a reaction against conservative ideas of previous centuries. However, by the late nineteenth century and early part of the twentieth century modernity had taken on another form. This form of modernity may be described as decadent and nihilistic (Griffin, 2007:177,236,242-243), showcasing elements of modernity that gave rise to the term *modernism* and a "revolt against decadence" (Weller, 2011:1). The characteristics of this latter phase have direct bearing on the way that humanity approaches its relationship towards nature in the current age.

Griffin describes modernity as an attempt to destroy an historical movement that affects society on a philosophical, political and aesthetic level but which no longer contributes any shape or meaning in this cultural context. In effect, modernism describes the search for "new sources of meaning, spirituality and communality" (Griffin, 2007:52), because in the end modernity is experienced as something nihilistic. This has, of course, negative implications for humanity's relation to nature – an idea that "nature doesn't matter" because "nothing matters".

Modernity's project of progress

Richard Tarnas' description of modernity entails a view of modernity as a whole as being both unstable and continuously evolving.[8] This idea of eternal change forms the basis of a fundamental belief in modernity – that of continual progress and the power of human reason

[7] A note on the terminology usage in this study: Modernity refers to a historical period and modernism to a critique of this period in mostly aesthetic or artistic ways, although authors such as Shane Weller and Roger Griffin indicate that there are also philosophical and political forms of modernism. David Harvey remarks that modernism is a "troubled and fluctuating aesthetic response to conditions of modernity produced by a particular process of modernization" (1989:98). In this study the term "modernity" is used throughout, as the study does not present a general critique of the entire movement (i.e. modernism) but rather simply the effect that this movement has on the nature-human relationship.

[8] In the chapter "The foundations of the Modern World View" from *The Passion of the Western Mind* (1991:282-291).

to generate a more free society (Lyon, 1994:19). This belief in progress evolved into the doctrine of pragmatism, whereby only practical and measureable results are regarded as important, because only these types of results are viewed as measures of success in modern society. The measurement for this progress was therefore materialistic, and specifically economic in nature (Loubser, 2005:19). Bob Goudzwaard comments that this measurement of progress easily leads one to a type of prisoner's dilemma, wherein individuals in modernity might want to change the present economistic practices but cannot. Self-imposed economic restraints with the goal of sustainability will disadvantage the individuals who impose such restraints, whilst all others receive the advantage by refusing to do the same (Goudzwaard & De Lange, 1995:107). This fundamental belief in progress has implications, however, for modernity's relation to nature. Nature was seen in the past as the source for modernity's progress – as some object that must be utilized to lead to progression of human development and freedom.

A flawed endeavour?

Any discussion of modernity, even a critique of its fundamental approaches, must not disregard the true beneficial developments that were resultant from this movement. Achievements of modern democracy and scientific and technological developments (especially in terms of medical advances) have been so ingrained in the everyday world that modernity's influence on such fields cannot (and should not) be denied – even though it is easy to dismiss these developments due to familiarity.

Perhaps the easiest way to observe that modernity was not fully successful in its endeavour of development and progress, however, is in noting that modernity as historical period serves neither as an end of history nor as culmination of the human individual. There are two points in history that can be claimed as telling of modernity's failure in this context. The first point of failure is identified by Griffin as having occurred during the second half of the nineteenth century, after the various failed revolutions of 1848 and the experience of the Franco-Prussian war of 1870 to 1971 (Griffin, 2007:45). Before this time, modernity had been seen as generally progressive and as leading towards an enlightened future. After these revolutions

and war, such a view could no longer be sustained and the idea developed of modernity as a failed project. In light of this it can be said that it is no coincidence that Nietzsche's publication of *The Birth of Tragedy* was in 1872. A second indication of the failure of modernity arrived in the mid-twentieth century with the rise of postmodernity. The transition from the modern to the postmodern era is widely accepted as having occurred at the end of the Second World War in 1945 when disclosure of the facts of the Holocaust occurred (Weller, 2011:3). This was the moment where, according to Jean-Francois Lyotard, the "grand narratives" of the Enlightenment as formulated in modernity could no longer be sustained and had to be replaced with new ones (Lyotard, 1984:31,37; Weller, 2011:3-4).

However, the distinction between modernity and postmodernity, in terms of environmental ethics, is not well-developed and it appears that the "end of modernity" has had little impact in this field. At least, this is the perspective one observes when investigating environmental ethics' current approach which is still highly distinctive of the ideologies presented in modernity. It seems that the postmodern has not yet reached the point where it adequately engages through environmental ethics with the natural environment in the public sphere, and on the other hand public policy makers still cling to modernity's ideologies when dealing with nature. The focus of this study will thus be primarily on modernity and its implications for environmental ethics. Postmodernity will thereby not be ignored, and some of the advantages in proceeding from modernity to postmodernity in environmental ethics will be highlighted when De Chardin's work is discussed. In some ways De Chardin's philosophy could be described as postmodernist, but his philosophy is also distinct from postmodernity on several crucial points. These points will be returned to in chapter 5. It is necessary, at this point in the study, to analyse modernity's dichotomy between humanity and nature, as well as its negative consequences for the environment.

2.2. The nature-human dichotomy – A modern problem for the environment

Modernity has been described as an era in which rationality or reason gained immense emphasis – it became the driving force or value behind modernity as a whole. In this modern context two forces are normally contrasted: that of wild, untamed, irrational *nature* and that

of reasonable, structured *culture* (the *human* aspect). This bifurcation of nature (irrationality) and culture (reason) is thus typical of modernity and the relationship is positioned as two opposite poles which are in constant tension. The rational side of this bifurcation is associated with humanity, its culture and needs. Nature, on the other hand, is the irrational environment which must be explored and used to further the quest of rational human beings for development, order, progress, freedom and culture (therefore, rationality). A dialectical relation thus develops between humans and nature, as Loubser (amongst other) explains. She says, for example, that because the physical products of humanity's *culture* require *natural* resources, it makes sense that a dialectic relationship between humanity and nature has developed (2005:4). There is a constant push-and-pull interaction between the "wants" and "needs" of humanity, and the preservation of wild nature. It is clear that even on a broader scale, which involves industry, pollution and global warming, nature does not need to be touched directly by human hands to be affected by them. It is my view that this dualism between rational humanity and irrational nature, fuelled by the view of nature as production source for human development and progress, is inherently and fundamentally linked to the project of and worldview inherent in modernity.

Within the fundamental building blocks of modernity reside a strong sense of "discontent" or "malaise" concerning modernity's overall project and where it has lead the world.[9] The discontent is so strong that it could be questioned whether the beneficial developments of modernity truly outweigh the aspects of previous eras which seem to have been lost. Charles Taylor discusses the "malaises of modernity" in his book with the same title in which he both characterizes and criticizes the modern movement and describes a way to halt a sense of decline or loss experienced in contemporary society - a strong sense that something has been lost that was present in humanity's past eras (Taylor, 1996:1-2).[10] He argues that these malaises are the result of a certain amount of discontentment with modernity, and Taylor specifically links such discontentment with the influences of *individualism*, the *primacy of*

[9] This is evident from critique within modernity itself, as well as critique from postmodernity. The Second World War has led to the biggest reaction against and rejection of modernity's ideals.

[10] Charles Taylor (1996). *The Malaise of Modernity* presents an important and convincing critique of modernity. It is also known by the title *The Ethics of Authenticity*, which hints at Taylor's conclusion in the book – the suggestion that true moral development in modernity depends on a return to an ethic of "authenticity".

instrumental reason and the *political fears* that are resultant from the first two elements. Furthermore, Taylor problematizes overconfidence in modernity's project of progress.

In *Postmodernity* David Lyon also identifies several aspects of modernity that have been a source of discontent (1994:19). The aspects which he addresses include *differentiation*, *rationalization, urbanism* and *secularity*. Both the malaises described by Taylor and the aspects of discontent described by Lyon are of particular importance to the current study's attempt to evaluate the relationship between humanity and nature against the backdrop of modernity, as they indicate particular problems within the project of modernity that may have influenced the misuse of the environment. Differentiation, secularization, urbanism and political fears will each now be discussed separately in an attempt to indicate their negative influence on the nature-human dichotomy of modernity. Thereafter, a discussion on dualistic ontologies and neo-capitalism will follow.

Differentiation

The first aspect of modernity which can be listed as a source of discontent is *differentiation*. Lyon states that as the industrialization of emerging modernity increased, so did the division of labour and specialization of tasks, inducing a differentiation in society. Emile Durkheim described this as an "organic" social integration, one that grew out of the interdependence fostered by division of labour, rather than the "mechanical" solidarity that characterized earlier periods, coerced by tradition (Lyon, 1994:23). This trend continued in other spheres of society as well, with "home" and "leisure", "religion" and so on becoming separate parts of the same society. The consequence of this was that tasks once performed by the family or church were taken over by entities such as mass media, schools and welfare departments.

The consequent question arises: How could a complex society be *integrated* and *coordinated* in modernity against this backdrop of such differentiation? Talcott Parsons suggests that this is done through the creation of *meritocracy* – the idea that one is rewarded based on the contributions of one's work. People are allowed to achieve in a free market what they can

with their skills and abilities, thereby removing old barriers to social involvement that were caused by ascribing specific roles to people in society – for example that women may pursue any careers and not be restricted to traditional ideas of conformity, such as being forced by societal pressures to be a housewife (Lyon, 1994:23-24). This social differentiation is certainly a positive development in cases where people are forced to conform to traditional societal expectations, but it has also contributed to a differentiation in the relationship between humanity and nature. This means that a "mechanical solidarity" between humans and nature has also been lost with the increase in specialization and differentiation of labour. Only some people in society still deal directly with a very specialized aspect of nature (such as farmers and loggers) and an integrated relation between humanity and nature has been lost.

Furthermore, in modernity's meritocracy personal value is given only based on skills and achievements, rather than through social recognition. This increases the perspective of nature having only instrumental value – something that may be used to demonstrate one's skills and to gain achievement. In fact, nature is also expected to "achieve" and "contribute" to the modern world by providing resources for specific needs or desires. Differentiation thus leads, in an indirect but influential way, to the dichotomy between nature and humanity. Eventually nature's value is measured according to its "performance", according to what it provides for humanity. Further, value is attached more and more to the artifacted characteristics that we impose on what was once wild nature, as nature is increasingly mixed with human labour and industry (Rolston, 2011:2-3).

Instrumental reason

If one keeps the above argument about differentiation in mind, it makes sense that Taylor then identifies the *primacy of instrumental reason* as another factor that contributes to the "malaise" of modern society. With instrumental reason he refers to a type of rationality associated with the most economical application of means to a certain end. Maximum efficiency is always used as a measure of success (Taylor, 1996:5). Lyon describes this same phenomenon as *rationalization*. Max Weber identified not differentiation as central to

modernity, but rather a mental process of rationalization as distinctive of this period (Lyon, 1994:24). But why is this aspect of modernity a source of discontent?

Weber describes how people become calculating and rational towards various aspects of life by the continual application of instrumental reason in spheres of society where such an approach is unfortunately not fitting. This occurs due to a wholehearted adoption of the rational approach (which underlies modern science and can be expressed most clearly in the capitalist society), whereas the "spirits and demons" of traditional culture are expelled. In this way, only natural science and mathematical formulations become accurate representations of reality (Loubser, 2005:13). Observation and calculation are hallmarks of modernity for Weber, and this calculating rationality becomes the source of authority in lieu of tradition. This notion is affirmed in Lyon's statement: "The scientist's laboratory method, the capitalist's ledger of profit and loss, the bureaucrat's rules and ranks within the organization all testify to the significance of rationalization" (Lyon, 1994:24).

Such calculation (rationalization / instrumental reason) spilled over to an idea of *control*, particularly the mastery of nature by humans. Daniel Botkin states, for example, that "nature in the twenty-first century will be a nature *that we make*" and that "we have the *power to mold* nature into what we want it to be" (Rolston, 2011:4 – my emphasis). Although Botkin urges the wise management of nature, his statements hint at some of the seeds of the current dichotomous relationship between nature and humanity: Humanity had become a distant rational master over nature and nature had become a subordinate force to be controlled through instrumental reason. The idea had thus developed that nature could be tamed, mastered and governed by utilizing careful calculation and rationality. This rationalistic approach formed a central motif in modernity during the twentieth century. Fredric Jameson described this approach as the scientific ethos being elevated to a misguided will to power and domination over nature which, along with modernity's drive towards secularization (as discussed in a later section in this chapter), leads to the development of an instrumental worldview (Jameson, 1998:25). This instrumental worldview affects both humanity's perspective of itself and how it views nature. This is also described very well when Taylor says that in modern civilization, human beings have been divided by modern reason between themselves, within themselves, and from the natural world (Taylor, 1996:94). Due to this

primacy of instrumental reason or rationalism in modernity, a dichotomy forms between rationality/humans and irrational, subordinate forces/nature. This is emphasized by legislative approaches in the technical and scientific management of natural resources in Western countries, a tactic that could be interpreted as placing humanity in a position of complete control of nature (Thai-Eng, 1997:159-161).[11]

The central problem with the concept of instrumental reason is that the centrality of "reason" is nothing more than an epistemological pretension – the pretension that "reason" is a fixed, objective and autonomous principle (Loubser, 2005:13). It functions as an Archimedean point, a hypothetical vantage point from which a "rational" observer can perceive any subject of inquiry (including reality itself) with a view of totality. The idea is that such a position can view and investigate all things, but be removed from them and thereby become free from bias. From the perspective of instrumental reason, all the regularities of nature are accessible and, because of this, control of nature by human beings is possible (Loubser, 2005:14). Loubser's positioning of reason as an "epistemological pretension" underlines the fundamental problem with modernity and calls for a radical response if one wants to correct it. It is in this regard that De Chardin's work will be later explored in this study.

Though "reason" therefore provides several distinct advantages with regards to the investigation of things, the absolutization thereof unfortunately leads to some radical problems – linking directly to the philosophical subject-object problem. Alec Rogers describes the problem by stating that it is impossible "to resolve which of the subjective or physical universe ultimately contains the other" (2012:85). The difficulty with regards to the nature-human separation is that, whilst humans are the custodians of "reason", they are also ontologically imbedded in nature itself. There can be no separation between humans and nature as is the case on modernity's emphasis on rationality. (This point will also be argued for later on when discussing De Chardin.) The problem is that instrumental reason is absolutized to such a point in modernity that "reason" is viewed as some *über*-natural phenomenon. Reason thus became completely separated from nature, and a bifurcation takes place on an ontological level, although it is a false one. This dualistic ontology will be

[11] Legislative approaches are discussed in more detail in section 2.3 of this study.

discussed in further detail when describing Dualistic Ontologies later in this section. Some of the other sources of discontent of modernity must first be analyzed.

Individualism

Another key concept in modernity is *individualism*. Basically, individualism refers to the right to choose one's own patterns of life (of thinking, living, authority, and etcetera). This individualism is gained by breaking free from the moral horizon of one's birth and also from a specific place in society (Taylor, 1996:2-3). For Taylor, individualism is not so positively viewed and he links it with a loss of a broader vision, with self-absorption and a permissive society which leads to a fading of moral horizons – thus a loss of something very important for people. Richard Tarnas identifies this same aspect of individualism and says that the individual is described in modernity as self-conscious and autonomous (Tarnas, 1991:286-287). Lyon does not comment on individualism specifically, but when he discusses concepts such as differentiation and urbanism there is a clear understanding that much of the motivation for these trends in modernity could be attributed to individualism. But why is individualism seen as a source of discontent in modernity?

The problem of individualism becomes clear when Taylor criticizes the absolutization of self-fulfilment seen in modernity. He notes that self-fulfilment through individualism is coupled with the shutting out of greater concerns of a political, religious or historical nature and says that life becomes narrowed, and self-stultifying in some cases (Taylor, 1996:14,15). Furthermore, a displacement of the moral centre from an external source (God or an idea of Good) to the individual herself occurs. This forms part of the intense subjectivity of modern culture and is closely related to the concept of self-determining freedom, which is not influenced by external factors and which deals only with what the individual decides for herself (Taylor, 1996:26-27). Taylor suggests "authenticity" as recourse against the rampant individualism of modernity (as the alternate title of his book suggests).[12] He also proposes

[12] "Authenticity" as ethical orientation implies both a personal aspect – the individual's orientation toward life which is created or discovered by the self – and what Taylor describes as "horizons of significance" wherein larger human concerns function. These "horizons of significance" may include respect in human communities

that the culture of narcissism is impervious to critique because it is in line with the aspirations of modernity's project (i.e. the goal of absolute individualism, which Taylor says leads to subjectivism). Taylor therefore states, indirectly, that the project of modernity prevents its own critique (it considers absolute individualism praiseworthy), and he suggests that the existence of such an encompassing social project may play a negative role in the broader scope of morality in the social context. But what implications does modernity's emphasis on individualism have for the nature-human relationship?

Against modernity's individualistic and subjectivist background it becomes very difficult for the individual to consider other human beings except when they are of direct benefit to herself (Taylor, 1996:13-15). Nature itself is unfortunately not immune to this approach. The problem is that nature is seen as external to and separate from the individual – a separation that is intensified due to the extreme narcissistic individualism of modernity. This separation between humanity and nature becomes more perceptible through *urbanism* and is influenced by *instrumental reason*. Tarnas describes this dichotomy when he says that the modern world is regarded as having an intrinsic order which can be deduced through empirical analysis (an order not given by a cosmic intelligence) and that the focus is on the rational understanding of the cosmos and natural world rather than on understanding human nature (Tarnas, 1991:289-290).

In this scheme, nature becomes "the other", a logical construct to be analyzed through the runaway use of instrumental reason. On the other hand, the individual human is increasingly internalized in her thoughts or emotions and is removed from nature (encouraged by the individualism of modernity). By implication, the individual resides at a distance from nature and these two forces (agents) will never meet. This hints at not only a dichotomy between humanity and nature, but also at an *isolation* of both. This isolation becomes especially problematic when attempts are made to attribute value to nature. The problematique related

and beneficence towards the natural environment). In modernity an overemphasis of the former (the individual) occurs, whilst human communities are rarely considered. This leads to a situation where little or no broader responsibility or significance can be generated (Taylor, 1996).

to this dichotomy, or isolation, may have led to the environmental misuse observed today.[13] Furthermore, there is no external source left for morality through God or ideas of the Good except for the individual herself. No value can be given to nature but from humanity. Through the continuing processes of modernity and especially individualism, it is clear that human beings are increasingly separated and isolated from the natural world and are therefore ironically even less capable of valuing nature.

Secularization

The individualism and rationalization of modernity are clearly linked to another key aspect (or malaise) of modernity, namely *secularization*. Tarnas expands on the concept of instrumental reason by stating that the modern world also plays host to intense secular reasoning. He indicates that the dualistic stress of the physical world and the spiritual world has shifted greatly towards the physical, and that intellectual authority has relocated from the religious to the scientific. This may be linked with the fact that, historically, science increasingly replaced faith as the only true source of knowledge during the 17th and 18th centuries (Tarnas, 1991:286). Horkheimer and Adorno stated that this was how modernity had "disenchanted" the world, by letting myths be dissolved and substituted with knowledge. However, this knowledge did not have the effect of leading the world to liberation and triumph, but rather radiates disaster after, for example, the Holocaust which can be seen as a culmination of modernity's nihilism through secularization (Horkheimer & Adorno, 1947:3; Weller, 2011:3).

Lyon also describes this secularity as a central element of modernity which may be observed particularly in the change of religion's position in society as urban industrialism progressed. Many alternatives to older religious forms began to appear as the nineteenth century progressed (Lyon, 1994:26). Some of these were deliberately formed, while others were unintended consequences of the modern period, such as the displacement of people from their communal, highly religious contexts to cities. These secular approaches inherent in modernity culminated, in a sense, with Nietzsche's proclamation that "God is dead" and with

[13] This problem has been discussed in the previous chapter under anthropocentric and non-anthropocentric approaches to value theories.

the French Revolution that proclaimed the arrival of the secular state. These two events showed, at least in the modern context, that all that remained of religious ideas was humanity with their own rational answers to phenomena. Religion and God were no longer considered helpful or useful. Thinkers like Alexis de Tocqueville were quick to note, however, that this modern form was highly reminiscent of religious approaches that had apparently been surpassed, even though the horizon of hope had been lowered to the temporal life alone, and that sacred doctrine, martyrdom and polytheism remained in modernity. Durkheim agreed with this evaluation in a certain sense and suspected that the central forms of religion would continue to exist, except in ways more appropriate for the modern context. Georg Simmel, in contrast, felt that new and mystical forms of religions would come into being, but that something vital was ebbing away (Lyon, 1994:27). Perhaps what Simmel felt was the cold rationality of science encroaching onto the terrain of religion.

With the secularization of modernity, the obvious question arises about morality: A question is for example whether an external source of morality is necessary for humans to be able to value nature at all? Is it necessary for humans to be Godly-sanctioned stewards of the natural world or can humanity find its own responsible way of relating to nature? Secular reasoning denied the need for God, of course, and left humanity as the only authority. The consequence of this was that through modernity's secularization, humanity was separated even more from nature by rejecting her spiritual and religious links to it. Nature lost its God-given value, lost its spiritual bond to humanity and became nothing more than an object for scientific study.

Urbanism

Another key concept of modernity which led to the dichotomy between nature and humanity is *urbanism*. Whilst the pre-modern era can clearly be identified with the rural environment, the modern experience is intimately linked to large segments of populations living in settlements of 250 people or more. The era of urbanism had dawned with modernity and herein the city was not simply a higher concentration of people living in nearer proximity, but also a site of increased industrial production, a centre for money economy and great social shifts. Simmel identified the city as a microcosm through which to view modernity in all its intricacies – showcasing differentiation, commodification and rationalization. Especially identity could no longer be found in the local communities, because city-dwellers

distanced themselves from a very foundational aspect of the human condition: intimate relationships (especially wider than your immediate family). Formal and contractual relations became more important than community or communalism (Lyon, 1994: 24-25).

This formal and contractual type of relationship became a blueprint for the relationship with nature as well. The intimacy or mystique with regards to nature that was present in pre-modern approaches toward nature was lost, and a formal, contractual relationship towards nature developed through mining, commercial agriculture, nature reserves, etc. Scientific reason and inquiry into the natural world was no longer motivated by mystery, curiosity and enjoyment, but rather by the idea that research should be done with the prime goal of transforming nature into something that can be used and sold – like genetically manipulated seeds. Nature became increasingly contractualized in multiple and various ways.

Urbanism thus led not only to an increase in the physical *distance* of humanity from nature, but also to a mentally perceived distance. What city-dwellers see of nature are only the products provided by the environment. They only see the products of their contracted relation to nature and not the source or beauty of nature that generates these products. The conceptual distance between humanity and nature, and eventually the nature-human dichotomy, is therefore intensified through urbanism. To put it more radically: Urbanism has the effect of generating the perspective that a replacement of the natural environment with artificially constructed environments is taking place. Development of cities and new habitation for the rapidly increasing human population leads to the removal of "wild" nature and the establishment of artificial structures in its place. Whilst this does not imply that humanity is somehow destroying nature, it does underline, for example, Bill McKibben's worries that we are already living in "a postnatural world", in "a world that is of our own making" and that "there's no such thing as nature anymore" (1989:60,85,89). In reaction to McKibbens one can argue that whilst expanding cityscapes cannot displace nature in its entirety, the increasing omnipresence of vast cities further separates humanity from the natural world and serves to augment a perspective that sees nature as external, outside the cities and outside the lives of the individual. Hannah Arendt says, for example, that "for some time now, a great many scientific endeavours have been directed towards making life also 'artificial', toward

cutting the last tie through which even Man belongs among the children of nature" (1958:2,3).

A further aspect that is linked to the urbanism is the concept of *automation*, the idea that things in a society can be mechanized. This moves the human perspective a further step away from the natural, i.e. the idea that humans must directly do something in order for it to be done. Now, in a person's place is an artificial technical process that separates the individual human from the natural world even more. The natural world becomes an abstraction, distant both physically and mentally. We have already noted that urbanism and urbanization increases the physical distance between humanity and nature, but now it must be added that the overt technical nature of the modern world cultivates an idea that the natural world is unnecessary for human use. The problem is that once city dwellers become so used to the structured automation and technicism that underlie their everyday lives, nature is but a distant force. These technical developments are done to make life comfortable for the individual, but all the while separating nature from humanity. Loubser states that the result of a society focusing only on these automated indulgences "will always prioritize the 'wants' of the human being and only in afterthought consider the rest of [nature's] 'needs'" (Loubser, 2005:10).

Political fears

Another source for discontent with modernity is characterized by Taylor in the *political fears* that are generated mainly by individualism and instrumental reason. He states that modern society as a whole forms an "iron cage" that causes specific political fears of "insignificance" and "powerlessness" (Taylor, 1996:98). This "iron cage" is created according to Taylor by the increasing fragmentation and differentiation in society which led to a strong feeling that the individual can have no influence on the direction of society or in the political sphere. This "iron cage" is also relevant with regards to individuals' feeling and attitude of powerlessness about what happens regarding environmental management - especially in terms of misuse of nature. Taylor therefore states that a new common understanding in opposition to fragmentation and differentiation is needed to change the direction of modern development -

- both political and technological. He says that people should realize that the degrees of freedom are not zero when faced with institutional influences (Taylor, 1996:100,101).

All too often, however, instrumental reason serves the ends of control and technological mastery in the modern context (Taylor, 1996:105) and the problem is that this "iron cage" appears to be eternally present around the individual. Individuals therefore feel isolated and unable to alter political forces, even with regards to environmental issues. There is a thus a distinct sense that the individual can do nothing to alter public policy, let alone halt environmental misuse.

Discontent and dichotomy in modernity

The above discussion on the sources of discontent in modernity illustrates modernity's various problems, especially regarding the dichotomy it creates between humanity and nature. This dichotomy (between humanity and nature in modernity) leads to a wide range of problems not only with regards to nature, but socially as well. These problems are manifold and linked to each other. Firstly, there is in modernity an inherent belief in the power of human reason and an unshakeable faith in the idea of progress. This is coupled with the advancement of science and technology, even at the cost of the environment. Furthermore, with modernity there is a dismissal or marginalization of tradition and religion, and it is replaced by the secular "religion" of progress. Unrealized optimism and inherent doubt, however, fostered by post-traditional thought became more prominent in the later phases of modernity. Whilst the achievements of science and technology are undeniable, the everyday questions of authority and personal identity continue to loom. Science did not provide solutions for the majority of social or natural problems and it seems incapable of doing so in the future without direct human intervention. Modernity affected not only the economic, scientific, political and technological spheres, but also the cultural, social, environmental and religious.

Furthermore, with modernity, personal identity is not derived from traditional perspectives but is constructed internally by the self. This is linked to a meritocracy (as discussed in the Differentiation section) which puts nature at the disposal of human achievement and recognition. Inherent in the ideas of modernism are rationalism (in the sense of observation

and calculation of outcomes) and urbanism, which both contribute to the nature-human dichotomy. As indicated earlier, some consequences of this dichotomy are alienation from nature and eventually exploitation of nature. Modernity also created (according to Taylor) a feeling of "loss of direction" and the sense of being in an "iron cage" with no control over one's personal life. All of these problems directly (or indirectly) link to and influence modernity's culture of misuse of the environment.

The most problematic element of modernity is however the idea of humanity as being in opposition to nature, the fostering of a nature-human dichotomy. Rolston says that "somewhat ironically, just when humans, with their increasing industry and development, seemed further and further from nature, having more power to manage it, just when humans were more and more rebuilding their environments with their super technologies, the natural world emerged as a focus of ethical concern" (Rolston, 2011:1). In other words the distance created by modernity between humans and nature increasingly leads to the realization that there cannot be complete separation between the two. The separation is and will never be complete, and the opposite, namely a close responsible relationship, is rather what the future entails. This closer relationship asks for an ethics of responsibility, a specific type of ethics which will be discussed later in the section Modernity's environmental consequences and the need for sustainability.

The dichotomy of modernity has its roots, however, much deeper than the sources of discontent with modernity. Although these sources of discontent may influence humanity's separation from nature, I would suggest that these sources of discontent are motivated by more fundamental worldview characteristics found in modernity. Two fundamental roots that influence the other aspects or malaises of modernity (as discussed in the previous sections) may be identified in modernity: these are *dualistic ontologies that are continually generated in modernity* and the formulation of *neo-capitalism as absolute*. It should be noted that these two roots are not implied to be the only root causes that have an influence in modernity. However, these two are identified as centrally important to the study's investigation of the nature-human dichotomy.

Root 1: Dualistic ontologies

The nature-human dichotomy is not only a by-product of modernity, but it is based on dualistic ontologies which developed in modernity. Ontological dualisms are part of the intellectual substrate of a culture and these cultural motives should be considered as something that has develops over time (Loubser, 2005:2). Modernity, in particular, is a period with strong dichotomous notions on a variety of subjects, including the dualism between humanity and nature (Tarnas 1991:417). A central factor of modernity that is therefore especially pertinent to the current discussion are its dualistic ontologies exemplified in the thought of Kant (1724 – 1804) and Descartes (1596 – 1650).

Descartes in particular was a metaphysical dualist who saw mind as radically different from body, fundamentally separating these two aspects of existence and fashioning dualistic ontologies (Melchert, 2010:367). Descartes' philosophy illustrates a central problem regarding the ontology of scientific reason, which formulates a fundamental dichotomy between body and mind wherein the world is conceived of as a mechanistic realm of extended material objects which are mysteriously connected to the spiritual via consciousness or the mind (West, 1996:98). Descartes' approach towards nature specifically is also telling of this dualistic stance and in his *Discourse on Method* he states that humanity can and should use nature for its own advantage, that "we could use [nature] in the same way for all purposes for which they are fit, and in this way make us masters and possessors of nature" (Descartes, 1647: 28). This comment by Descartes is distinctive of, firstly, a dualistic view between nature and humanity, and, secondly, a dualistic view of the logical or rational (personified by humanity) and the irrational (found in nature). This last point, which leads to an idea that humanity can somehow control nature, was discussed earlier in this section under the heading Instrumental Reason. Descartes' statement also describes a reduced, exploitable nature, wherein humanity has dominance due to its technological control (Loubser, 2005:8). For the rationalists, the Archimedean point was reason, and it is from this fundamental perspective that many of the dualistic relationships in modernity were formed (Dooyeweerd, 1953:12-13).

This dualistic ontology, which was fashioned in a certain sense by Descartes, is also seen in Kant's thought later on. Kant believed that humans were morally autonomous and that humans chose their own moral laws. Kant also stated, however, that humanity is immature and did not use its capacity for reasonable thought. Furthermore, he believed that the accumulation of choices determines the life of the individual as a natural law (Kant, 1992:22-36; Loubser, 2005:13). Kant was an ardent advocator of "der Mensch als der Mittelpunkt" or of the rational human individual as centre of the world. Kant's categorical imperative, and his idea of the rational human as centre of the world – a radical and exclusivist anthropocentric stance that is both method and worldview – leads to a moralistic anthropocentrism. Such an approach can only lead to a position where nature is only indirectly protected and valued mainly for its utilitarian function (Msafiri, 2007:60-62). This indicates that the intensely dualistic ontologies that developed in the thought of Kant, the idea that humanity and nature are different in a very fundamental way, leads to an exclusivist anthropocentric axiology that (as discussed earlier in this study, in the Contextualization section) was found to be lacking. Instead, a "weak" or "broad" anthropocentrism was then suggested as axiology that would deal most responsibly with nature in comparison to the other axiologies evaluated in that section. However, the point is that modernity encourages not a more responsible type of "weak" anthropocentrism, but rather an exclusivist anthropocentrism. This is encouraged by the fundamental dualistic approach of modernity and is enhanced through the way in which science, for example, is practiced today.

The dualistic ontologies of modernity have spiralled outward into different aspects of society, greatly contributing to a view of nature and humanity as two fundamentally different forces. What is interesting about the dichotomies in modernity is not just that they are framed as binary opposites, but also that the balance between the two is often shifted strongly in the direction of only one pole. Thus, for example, in the nature-human dichotomy of modernity, we see that the human (and thus the individual) is perceived as much more important than the natural world itself. However, the natural environment affects humanity directly and its instrumental value is clear: we drink water, gather food from the natural environment, make use of its resources for production, etc. (Fern, 2002:2). To view humanity as the only viable pole in this relation therefore creates a paradoxical stance. Ironically, humanity has often misused nature whilst knowing that nature's protection (and value) is necessary for human survival.

The problem with dualistic ontologies, such as those found in modernity, are thus that they are inherently unstable and unsustainable (Loubser, 2005:1). Nowhere is this clearer than in the dualistic relationship between nature and humanity in the current age.

Root 2: Neo-capitalism as absolute

A second fundamental factor or root that has contributed immensely to the misuse of nature is the neo-capitalist economic system that modernity propagates. Modernity's rhetoric has clear neo-capitalist applications. This economistic approach has been mentioned before in Modernity's project of progress, but emphasis is necessary here: In modernity there is the fundamental idea of progress, and such progress is measured in economic terms. Loubser formulates this point as follows: "... the belief in progress has been rewritten slightly into the belief that economic growth must be unending and limitless" (2005:19). She, for example, postulates that most current forms of environmental management are trapped in the "nature vs culture" dialectic and that, in some influential cases, it takes a *capitalist* (technicist) form (Loubser, 2005:2). This capitalist form is closely linked to modernity's fundamental characteristics, linking with Kronman's idea that *economism/commercialisation*, *secularization* and *technocracies* form the "trinity of modernity" (1983, 47). Such a capitalist approach leads to an over-emphasis of only one aspect of life – neo-capitalist economism and the reduction of everything else in life to monetary terms (Van der Walt, 2013:38).

Modernity's belief in *progress*, therefore, is only justifiable if such progress can be practically measured, in line with a modernistic pragmatist approach (Loubser, 2005:19). It is thus not surprising that the main method employed in environmental decision making is cost-benefit analysis, or CBA. This analysis method is based on the idea that an individual's welfare means to "satisfy a person's preferences", where "satisfying preferences" is measurable in the individual's willingness to pay for the satisfaction of said preferences (O'Neill *et al*., 2008:54-55). In terms of projects that affect the environment (for example, rehabilitating a wetland or installing purification systems to clean drainage from mines from harmful substances), such projects will only be deemed legitimate if the ratio of benefits to

costs is produced. Thus, when utilizing the CBA there is the pursuit of most efficient outcome. This efficient outcome is determined by means of the Kaldor-Hicks compensation test, which is formulated as follows: a situation A is better than situation B if the gains associated with situation A are greater than the losses associated with situation B; with the added criterion that the gainers could compensate the losers and still be better off (O'Neill *et al*., 2008:55). This approach has clear negative implications when applied to the field of ecological and environmental issues. These include:

1) *Willingness to pay*: Raw monetary measures are a very crude measurement of the interests of public parties affected by environmental decisions. The reasons for this are two-fold: Firstly, willingness to pay depends on a person's budget. This means that the rich have a greater ability to determine what good environmental decisions are than the poor. Such an approach implies that the rich are more capable of making responsible environmental decisions than the poor, which is not necessary a valid estimation, and also that environmental choices based on CBA will usually benefit the rich whilst damages are borne by the poor. Secondly, willingness to pay cannot truly capture the interests of those who will be affected by the CBA: The natural environment and the future generations of humanity. Even though these entities may be considered by those who make the decisions, by no means does the CBA entail that proper weight will be given to their interests (O'Neill *et al*, 2008:55-56).

2) *Flaws in the Kaldor-Hicks compensation test*: The compensation test utilized in CBA is also open to distributional objections. Sen states, regarding the possibility of hypothetical compensations offered by the Kaldor-Hicks test, that the principle is either redundant – if compensation is paid there will be a real improvement – or unjustified – no consolation can be given to affected parties if compensation is not paid, as these are often members of society who are worst off (Sen, 1987:33). The point is that no requirement is made through CBA decision-making for compensation to actually be paid. Furthermore, there may be no sum of money that will be accepted by certain agents in compensation for their loss. Mahalia, a member of an indigenous community from the Narmada Valley in India, when threatened with displacement as a result of dam construction, said: "You tell us to take compensation. What is the state compensating us for? For our land, for our fields, for the trees along our fields. But we don't live only by this. Are you going to compensate us for our forest? ... Or

are you going to compensate us for our great river – for her fish, her water, for vegetables that grow along her banks, for the joy of living beside her? What is the price of this? ... How are you compensating us for fields either – we didn't buy this land; our forefathers cleared it and settled here. What price this land? Our gods, the support of those who are our kin – what price do you have for these? Our adivasi (tribal) life – what price do you put on it?" (Mahalia, 1994; O'Neill *et al*, 2008:56-57). CBA implies that all factors of life may be evaluated in monetary terms, but money is not the sole criteria to be applied to life and the environment (Belshaw, 2001:57; Van der Walt, 2013:38). This often happens in situations where the perspective shifts from money as *tool* to money as having worth *for its own sake* (Belshaw, 2001:58).

3) *Discounting the future*: A further aspect of CBA is the tendency of violating the principle of giving equal consideration to all individuals. Instead, costs and benefits are weighed differently depending on the time in which they occur with more emphasis placed on the present (or short-term) than on the future. The further into the future, the lower the attributed value. The implication is that the preferences of the current generation be satisfied immediately and, more seriously, that current preferences count more than those of other future individuals. This has direct bearing on the way that humans engage with the natural environment and suggests that individuals would prefer short-term misuse of nature rather than a more long-term sustainable approach – even though some future harms may be predictable and certain near-future benefits may be relatively tentative (O'Neill *et al*, 2008:57-58).

The problems associated with the CBA may be summarized by stating that certain elements of the natural environment – such as clean water and air, particular habitats, endangered species and culturally important places – cannot be valued adequately in economic terms and should not be approximated by using such criteria, even though the use of such criteria are encouraged in the neo-capitalist slant of modernity. Furthermore, even though economic evaluations may be linked to certain elements of the natural world, this should not imply that money could serve as adequate substitution for losses in these areas (O'Neill *et al*, 2008:58).

Economism presents economics as an ideology that absolutizes supply and demand. Supply and demand are considered the central criteria for evaluating decisions (per the CBA-type approach) and no other factors are considered influential. A blind faith in the *laissez-faire* system or an "invisible hand" leads to the making of decisions in various realms of human life that extend beyond the threshold of markets and the direct influence of economics. When this approach of simple economic considerations is applied to environmental issues, the result is often problematic (Belshaw, 2001:51).

2.3. Modernity's environmental consequences and the need for sustainability

In the previous part of this chapter it was indicated that the various sources of discontent in modernity, identified by philosophers such as Lyon and Taylor, link very strongly with the dichotomy of modernity which led to various problems regarding the nature-human relationship. In this section it will be indicated what modernity's consequences for the environment are and why a reformulation of the environmental approach, an overcoming of the human-nature dichotomy, is necessary.

The large sphere of influence that is characteristic of the relationship between humanity and nature shows how essential a sustainable relationship is. Occurrences such as desertification, increasing global deforestation, pollution, loss of species diversity and habitats highlight the growing pressures that this relationship faces (O'Neill *et al*., 2008:1-2). Unfortunately humanity sees itself as separate from the natural environment in modernity, only taking from nature what is necessary or useful. Because there are only limited and mainly non-renewable resources in nature, this is an unsustainable approach. In economically developed countries there is, for example, a strong drive towards production (and overproduction) which leads to exploitation.

The point is also made in the *Millennium Ecosystem Assessment* (hereafter MEA), a research synthesis project that integrates the research of over 1000 leading biological scientists on the state of the Earth's ecosystem and which provides guidelines for political decision-makers on

how to approach these environmental issues. In this report it is highlighted how problematic the modern approach of "production, overproduction and exploitation" is. The assessment begins with an unambiguous warning, stating that "human activity is putting such strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain further generations can no longer be taken for granted" (MEA, 2005:6-19). This is a central facet of environmental ethics: Not that humans will destroy the natural environment, but rather that the natural environment will be changed in such a way by human influence that human existence can no longer be sustained by it. Paul Crutzen identifies, for example, the Earth's next geological epoch as *Anthropocene*, an informal term that identifies humanity's activities as having a significant impact on the Earth's ecosystems (Crutzen, 2006:13-18).

The main findings of the MEA include several aspects central to environmental conservation in the current age. It suggests that over the last 50 years humanity has changed ecosystems more extensively than in any comparable period of human history. This was done largely to meet human demands for more food, lumber, and so on, and has led to substantial and largely irreversible loss of bio-diversity. However, these changes to natural ecosystems have contributed to increased human well-being and economic development (MEA, 2005). The question is whether these economic developments are justifiable in light of the damage caused to the natural environment of the Earth which include, but are not limited to, the degeneration of ecosystems. The types of problems identified with these damages will most probably greatly diminish the benefits that humanity may obtain from ecosystems. The findings of the MEA are best summarized as follows: "The bottom line of the MEA findings is that human actions are depleting Earth's natural capital, putting such strain on the environment that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted. At the same time, the assessment shows that with appropriate actions it is possible to reverse the degradation of many ecosystem services over the next 50 years, but the changes in policy and practice required are substantial and not currently underway" (MEA, 2005). Kofi Annan, Secretary General of the United Nations, refers to the same situation sketched in the MEA when saying that "contrary to popular belief, we do not face the choice between economy and ecology. It is often said that protecting the environment would constrain or even undermine economic growth. In fact, the opposite is true: Unless we protect resources and the Earth's natural capital, we shall not be able to sustain economic growth" (MEA, 2005:1).

One can say, in light of the MEA findings, that environmental ethics deals with nothing less than the continued survival of humanity. Various environmental ethics approaches have developed over the years, but these approaches can be grouped in two main categories. The two main ways to approach the ethics that govern humanity's responsible use of nature is firstly *practical* (including legislation, voting and pricing), and secondly *responsibility in a broader context* (influencing people's ethics and worldviews) (Belshaw, 2001:39-92).

1) Practical (including legislation, voting and pricing)

Although approaches with regards to environmental issues directly and fundamentally involve philosophical and ethical commitments, these issues also have a distinctly political, scientific and social character (O'Hear, 2011:vii). Many practical approaches attempt to solve these dilemmas and in the next section these approaches will be described: Legislation, voting and pricing.

Legislation

Legislation is the primary means by which many governments attempt to regulate the negative influence of their industries. In a certain sense this is a sensible approach, as it is practical, enforceable, and measureable. This approach is similar to deontological ethics approaches, or rule-based approaches (McNourghton & Rawling, 2006:31-34). However, history has shown that this approach has failed dismally with regards to the global protection of the natural environment from humanity. The main problem with legislative approaches is that something is considered wrong only if it is illegal, rather than arguing that it may be wrong due to further considerations. A decision may be bad, whether legal or not (Light & Rolston, 2003:3). Legislative protection of the environment is like a stopgap, and does not engender longer term thinking about the fundamental reasons for these laws or regulations or the cultivation of a perspective of respect for the natural world. If legislation are the only means for protecting nature, how could one protect nature against the exploitation of

loopholes in legislative approaches, or against outsourcing one's business to countries that have a more lax perspective with regards to environmental protection?

A further problem with the legislative approach is that bad laws exist, such as Apartheid laws in South Africa which may easily be evaluated as bad or immoral. Does this same evaluation of "bad laws" possibly apply to laws that govern emission of greenhouse gases or whaling? In addition, laws do not always conform to private morality. Views on abortion and lying are both open to public deliberation and legislation, but also have an influence in terms of private morality. These two points illustrate that laws cannot be relied on solely as a means to deal with environmental dilemmas (Belshaw, 2001:41). Thus, laws must be enforced for them to have any effect, are usually generated using hypothetical perspectives that do not relate directly to the natural environmental issues, and laws are not always integrated in society in such a way that people do not wish to act unlawfully even if there is no risk that they will be caught out.

Another important factor that should be kept in mind is that legislative approaches contribute to an idea that humanity is in control of nature, causing a separation between humanity as steward and nature as irrational force to be tamed (Thai-Eng, 1997:159-161). These perspectives are changing, however, and people are becoming more aware of the many negative effects of this idea of human mastery. These negative effects become visible in the decline in natural biodiversity as the result of human interventions that alter the ecology, for example, by building dams (Loubser, 2005:11). The *Millennium Ecosystem Assessment* states that whilst increasing demands placed on the natural environment could partially be met, it would involve significant changes in policies, institutions and practices (MEA, 2005). These changes are not being implemented, however, casting more doubt on legislative protection of the environment as viable means to prevent further natural damage.

Voting

Many people argue that environmental problems may be due to the ineffective functioning of political systems and that more effective functioning of these systems may solve said

problems because more people would have a say when it comes to environmental issues. This reasoning implies that businesses and non-representational governments cause a lot of environmental problems, and there is some evidence to support this. In places of the world where democratic systems are relatively undeveloped, such as the Eastern Bloc, there are more environmental problems than in countries that have fully integrated democratic systems. However, even democratic governmental systems do not guarantee a more responsible perspective with regards to nature. Not all voters, for example, are interested in or aware of environmental issues (Belshaw, 2001:42,47).

However, there are arguments that present voting as a viable alternative for dealing with environmental issues to at least some degree. Firstly, self-interested companies and businesses may also pursue other interests that have an influence on environmental issues (Belshaw, 2001:47-48). This is especially pertinent if the public wishes to support companies with a corporate citizenship reputation (which partly would include responsible business practices towards the environment, maybe even protection of the environment in areas where these companies and businesses operate). Furthermore, few businesses and companies would survive in environments wherein workers are adversely affected. Secondly, the public tendency is towards conservatism and resistance to change, further curtailing major environmental damage or misuse – especially with regards to technological change. Finally, in a democratic society there is the opportunity for conversation and debate. According to Christopher Belshaw, education, rationality and knowledge are fundamentally linked to each other and to democracy in a democratic society. Such reasonable approaches to nature (beyond mere instrumental reason as postulated in modernity – see section 2.2) and concern for other and the environment may lead to a better relationship between the citizens in a democratic society and nature. These three factors illustrate that a democratic society may go some way towards suggesting a solution for dealing with the environment. However, this should not be taken to imply that a democratic society would serve as a *per se* solution for environmental problems; otherwise, there would be no environmental damage or misuse in democratic developed nations. Belshaw states that due to flawed human nature it is not surprising that democratic systems are imperfect; one can see this particularly when looking at how democratic societies deal with the environment (Belshaw, 2001:48).

The central question concerns the ways that people vote in a democratic society. Do people vote for their own interests or for the greater good (even when that greater good may include the non-human)? In an ideal situation, with all voters equally well informed and rational, both the interests of the greater good and the interests of the individual would intersect. However, democracy is directed at harnessing the power of large numbers of individuals who vote for self-interest and most voters vote in this way. No voice is given to the natural environment or to future human generations, which generates a problematic relationship between democratic societies and nature. Furthermore, the realistic assumption must be made that some people in a democratic society will not consider environmental problems or will be ignorant of such issues (Belshaw, 2001:50). Another avenue should be considered, if one attempts to practically address the situation.

Pricing

A system that may be considered as contrasting with the free voting system is that of pricing and marketplace factors. A contemporary belief in the ability of market considerations to influence (and even determine) public policy is observable in many developed countries, with the role of direct governmental influence reduced to a lesser role (Belshaw, 2001:50-51). Belshaw argues that market considerations may well lead to more acceptable and coherent environmental policies and that a free market may benefit the natural environment (2001:51). However, I agree with Belshaw that there are certain limits to what marketplace factors may contribute to the environment. Furthermore, if one suggests that marketplace factors play a leading role in environmental management it would be easy to slip into the problematique associated with economism, as described in section 2.2.

When voting each individual has a say in a variety of different subjects, but none of these need necessarily be related to what a voter values. Furthermore, greater numbers do not imply greater concern, and may negate the influence that a small number of individuals who are committed to the environment may have in favour of greater numbers that do not necessarily value the environmental concerns present today. Money and allowing markets to determine policy allows one to rank preferences according to the various costs and benefits

involved. Once again, the limits of CBA must be kept in mind here (section 2.2 described the limits of this analytic technique in more detail). Furthermore, governments can impose limits on environmental damage. For example, pollution could be minimized if penalties that force compliance are imposed from a governmental level (Belshaw, 2001:51-53). However, this leads to a further situation where the minimum commitment to environmental protection is enough (similar to other legislative approaches discussed earlier in this section).

Although Belshaw argues in favour of marketplace influences and pricing as a good way to approach environmental problems, I believe that the objections which could be made to such an approach imply that economic measures could only play a very limited role in environmental preservation. The objections were noted in the section on Neo-capitalism as absolute.

Conclusion

Although the previous section presented several arguments for practical approaches towards solving environmental problems (through legislation, voting and pricing), I do not believe that any of these approaches, singularly or in unison, could truly provide a viable long-term solution to the environmental problems facing the world today. The reason, in my estimation, is that none of these practical solutions go to the roots of the true problems identified in modernity (especially with regards to the nature-human separation that is cultured). A long-term, sustainable solution would have to address this problematique generated in modernity and not be based only on ease of practical implementation.

To that end, I propose that a more philosophical approach is required for humanity to truly stand in a mutually beneficial relationship with nature: One should first attempt to alter people's perceptions on the issues by engaging with their worldviews before applying practical measures to environmental problems. Furthermore, these practical approaches do not address the root causes of the dichotomous nature-human relationship that developed in modernity and attempt only to address superficial effects of this dichotomy. Responsibility in

a broader context engages with people's ethical perspectives and worldviews. Broader responsibility is more difficult to implement than approaches such as legislation, voting and pricing because implementation depends on humanity's education concerning appropriate approaches towards nature for long-term sustainability and the willingness of societies to change in such a way. The second way to approach the ethics that govern humanity's responsible use of nature through broader responsibility is discussed in the next section.

2) Responsibility in a broader context (influencing worldviews and ethical perspectives)

The central problem with the practical approaches discussed in the previous section is that they do not engage with the public consciousness in a sensible way. People's money and legal statuses are involved, but not their "hearts and minds". It is postulated that responsibility should be cultivated in a broader context, with the human being as part of the natural world instead of attempting to solve environmental problems by throwing money at it or creating more legislation. Such a broader responsibility can only be established by influencing people's worldviews and ethical perspectives. Additionally, an ontology presents a singular view that integrates both worldview and ethics aspects, presenting a far-reaching alternative to modernity's approach to the nature-human relationship. If this ontology is then capable of overcoming the dichotomous relationship between humanity and nature that developed in modernity, it could generate a more responsible way for humanity to deal with nature. This new worldview and ethical framework would not be prescribed or enforced, but would rather be fundamentally understood and incorporated into a more sustainable human perception of nature.

A worldview is a fundamental cognitive orientation of an individual or society encompassing the entirety of that individual or society's perspective on reality and knowledge. These include fundamental, existential, and normative postulates; or themes, values, emotions, and ethics (Palmer, 1996:114). The term is derived from the German word "Weltanschauung", a term composed of the words Welt ('world') and Anschauung ('outlook' or 'view'). It is postulated that any ontology that presents an alternative to modernity's worldview should be

coherent and universally applicable. (De Chardin's philosophy presents such a worldview as will be discussed in the next chapter).

In addition, such a worldview should allow the development of ethical frameworks that generate the perspective that protection of the natural environment is good regardless of legal motivations. Ethics has been practiced in the West for the last 2,500 years, attempting to make sense of intuitions that tell if something is wrong, whether it is legal or not. In this sense, ethics becomes a guide of what law ought to be. The scope of ethics is much broader than the realm of law: It includes all human duties and obligations, virtues and vices, as humans interact with each other (Light & Rolston, 2001:3). In contrast to legislation, "ethical protection" could be a much better approach towards dealing with environmental issues because it engages on a broader responsibility level with people's actions.[14]

O'Hear states that whilst the issues of environmental ethics are immediately political and scientific, one's stance on the issues of environmental ethics also reflects fundamental and basic philosophical and ethical commitments (O'Hear, 2011:vii). This highlights that practical approaches should not be seen as the only methods to attempt to deal with environmental problems. In a fundamental way, any ontology that is suggested as answer to the nature-human dichotomy of modernity should present a coherent worldview (and ethical perspective) that could be incorporated into the public discussion as replacement for said dichotomy. In this way, people are able to act in a morally responsible way towards nature, rather than being coerced into such an approach. This approach would lead to a broader sense of responsibility towards the natural world.

[14] A general study of ethics is directed at two basic questions: Firstly, what is the good life, and secondly, what sorts of things are good in themselves (Light & Rolston, 2003:3). As was discussed in the Contextualization section, to claim that something such as nature has value beyond human perception may be seen as a non-anthropological pretention. Furthermore, even if such value could be postulated to exist in something like nature, it is still humanity that must recognize this value and react towards it in a certain way. Otherwise, the idea of inherent value in nature is nothing but a purely intellectual exercise that has little bearing on true societal change.

2.4. Chapter conclusion

The previous section of this chapter suggested that there are two broad approaches to developing a more sustainable relationship between humanity and nature with regards to overcoming the nature-human dichotomy that developed in modernity. These two approaches are either *practical* or depend on generating *responsibility in a broader context*. Practical approaches to the problem include (1) establishing laws and other legislation to protect the natural world from human influence, (2) letting economic and market factors determine the correct way to deal with the environment or (3) establishing a more sustainable relationship between humanity and nature through voting and the cultivation of more democratic societies. Each of the practical approaches' main points were discussed, but it was stated that practical approaches alone could not solve the current environmental crisis due to a myriad of problems associated with such approaches. Fundamentally, these practical approaches did not engage people's "hearts and minds" and did not address the basic dichotomous nature-human dichotomy that developed in modernity. It was therefore suggested that the cultivation of broader social responsibility towards nature was a more sensible way to go. This broader social responsibility could be achieved by presenting an alternative ontology (such as De Chardin's) that cultivates such a broad responsibility, which could in turn influence people's worldviews and ethical stances. Furthermore, the type of worldview or ethical stance that generates such a sense of broader responsibility towards nature could replace or alter the dichotomous nature-human perspective that was generated in a modernistic worldview.

The first section of this chapter investigated the nature-human dichotomy of modernity as cause of the anthropocentric / non-anthropocentric dualism that is presented as option in secular environmental ethics. Several factors in modernity influence the idea that nature and humanity are separate from each other. These factors include *differentiation, instrumental reason, secularization, individualism, urbanism* and *political fears*. Whilst these elements all play a role in separating humanity from nature in a very direct way in modernity, it was suggested that two roots could be identified that influenced all these factors, causing humanity to see itself as separated from nature. These two roots were identified, in this study and with specific relation to the nature-human dichotomy, as *dualistic ontologies* and *neo-capitalism as absolute*.

Modernity is a hotbed for the generation of dichotomies which as formulated as binary opposites, wherein the focus is generally shifted in the direction of one of the two opposites. One option becomes the focus of the dichotomy, usually the option that modernity's ideology presents as worthwhile, while the other becomes an opposition for this worthwhile option. Thus, for example, in the nature-human dichotomy we see that humanity is considered much more important and central than the natural world itself. Another dichotomy in modernity is the notion of science "versus" religion, where modernity determines that science is a worthwhile pursuit and that religion is a remnant from previous historical eras. The focus of modernity on progress rather than tradition (itself another dichotomy) means that religion is perceived as irrelevant in a modernistic context. Thus, modernity fundamentally functions by identifying a dichotomy and motivating a choice for one of the opposites rather than the other.[15] In modernity there is also the idea of progress, and such progress is measured in economic terms (or according to neo-capitalist criteria). In this view economic growth must be unending and limitless, which directly leads to overproduction and environmental misuse due to the misuse of natural resources and associated environmental damage.

The influence of these two root problems of modernity may be seen in current environmental damage, as identified in reports such as the MEA, and show that there is a need for sustainability. A more sustainable relationship towards nature may be developed by overcoming the nature-human dichotomy of modernity. Some attempts to address the nature-human dualism without re-evaluating the fundamental relationship between humanity and nature have been made. Loubser says that "although some movements recognize the existence of a [nature-humanity] dualism, they follow 'substitution techniques' to dissolve the tension and fail as a result. With 'substitution techniques' I refer to those techniques that exchange one of the oppositions with another concept. An example of this can be found in Dooyeweerd ('nature' versus 'freedom')" (Loubser, 2005:3). Such an approach will not be attempted in this study. As stated before, a reformulation of the nature-human dichotomy is needed on a fundamental level. Simply replacing one element of the dichotomy with another will not be sufficient, as one then still remains confronted with a dichotomy that could place

[15] Interestingly, the elements of the dichotomy need not be seen as opposites, as will later be argued regarding the apparent nature-human dichotomy. However, modernity often sketches these elements as opposites.

more focus on one aspect or another. One may go even further and attempt to replace the dichotomy with a relationship between three elements, or four and more. However, the question of balance of interests between these elements remains.

A possible reformulation of the nature-human relationship that could contribute to current environmental ethics, without simply presenting another dichotomy, is the philosophy of Pierre Teilhard de Chardin. This alternative approach will be investigated to assess its possible contribution to the present dilemma and whether it could truly overcome the nature-human dichotomy in a sensible way. The approach that is suggested by De Chardin's work is one of unification, and it is therefore a fundamental reformulation of a separation between humanity and nature into an integrated perspective between the two forces. In the next chapter, De Chardin's ontology will be presented as worldview that presents broader sense of responsibility towards nature which could replace the dichotomous nature-human perspective of modernity.

CHAPTER 3: TEILHARD DE CHARDIN'S PHILOSOPHY

This chapter introduces and evaluates the philosophy of Pierre Teilhard de Chardin as a possible alternative to the nature-human dichotomy described in the previous chapter. It will be suggested that De Chardin successfully reframes the relationship between humanity and nature in such a way that a more responsible approach towards nature could be cultivated. De Chardin does this mainly through his suggestion of a cosmogenesis.[16] The question will be asked whether De Chardin's cosmology provides new avenues of investigation into a closer and more sustainable relationship between humanity and the natural world.

To answer this question the relevance of De Chardin's philosophy will first be indicated, then a short biographical introduction to De Chardin's thought will be presented, and then the focus will be on one of De Chardin's most influential books, namely *The Phenomenon of Man* (1959). The contribution of this book will be discussed under the headings 1) The universal process of increasing complexity of consciousness, 2) The individual threshold of reflection (The arrival of humanity), 3) The collective threshold of reflection (The social phenomenon) and 4) Final notes and clarification of some concepts and argumentative points.

In the second part of this chapter the question will be asked about which problems may be present in De Chardin's philosophy. Here, De Chardin will be discussed as mystic, as pseudo-scientific, as charlatan with words, his choice of evolutionary theory as starting point, his philosophy as modernistic and his cosmogenesis as anthropocentric. In the fourth chapter De Chardin's philosophy will be more directly applied to environmental ethics in an attempt to answer the main research question, namely: *Could De Chardin make a worthwhile contribution to environmental ethics, specifically by allowing a new evaluation of the nature-human dichotomy that differs from the perspective that was developed in modernity?*

[16] This term will be described in full detail when discussing De Chardin's philosophy.

3.1. Pierre Teilhard De Chardin

The question that will be posed in the first part of this section is: *Does De Chardin's cosmology provide new avenues for investigation into a closer and more sustainable relationship between humanity and the natural world?* To answer this question, De Chardin's work and relevance must first be introduced.

Relevance of De Chardin

De Chardin's work has been read and accepted in contrasted ways and different criteria have been used to evaluate it. Karl Stern, for example, said in *The Wind and the Rain* (1962) that De Chardin is in the unenviable position where "some scientists regard *The Phenomenon of Man* as unscientific and some theologians regard it as unsound" (1962:75-76). Whilst Stern's estimation is perhaps accurate, one must wonder if De Chardin's project of combining insights from both science and religion was not doomed from the start. Whilst theologians claim that all of creation, even that which can be investigated by science, is the domain of God, they rarely attempt to go beyond taught traditional dogma to engage with scientists. Any engagement from theologians with science seems to become a defence of their own interpretations of religious texts or taught dogma, rather than investigating and questioning science as an alternative means for enquiry into God's will.[17] On the other hand, many scientists disregard any claims made by religion. Religion and questions of God are considered beyond the realm of science, and therefore deserve no attention or consideration in the cold calculating world of the laboratory or workshop.[18]

Both positions indicate some level of intellectual arrogance, and at the very least this makes discussions that link ideas of religion and science difficult. This would not be problematic if the two disciplines were isolated and commented only on their own spheres of observation,

[17] There are, as always, exceptions to this observation.
[18] Again, it should be remembered that there are exceptions to this rule.

but in reality both disciplines inhabit the same world and present two different images of this world based on what they have similarly observed. I believe that De Chardin's quest to bring these two disciplines together (however flawed it may or may not be) is noble. Fothergill, for example, called De Chardin's attempt at reconciliation between the two disciplines deeply touching (1964:24). I furthermore consider this attempt especially appropriate for today's intellectual climate, wherein ruling ideological perspectives and meta-narratives take the place of open-minded and imaginative investigation into the cosmos. Furthermore, and more urgently, this planet has a single natural environment that is shared by both religious and non-religious people alike, by the scientist and the theologian (these terms are not meant to be mutually exclusive). The basic answers that are postulated for questions of science and religion, whether seeing these two fields of inquiry as dualistic or holistic with regards to the other, has a direct bearing on humanity's current approach towards nature conservation / preservation or damage.

The relevance of De Chardin's philosophy is not only situated in its attempt to reconcile scientific and theological stances on nature, but also because of its huge influence on prominent researchers and leaders. De Chardin has inspired a variety of figures, including Al Gore, John Perry Barlow, Christian de Duve and Mario Cuomo. Marshall McLuhan, for example, cites De Chardin when defining his emerging global-village vision. This indicates that, at least in a public context, De Chardin's ideas have a prominent influence even though he as author remains rather obscure. In the field of theology and philosophy his ideas have also had a prominent influence. Jennifer Cobb Kreisberg describes how "Teilhard and his Russian counterpart Vladimir Vernadsky inspired the renegade Gaia hypothesis (later set forth by James Lovelock and Lynn Margulis), according to which the global ecosystem is a superorganism with a whole much greater than the sum of its parts" (Kreisberg, 1995). This Gaia hypothesis is now widespread across the world and has a tremendous positive influence on environmental ethics. The works of Anne Primavesi, for example, focus on linking the Gaia hypothesis and theology.

The relevance of De Chardin for theology is also undeniable.[19] In the South African theological context, for example, there has also been renewed interest in De Chardin's work and life. The book of Jaap Durand entitled *Evolusie, wetenskap en geloof* (2013), translated: Evolution, science and faith, is a testimony hereof and the book deals extensively with De Chardin's philosophy's value for environmental issues of today. The book describes how De Chardin suggests that science and religion can no longer be seen as separate and how the religious person can no longer turn her back on the natural world or natural science. Furthermore, Durand says that materialists can no longer disregard religious experience as providing no insight on aspects of reality. This book illustrates that De Chardin's philosophy is becoming more relevant and pressing in the world of today, also for the South African community.

Biographical introduction to De Chardin

To understand De Chardin's philosophy requires at least a partial understanding of the man himself, as his work is motivated by deep emotions and passions, and it has often been claimed by critics that both scientist and theologian have misunderstood his work (Eaton, 2012:195; Forthergill, 1964:24). Indeed, even with such knowledge the interpretation of his philosophy depends on one's own preconceived ideas concerning the fundamental elements of existence, or one's worldview. This is expected, given the deeply impassioned aspects of De Chardin's work. Fothergill states that compared to De Chardin's philosophy, many of the treatises by sceptics and scholars alike seem like cold intellectual games (Fothergill, 1964:24). But who was De Chardin?

De Chardin was born into an aristocratic French family, one of eleven children, who lived within the Auvergne region of France. This landscape probably influenced De Chardin more than anything else, as it developed within him a keen interest to investigate the natural world and God as creator and custodian thereof (Eaton, 2012:195,196). Furthermore, the

[19] Ernst M. Conradie (editor) devotes a section (written by Heather Eaton) to De Chardin in a recent anthology that deals with theology in dialogue with environmental issues entitled *Creation and Salvation – Volume 2: A Companion on Recent Theological Movements* (2012).

intellectual, spiritual and pious aspects of the Catholic institution also influenced his thought greatly. He was a Jesuit priest, a World War I stretcher-bearer, a university lecturer, a scientist and a writer. One can say that all of the aspects of De Chardin's life were in some way or another reflected in the great breadth and nuance of his thought. He studied theology and geology, and received a doctorate in palaeontology. De Chardin travelled widely, through Egypt, France, England, China and the United State, and he wrote insatiably, notes, research papers, letters, poems, prayers. When one reads his work one quickly observes that these travels had a huge impact on him and metaphors of sight, fire, energy, building, music, luminosity and the heart of matter are prominent in his work (Eaton, 2012:196).

De Chardin had no "boring life" and his writings are also not simplistic or one-dimensional. He may well be "one of the most controversial biological writers of the present century" (Fothergill, 1964:24) and has been called by some the next great Galileo. Some have stated that his ideas might give rise to the same level of debate as St. Anselm's famous ontological argument (Fothergill, 1964:24). What made his philosophy perhaps so controversial is that De Chardin's philosophy describes a view that all the various dimensions of reality are interconnected and that it has a divine origin and goal (Eaton, 2012:196).[20] De Chardin attempted a vast synthesis of this knowledge from a Christian standpoint (Fothergill, 1964:24).

There will always be objectors when one says that De Chardin is a scientist, or philosopher, or theologian, or poet or mystic (Fothergill, 1964:25). Perhaps the reason that classification of a thinker such as De Chardin is particularly complex and difficult is due to the grand canvas whereupon his philosophical reflection happens. Maurice Gex described him, for example, as a cosmological humanist, in other words as someone with a philosophical vision of the world that is inspired by modern science. Gex sees De Chardin as such, because De Chardin describes a cosmic vision with humanity at the centre and with humanity as integral part thereof (Gex, 1957:187-205). The term cosmological humanist is perhaps fit, because De

[20] He was perhaps not so original in this – see for example Spinoza's work – but his own Christian *archee* and *telos* of nature and its integration with evolution presented his work as unique. But, again, it should be emphasized that "Christ stands at the beginning and the end of his thought" (Fothergill, 1964: 25).

Chardin argued that the cosmos has meaning only through humanity as product of evolution (Fothergill, 1964:25). It will later be argued that this fundamental perspective of De Chardin's philosophy is essential to determine humanity's place in the nature-human relationship, and therefore towards a re-evaluation of the way that humanity perceives nature.

It is important to note, however, that Gex does not give credit to the immense spirituality of De Chardin's work (Fothergill, 1964:25). De Chardin's philosophy is not just a mere scientific treatise borne from ideological evaluations of science such as Richard Dawkins' work in the current age, but De Chardin's spirituality and scientific questioning stands rather in direct relation to each other.[21] Therefore, De Chardin may be termed a *spiritual cosmological humanist*, which is very nearly saying that no general category suffices. The latter statement is not necessarily problematic, and indeed this aspect of De Chardin's thought may provide new insights into environmental ethical questions. But who influenced De Chardin's thought and words?

De Chardin's work was influenced by various other thinkers and the works of especially Charles Darwin and Maurice Blondel exert a great effect on much of his ontology (Eaton, 2012:196). De Chardin interprets these writers creatively and describes varying ontologies that are embedded in the evolutionary process and against which all human relevance and action must be sketched. He claimed, as said before, that all dimensions of reality are interconnected and that the origin, centre and *telos* thereof is divine. In his own technical vocabulary he organized ideas of the biosphere, the noosphere, creative evolution and cosmogenesis in a comprehensive synthesis that linked not only science and theology, but also the beginning of everything (Alpha) to the present and beyond (to a speculative Omega point of all reality).

[21] When Dawkins discusses science, for example, he often refers to science as simply a tool to generate evidence or proof in support of his own worldview (Naudé, 2012). This differs from De Chardin's approach. De Chardin regards science as means to study the foundational nature of reality. Dawkins' view of science is primarily reductionistic and instrumental, rather than De Chardin's "broader" view of science (which links, in a sense, to the work of William Frankena in the field of Philosophy of Science). This description of Dawkins is not intended as a criticism of Dawkins' approach; rather, it merely illustrates the two different approaches that De Chardin and Dawkins follow.

Eduard Suess contributed ideas of the biosphere to De Chardin's philosophy, a term which were also investigated and enhanced by Vernadsky. Their concept of the biosphere had direct bearing on De Charin's development of the "noosphere". Vernadsky also directly influenced this latter concept that was developed in De Chardin's thought. Another influence on De Chardin was Henri Bergson's concepts of creative evolution and *élan vital* and also Helena Bravatsky's concept of cosmogenesis which formed a central part of De Chardin's philosophy (Eaton, 2012:196; Kureethadam, 2003:63).

Charles Darwin's large influence on De Chardin's thought should be underlined and this influence will become clear when discussing De Chardin's most influential work *The Phenomenon of Man*. Eaton states that *The Phenomenon of Man* is "scientific and spiritual, factual and interpretative, philosophical, theological and metaphysical, logical and visionary, and defying designation" (2012:197). This work presents the clearest formulation of De Chardin's ontology and will thus be presented as central work when referring to his philosophy in this study.

The Phenomenon of Man - An outline

De Chardin sought to create a new worldview, or *Weltanschauung*, that differed from the previous static perspectives on reality and linked with the scientific developments of his era (Kureethadam, 2003:66). *The Phenomenon of Man* (1959) is De Chardin's "most comprehensive and foundational treatise" (Eaton, 2012:197) and provides the clearest description of De Chardin's metaphysics as linked with concepts of evolution and religion. De Chardin charts the course of humanity's evolution from the primal building-blocks of the universe, continuing through the development of life and to the consciousness as revealed in humanity, from the present and toward the converging of this phenomenon in the future. The process De Chardin eventually provides humanity with a new view of their place in the Universe, and allows humans to stand in a new relation with nature.

From the outset it must be understood that this investigation into the nature of reality is from a phenomological standpoint (Fothergill, 1964:27; Kureethadam, 2003:66). De Chardin describes his methodology as follows: "I have chosen man as the centre, and around him I have tried to establish a coherent order between antecedents and consequences" (De Chardin, 1959:29). Although this appears to be very anthropocentric, some critics maintain he went far beyond the legitimate bounds imposed by the awareness of phenomena (Fothergill, 1964:27). It may even be stated that he attempted to sketch the human phenomenon against a more universal backdrop than most phenomological analyses would allow. The result is a possible reconciliation between the spiritual and the physical in his work, and a new way of appraising both. Such a view is already manifesting in the physical world through cultural and technological development that continually brings people and their ideas in closer relation to each other. The interlinking of persons through the Internet is something that De Chardin could not have foreseen, for example, but for which his philosophy is especially relevant and which showcases this increasing unification of humanity. His philosophy, especially in light of such technological and social developments, has further application to environmental ethics and how humans perceive their relationship with each other and with the natural world.

As a whole, De Chardin's philosophy describes a process of universal becoming, wherein new levels of existence and organization are the results of the development of consciousness through the process of evolution. To formulate this process led him to coin the term noogenesis, which refers to the natural evolution of mind or mental properties. What De Chardin describes is therefore not a cosmology, but rather a cosmogenesis – a process of change and becoming encapsulated in the evolutionary process (Huxley, 1959:13). Evolution is the primary concept that is utilized in De Chardin's philosophy to create a context towards which everything must refer. This includes, according to De Chardin, religious experience, doctrines and knowledge – allowing religion to move away from a predominantly moral sphere and to be fully integrated, along with science, as part of humanity's attempt to understand the whole of reality (Eaton, 2012:196-197).

Creation, revelation and salvation form part of fundamental evolutionary processes. Reality is therefore, for De Chardin, a fully integrated unity between psychic, spiritual and material

phenomena that develops through the process of evolution (Eaton, 2012:197). At different stages throughout this process there are critical changes in the very ontology of reality, characterized by an increasing interiority and developing complexity of evolving things. De Chardin therefore does not simply postulate an unchanging cosmology, but rather a cosmogenesis. Heather Eaton states that: "Scientifically, creation thickens, intensifies and crosses new ontological thresholds. Theologically, creation is revelatory of profound, expansive and manifested dimensions of divine activities" (Eaton, 2012: 198). It is against this backdrop of a constantly evolving and developing universe that humanity must formulate its significance with regards to the natural environment. Humanity is thus never separated from nature, which indicates why De Chardin may be understood as opting for neither an anthropocentric or non-anthropocentric value theory of nature.

The next section present an outline of De Chardin's description of cosmogenesis in *The Phenomenon of Man*, hoping to provide the reader with an idea of the claims that De Chardin presents.

1) The universal process of increasing complexity of consciousness

Modern physics tells us that the universe began with a Big Bang and that the universe is still expanding. By measuring the shifts in the wavelengths of light that are emitted by distant galaxies it has been established that these galaxies are moving apart. In 1929 Edwin P. Hubble established a directly proportional connection between the recession of a galaxy and its distance from the Earth, a rate which is called the Hubble constant (Halliday, *et al*., 2005:1237). De Chardin accepts this central claim of physics, that the universe began in a Big Bang (he says that "a sort of primordial atom" was present with the Big Bang) and that the universe has been expanding from that point, as starting point for his philosophy (De Chardin, 1959: 300).[22]

[22] He says that any reader of his philosophy should keep this starting point in mind when attempting to assess scientific legitimacy and limitations of his claims (De Chardin, 1959: 301).

De Chardin says that if the universe is in a process of spatial expansion from an infinitesimal point in the distant past (i.e. the Big Bang) to the immensity of some unknown future, then it is sensible to observe this same process on a physio-chemical level observed on Earth where extremely simple organic configurations develop towards extremely complex configurations, as observed via biological evolution.[23] His view of the development of life passes from this non-life primordial atom through molecules, macro-molecules, cells, organisms and so on, to man – stating that "life inevitably assumes a 'pre-life' for as far back before it as the eye can see" (De Chardin, 1959:57; Fotherfill, 1964:27). De Chardin argues thus from an evolutionary basis, believing it to be a self-evident process and "a light illuminating all facts" (De Chardin, 1959:219; Fothergill, 1964:27). The idea that De Chardin presents of evolution is thus very comprehensive, and evolution affects the development of the universe and all living things – it is both a cosmic and a biological evolution (Fothergill, 1964:27). However, De Chardin considers matter as dynamic and "aglow with the fire of the Spirit" rather than as inert and passive as many of his contemporaries. "Matter" forms the amphitheatre against which the cosmic story unfolds (Kureethadam, 2003:67).

De Chardin states that the originality presented in his argument with regards to this topic is the affirmation, from the start of the argument, that the property of organic structures to become more conscious as complexity increases is only a local (Earthbound) manifestation or expression of the same trend in cosmic structures (non-Earthbound), as shown through astronomy and physics (De Chardin, 1959:301). This implies a cosmic evolution that is analogous to biological evolution. Even noting that this cosmic evolution is bound by the influence of electro-magnetic and gravitational forces, for example, whilst biological evolution is based on natural selection and hereditary, the analogy still holds remarkably well according to him. He says that the process is similar, though the mechanisms postulated differ. Up to this point, the argument made by De Chardin conforms to a great deal with currently accepted natural science.

[23] "Biological evolution" will be the term used to describe what is known in the natural sciences as the theory of evolution. Again, it is not within the scope of this specific study to analyze all ideologically motivated arguments for or against this phenomenon or observation.

De Chardin goes on to state that these two forces of cosmic and biological evolution are probably strictly connected and that this implies that consciousness as part of organized complexity transcends the narrow limits through which humanity directly perceives it. This implies that all matter has some rudimentary form of consciousness as inherent part, and that even macro-molecules and smaller matter have a form of consciousness as part of its limited complexity that is diffuse and imperceptible to human instruments of detection (De Chardin, 1959:301-302).[24] This point of De Chardin's philosophy may be criticized as an ontological leap, but this critique may be addressed by stating that De Chardin may simply be describing the *potential* to develop consciousness from these basic structures. Consciousness can develop if the complexity is increased through more complete structuring of many of these basic structures. This does not contradict current scientific knowledge and reflects current theories concerning the development of what would traditionally be described as "inanimate" matter into a form of matter that has elements of what we would recognize as consciousness or has the ability of higher thinking.

De Chardin goes on to describe this process in a way that supports my interpretation of this point of his argument. He says that external physical conditions may prevent matter from reaching the point where consciousness may be clearly seen, for example, due to the influence of high temperatures or gravity (De Chardin, 1959:302). Evolution which is thus halted or suspended will eventually advance as soon as conditions are favourable for its continuation towards ever increasing levels of consciousness (De Chardin, 1959:302). This cosmic and biological setting forms the background against which De Chardin develops his ontology.

In my view this panpsychical aspect of De Chardin's philosophy may be adequately explained with reference to current scientific knowledge: In essence, life is always under pressure to become or remain non-life. This can easily observed in biological systems, such as the human body. Our biological processes of metabolism and immune systems serve only to protect the inherent complexity into which we were born (i.e. to prevent an increase in

[24] This is described in modern terms as panpsychism – see D. Chalmers' *The Conscious Mind: In Search of a Fundamental Theory* (1996) and C. de Quincey's *Radical Nature* (2010).

entropy). Once these processes no longer hold back the tides of entropy (upon the point of physical death), we become mere unstructured matter and our biological systems quickly lose all complexity associated with the human body. We become dust with a very low level of structured complexity. But how does this universal process of increasing complexity link to the "arrival of humanity" on the evolutionary timeline?

2) The individual threshold of reflection (The arrival of humanity)

A question that De Chardin asks is why do all matter then not spontaneously lead to conscious structures when placed under the correct conditions (for example, placing an inanimate rock in an environment that is sustainable for life)? De Chardin describes a universal process of increasing complexity as a step-by-step trial-and-error process through the continued evolution of matter, multiplied a billion-fold over the entire universe. In terms of biological matter, De Chardin describes this as a process of "groping" (towards higher states of consciousness) combined with the mechanisms of reproduction and hereditary (De Chardin, 1959:302). The whole evolutionary process involves the organization of primitive things into successive structures of complexity through the production of life to the culmination in thinking beings (Fothergill, 1964:28). This allows the hoarding and additive improvement of favourable combinations obtained via biological evolution, which is increased as more individuals are engaged in the project (De Chardin, 1959:302-303). These processes give rise to the variety of living systems observed in the natural world, and it gave rise to humanity as well. Each living system presents another "shade" or "form" of consciousness and this suggests a view of life as universal function of the cosmos (De Chardin, 1959:303). Humanity may be seen as the "pinnacle" of all living systems, but it is still a "function of the cosmos", inseparable from it.

A second novel point that De Chardin presents in his philosophy concerns the place that he identifies for humanity in the cosmos. He suggests that human consciousness has a unique role in the natural environment, due to its ability to reflect. To "reflect" is for De Chardin a "threshold" or a notable change of state in the development of consciousness (De Chardin, 1959:303). In De Chardin's view of evolution, thresholds refer to points where maximum

complexity in a series of similar units is attained which leads to a new level of being. When the point of reflection was reached within humanity it necessarily lead to what De Chardin terms "a new form of biological existence" (De Chardin, 1959: 303). This refers to the "turning inward" of a unit upon itself (Fothergill, 1964: 28). This "within" or point of reflection, which was reached at this point of evolutionary development with the arrival of humanity, may be termed self-consciousness (De Chardin, 1959:59; Fothergill, 1964:28). This is the point which De Chardin described as "involution".

At this point it should be emphasized that De Chardin distinguished what he saw as the "without" of things, or that which could be observed through scientific study, from the "within" of things, which could be correlated with "mind" or "spirit". The process of evolution, as understood through science and described in the previous section, may be explained in the context of discernable atomic structures and the behaviour of these structures. However, whilst this behaviour was enough to explain non-living systems, De Chardin did not deem it sufficient as explanation for the life dynamics that he observed in living things. The "without" of things could not supply adequate explanation for the behaviour, increasing complexity, development and evolutionary directionality of life. De Chardin thus postulated the existence of some form of "within" (an *élan vital*, *Geist*, spirit or *telos*) that increasingly played a role in the processes of life (Eaton, 2012:197).

Modern evolutionism denies that observable factors (or the "without") are inadequate to explain the development of life into complex structures, and this point of De Chardin's philosophy may therefore be considered an oversight of scientific fact by evolutionists (which will be interpreted, due to the a-historical approach of science, primarily from a contemporary context). New scientific ideas of evolution, these critics would say, postulate that no such internal force is necessary for the evolutionary process and that evolution has no "direction" as described by De Chardin. However, it should be kept in mind that De Chardin wrote in a particular historical era and that his work therefore cannot be evaluated completely according to the criteria of modern scientific developments.

Furthermore, and more importantly, I do not consider this aspect of critique as necessarily invalidating De Chardin's philosophy, or impeding his approach with regards to integrating science and religion. The "within" that he describes could very well be described as *mind* or *consciousness*, which need not be presented as "forces" that direct evolution in a certain direction.[25] Instead, the development of the "without" merely reflects a corresponding development of the "within". In another sense, De Chardin's argument for the "within" may simply be seen as a point where moves away from pure scientific theorizing into the realm of spiritual knowledge and experience, which he then strives to incorporate with scientific understanding. Indeed, views of the "within" as spirit are present in many major religions, and may even be interpreted scientifically when presented as mind or consciousness. The postulation of a "within" by De Chardin is therefore not lacking in merit.

For De Chardin, the process of biological evolution runs parallel and directly linked to the process of organic *involution* (De Chardin, 1959:301). He refers to these two processes (evolution and involution) as *complexification* and *centration*, respectively. On the one hand there is the phenomenon whereby, externally, the arrangements of evolutionary units become more complicated (complexification), whilst on the other hand there is an increase in unification around an unseen centre of consciousness or mind (centration). In his ontology, De Chardin therefore distinguishes between the "within" and "without" of things. This "within" (involution) may be correlated with consciousness, or mind, or spirit. The "without" is that which is observable, the matter that is associated with evolution in the traditional scientific sense. However, "as life evolved, the without of things – the observable – becomes increasingly incapable of explaining the behaviour, development, increasing complexity and evolutionary directionality" (Eaton, 2012:197, Fothergill, 1964:29). In other words, this increase in externally observable complexity correlates to an increase in *interiorisation* in the psyche or consciousness – as organization and complexity of an evolutionary unit is increased it is at the same time forced to turn in on itself, towards its "within" (De Chardin, 1959:301). Thus, as complexification (or evolution) increases so does centration (or

[25] De Chardin states that the process of cosmic and biological evolution have a directionality due to an inherent dynamism inherent in the process of evolution, which he calls radial energy in contrast to empirically observable tangential energy (Kureethadam, 2003:69). This highlights De Chardin's idea of the within as not just "mind" or "spirit", but also as "energy".

involution). The intimate link between nature and humanity (as example where centration or involution takes place) is thus clear here.

The above comments about evolution and involution might still seem to suggest a dualism between spiritualism and materialism (or mind and body), but De Chardin was strongly opposed to such an ontological dualism cultivated in the thought of scientist and theologian alike (Fothergill, 1964:29). This critique is addressed in the next section under the heading De Chardin as modernist (dualism and the project of progress). De Chardin argued that scientists ignored the "within" of things, and theologians ignored the "without" of things. Both perspectives are necessary to cultivate an accurate idea of reality. De Chardin states that the structural relationship, between organic complexity and consciousness, is difficult to refute. This is supported by several scientific and philosophic ideas of how mind and consciousness develops – whether "mind" and "consciousness" in this context is relatable to theological ideas of "spirit" is up for debate.[26] Nevertheless, this perspective of the linking of the "within" and the "without" forms the basis of De Chardin's theory and implies that consciousness, or perhaps the ability to develop towards consciousness, is present in all matter. This theory presents one of the chief difficulties in *The Phenomenon of Man*, despite its intellectual attractiveness (Fothergill, 1964:29-30). This difficulty will be discussed in the fourth point of this section, when referring to De Chardin's ideas regarding freedom in his ontology.

Up to here only the origin and development of the universe was discussed – a process of involution and evolution – but what about the future? Evolution cannot be reversed, and therefore De Chardin suggested that the development of humanity towards higher levels of complexity were necessarily directed towards the point of "Pure Spirit", also identified as the *Omega Point* in De Chardin's philosophy (Fothergill, 1964:26). But what is the Omega Point and how is it further developed to this point?

[26] Modern scientific perspectives in neurophysiology has direct relation and bearing on modern ecological approaches, which suggest again that nature is only open to human valuation and not to inherent or intrinsic properties of value.

Evolution shows an ever-increasing and continuous diversification to limits of individual unit adaptation, not convergence. Bergson pointing out the importance of time in any cosmogony based on the study of evolution, and stated that any cosmogony with this evolutionary basis cannot fulfil itself. De Chardin, however, argues for the prominence of humanity, stating that it represents "evolution finding itself" – progressive and directed evolution cannot remain unfulfilled. He states that divergence and emergence (or convergence) constantly occur in evolution: The creation of the first atom onwards produced increasing divergence up to the point where humanity arrived on the evolutionary landscape with the capability of reflection or self-consciousness. The direction thus shifted from divergent to convergent (Fothergill, 1964:31). De Chardin therefore postulates a *noosphere*, or thinking envelope, that encompasses all human thought and experience stretching across the surface of the Earth. This noosphere arose through the evolution of humanity at the point where humanity became capable of reflection and which changed the evolution of humanity from divergent to convergent towards the "Universal Christ" in De Chardin's philosophy (Eaton, 2012: 198; Fothergill, 1964: 26, 31).

Humanity has become subject to involution as well as evolution (Fothergill, 1964:31). The noosphere presents a fundamental step in the involution of humanity, a new threshold that opens up "genuinely new possibilities of reality on a cosmic scale" (Eaton, 2012:199). This new form / course of existence of humanity is characterized by several properties:

1) The decisive emergence in individuals of internal factors that differ from those of external arrangement. He describes this as the development of humanity's ability for creation and invention, perhaps even imagination, beyond the factors of chance that lead to the physical manifestation of this type of consciousness (De Chardin, 1959:303).
2) The decisive emergence of true forms of attraction and repulsion (characterised by sympathy and antipathy) that differ from mere attractions and repulsion as manifested in non-life or lower life - for example, a plant's attraction towards sunlight (De Chardin, 1959:303).
3) The awakening of consciousness to the demand for "unlimited survival", based on the ability to predict and calculate future events. De Chardin says that this is the passage, for life, from a state of relative reversibility (i.e. the continuing process of cosmic

> involution) towards a state of absolute reversibility (i.e. the incompatibility of the conception of total death with the evolution of a consciousness that has become reflective). This final point may refer to the inability of a conscious being to fully comprehend its ultimate demise (De Chardin, 1959:303).

De Chardin states that these properties give humanity a distinct character from the rest of the natural world. It is in humans where evolution of consciousness continually takes place (De Chardin, 1959:304). The superiority of humanity is quantitative, numerical, functional and vital for De Chardin. A common critique against De Chardin is that he is guilty of anthropocentrism – this will be discussed more thoroughly in the section Critique of De Chardin's philosophy (Eaton, 2012:200). It should be noted, however, at this point that De Chardin does not claim the separateness or superiority of humanity lightly, and that this declaration should not be understood as a position similar to the strict anthropocentric axiology argued against in the Contextualization section in the first chapter of this study, nor as indicative of the rejected dualistic ontologies developed in the thought of Kant and Descartes in the Modernity section. Humanity is different because the evolutionary process has reached a point of "hyperpersonalization" with the arrival of the noosphere (which represents "evolution finding itself") which relates to the social structures that are assembled by humanity. This convergent and directed aspect of evolution in De Chardin's thought will be described in the next section.

3) The collective threshold of reflection (The social phenomenon)

The superiority of humanity in opposition to nature is based for De Chardin on humanity's ability to overcome blind instinct with thought. Thought must not be understood here as mere rationality, but in a much more holistic sense with the focus on "reflection" and "socialization". Furthermore, this power of thought allows humanity to spread out across the surface of the Earth and to form a spectrum of another order – the immense variety of anthropological types or social groups that may be observed. De Chardin wonders how this human strata of the world (the social phenomenon) differs from the forces of cosmic involution that gave birth to it (De Chardin, 1959:304). He argues that humanity as structured

in social groups, with its increasing numbers and more complex arrangements, does not signify an end to the evolutionary process of humanity (as though it were some sort of "evolutionary ceiling") but rather a leaping forward of the process (De Chardin, 1959:305). These social structures that humanity form, arise after the threshold of reflection and implies the acquisition of language, culture, civilization, science and all other elements of social existence (Kureethadam, 2003:68). It should be noted at this point that De Chardin argues in Darwinian terms with relation to biological evolution, but in Lamarckian terms when discussing the development of culture, primarily through the influence of education (Thomas Glick, 2009).

I would expand upon this point by saying that the new form of evolution is not merely physical, but rather social, and it would therefore not be bound to the physical time constraints traditionally identified with biological evolution. "Social evolution" could accelerate indefinitely[27], and along with it a multitude of aspects that are traditionally associated with it, such as technological development and innovation. This is not to say that such a phenomenon would have a beneficial influence on the natural environment; rather, if De Chardin's sketch of development is believed, such a progression is inevitable and requires a wholly new way to deal with natural environment issues.

De Chardin states that the multitudes of humans structure themselves in technical patterns of social groups wherein an increase in the number of consciousnesses occurs – a transition from individual consciousness to collective consciousness (Kureethadam, 2003:68). Though we accept this observation as common knowledge, De Chardin suggests that we do not realize that this inward spiritual concentration and technical organization are indicative of the same forces that influenced the formation of the first individual human, says De Chardin. Therefore, the noosphere is driven by the same forces as biological evolution and may be described as a process of noogenesis (De Chardin, 1959:305; Eaton, 2012:199). It was of great interest to De Chardin that the universe had become personalised into self-conscious subjects through this evolutionary process from impersonal matter. As the universe evolves,

[27] Up to the Omega Point, which seems to indicate the inclusion of humanity into God or a Universal Christ (Eaton, 2012: 199; Fothergill, 1964: 25)

the noosphere will therefore be saturated with a personalized consciousness arising from individual human beings (Eaton, 2012:199). He says that this process has the function of organically linking each human to his or her neighbour, described by De Chardin as follows:

> "Through human socialization, whose specific effect is to involute upon itself the whole bundle of reflexive scales and fibres of the earth, it is the very axis of the cosmic vortex of interiorisation which is pursuing its course" (De Chardin, 1959:306).

This constitutes the third novel contribution of De Chardin's philosophy (the first being the primacy of life in the universe, the second the primacy of reflection in the universe) that defines and describes De Chardin's perspective on the phenomenon of humanity. De Chardin claims that this organic interpretation of social phenomena explains and predicts the course of history (De Chardin, 1959:306), and the rise of the Internet just a few decades later illustrate how the intensification of consciousness that De Chardin describes, intensifies by means that are social (technological, if the Internet is postulated as mechanism) instead of biological. This aspect is expanded greatly in the later section of this study, namely Technosphere, rather than biosphere – a truly sustainable alternative?.

De Chardin states that this social evolution, which describes the coming together of individual humans towards a collective unity, echoes the original point of reflection identified in the development of humanity:

1) The development of the power of invention and innovation that is rapidly intensified and found in the rationalized collaboration of human forces of research. I suggest that the development of the Internet (a network to exchange ideas on a global scale) played an immense part in the intensification of the current process (De Chardin, 1959:306).
2) The social capacity for attraction or repulsion, which De Chardin identifies as functioning in a chaotic way but also developing rapidly towards a point where economics will soon count for very little in comparison with ideological and emotional arrangements in the world (and, I would add, cyberspace). Already we are seeing major shift in the global economic climate – with the economic recession and

movement like "Occupy Wall Street" – and the increasing notice taken by people of the environmental damage cause by economistic practices (as identified in the section on Modernity). The Internet allows public opinion on these matters to be unified across vast distances, free from economic influence, and allows people to create sub-groups based on ideological and emotional bases, rather than as part of economic stratifications in society. Furthermore, the generation of virtual items with real-world money as possible solution for the overproduction. I will discuss this point a bit later in the section Technosphere, rather than biosphere – A truly sustainable possibility? (De Chardin, 1959:306)

3) Finally there is the social demand for irreversibility. De Chardin says that this emerges from individual aspirations, the ability of the individual to contemplate a suppression of him- or herself in the face of total annihilation, to the realization that the same fate confronts the entire species (De Chardin, 1959:307).

De Chardin emphasizes the uniquely and fundamentally connected character of humanity when he states that we are "far from drifting biologically, under the influence of exaggerated individualism, towards a state of growing granulation" and that we are rather moving "towards a second critical pole of reflection of a collective and higher order" and towards "a point through which we can nevertheless prognosticate the contact between thought, born of involution upon itself of the stuff of the universe, and that transcendent focus we call Omega, the principle which at one and the same time makes this involution irreversible and moves and gathers in it" (De Chardin, 1959:307). Through the process of noogenesis, De Chardin states, the personal dimensions of the divine arise (Eaton, 2012:199). Omega describes a presumable future point in history when humanity's divergent evolution becomes convergent and reaches a summit or pinnacle (Fothergill, 1964:25). This occurs due to, among other factors, the spherical shape of the planet and the directionality of evolution as described in De Chardin's ontology. De Chardin identifies this point intimately with Jesus Christ, reflecting St. Paul's teaching of the Cosmic Christ or God who is "all in all" and the saturation of the universe with love, sympathy and mutual respect (Eaton, 2012:199; Fothergill, 1964:25; Kureethadam, 2003:69). De Chardin claims that in this Omega Point *all reality* will be unified, not only humanity, which emphasizes the value of nature in De Chardin's scheme.

4) Final notes and clarification of some concepts and argumentative points

As explained before, De Chardin distinguishes between the "within" and "without" of things. However, the without of things, according to De Chardin, cannot explain the behaviour, development, increasing complexity and evolutionary directionality that is observed in the world. De Chardin therefore postulates an influence from the "within", which he describes as a union of matter, energy, spirit and *telos* (Eaton, 2012:197).[28] De Chardin states that this "within", this consciousness, through reflection, presents itself as not some sort of persisitent or subsistent entity, but rather as a "specific effect" of complexity (although this "within" shows itself in various concentrations in the totality of phenomena and in the matrix of complexity) (De Chardin, 1959:308-309). The within is manifested in the overall directionality of evolutionary and cosmic processes, and this in turn leads to higher systems of complexity (Eaton, 2012:197). In *The Phenomenon of Man*, De Chardin wanted to describe the natural history of both the without and the within of things through a combination of natural science on the one hand and spirituality on the other. He attempts a three-fold synthesis between the 1) material/physical world and the mental/spiritual world, 2) between the past and the future and 3) between variety and unity (Huxley, 1959:11).

What place remains, however, for humanity's freedom in De Chardin's philosophy? Is there the possibility for setbacks in the process of cosmogenesis? De Chardin states that he in no way postulates that the process of hominisation is "necessary, inevitable and certain" (De Chardin, 1959:307). While true that the noogenic forces (to be related to De Chardin's concept of the noosphere), which include interiorisation, continually influence the way that biological synthesis of reflection operate, this should not be taken to imply a blind determinism in the face of these forces. Indeed, states De Chardin, the arrangements of great complexes (that exhibit increasing levels of improbability to spontaneously generate) operate via two methods (De Chardin, 1959:307-308), namely:

[28] This type of panpsychism of De Chardin reflects a continuity of thought from Bergson, Lecomte du Nuoy to De Chardin (Francouer, 1961: 206-219).

1) The groping utilization of favourable cases, through cosmic, biological or social evolutionary processes. This means that the blind forces are directed in a certain direction, to at least some degree.
2) Reflective intervention.

Both these methods play a great role in how the noogenic forces influence the individual or complexes. De Chardin says that in the case of very large numbers (large complexes, such as the human population), the chance of success through chance tends to be more favourable (illustrated by the effect of randomness in natural selection, for example) and that freedom further diminishes the possibility of rejection or error as more aspects are engaged (De Chardin, 1959:308). In line with Bergson and Du Nuoy, he uses consciousness, spirit or liberty to imply physical liberty or "choice", but this usage presents a degree of difficulty when utilized analogously with different evolutionary levels (Fothergill, 1964:31). What De Chardin suggests is basically that humanity had reached a point with the advent of reflection wherein spirituality entered a world that involved certain responsibilities and purposes, lest we reject this recognition and follow a path of physical death and evolutionary extinction (Fothergill, 1964:26). This is also relevant for environmental ethics issues, for if we reject the realization that humanity is engrained in the natural world we will surely follow a path of environmental misuse and damage.

What distinction could be made between God and the world in De Chardin's philosophy? De Chardin directly addresses the critique that his philosophy is "pantheistic" (De Chardin, 1959:309). He says that, etymologically speaking, he may be suggesting something akin to pantheism but that this form of pantheism is an absolutely legitimate formulation. He explains that in the case of a *converging universe*, as he has delineated, the universal centre is not born of the fusion and confusion of the elemental centres it assembles, but the universal centre should rather be conceived of as pre-existing and transcendent as it fulfils its motive, collective and stabilizing function. He states that these reflective centres of the world are for all intents and purposes "one with God" (De Chardin, 1959:310). But, in his view, this is an exacting Christian and orthodox perspective. The unified state is not merely obtained by identification of God with this reflective centre, but rather by the differentiating and communicating action of love (i.e. as God is in everyone). Furthermore, whilst De Chardin

makes no specific reference to evil or sin in his ontology, he does suggest that the image he presents is the *positive essence* of the biological process of hominisation, and that he is simply not drawing specific attention to the negative of this image (De Chardin, 1959: 310-311).

3.2. Critique of De Chardin's philosophy

What is remarkable about the work of De Chardin is the amount of intense feeling often involved in the reaction to and discussion of his work. His ideas have generated "an enchanted support or violent opposition reminiscent of the early Darwinian controversy" (Fothergill, 1964:24). Perhaps the strong emotions are due to the fact that he encapsulated the dialogue (and inherently, the disagreements as well) between science and religion by attempting to forge a synthesis between the two. The point remains that De Chardin's philosophy is a minefield of opposing views and laden subject matter. As such, it is no surprise that his work has been submitted to a wide variety of critique above and beyond the already mentioned idea that he is too mystical for scientists and too humanistic for theologians (Stern, 1962:75-76). Some of these other points of critique will briefly be discussed here.

De Chardin as mystic

De Chardin did not deny elements of mysticism in his approach. In fact, a letter he wrote to Abbé Breuil in 1923 states that that he finds himself "possessed by the conviction that it is only the science of Christ running through all things, that is to say true mystical science, that really matters" (Fothergill, 1964:25). De Chardin may therefore be considered unscientific by many scientists, due to such mystical aspects of his work, and many theologians may feel uncomfortable with the leaps from traditional Christian dogma to mysticism that De Chardin makes in his work (Stern, 1962:75-76). However, does De Chardin's quasi-mystical approach (or any other mystical approach) truly provide concrete alternatives and answers to questions posed by our environmental ethics? *Could this mystical type of approach partner*

the scientific, mostly materialistic, approach with theological, dogmatic, approaches in any sensible way?

Answering scientific objections

To answer the above question, this section will evaluate De Chardin's mystical approach in relation to other mystical approaches in "nature religions", specifically the traditional African religions, and its relevance for the environmental ethics discussion based on *purely scientific criteria*. Is De Chardin's philosophy simply a restatement of African and other holistic mystical approaches, or does his approach provide avenues of investigation that reach beyond such religious approaches?

This is a necessary question to ask if one attempts to apply his philosophy to environmental ethics, especially since the Western dialogue has already been typified as being highly secular. It is known, for example, that De Chardin and his Russian counterpart Vladimir Vernadsky inspired the Gaia hypothesis, the idea that the global ecosystem is a superorganism with a whole much greater than the sum of its parts" (Kreisberg, 1995). This seems to imply a holistic idea that is very similar to holism found in African traditional religions. If De Chardin's holistic idea is equitable with such holistic religious views, how could De Chardin contribute to the secular discussion of environmental ethics? If we look back at the description of holism in Traditional African religions given by Harvey Sindima in the Contextualization section, the following passage was quoted:

> "Nature and person are one, woven by creation into one texture or fabric or web characterized by inter-dependence between all creatures. This living fabric of nature – including people and other creatures – is *sacred*. Its sanctity does not mean that nature should be worshipped, but does mean that it ought to be treated with respect" (Sindima, 1989:143).

This description has religious implications, of course, and seems inappropriate for the secular dialogue of environmental ethics. However, if we remove the word *sacred* (as understood in

a religious context) and replace it with the phrase *a basic element of the scientifically observable world*, the holistic approach goes beyond the realm of mysticism and religion and enters the domain of science.

> "Nature and person are one, woven by creation into one texture or fabric or web characterized by inter-dependence between all creatures. This living fabric of nature – including people and other creatures – is *a basic element of the scientifically observable world*. Its sanctity does not mean that nature should be worshipped, but does mean that it ought to be treated with respect" (Sindima, 1989:143 – modified).

The above example is not intended to imply that there are not mystical elements in De Chardin's work. Indeed to deny such elements serves to diminish much of the possible contribution that De Chardin could make. Furthermore, the mere substitution of one word (*sacred*) for another phrase (*a basic element of the scientifically observable world*) does not change the fact that these mystical elements are present in his work. However, the approach that De Chardin takes differs greatly from the approach taken by holistic religious approaches.

Holistic religious approaches use "unscientific" and traditionalist approaches to identify a sense of wholeness in the natural world, whilst De Chardin develops his holistic ideas from a perspective that incorporates observations generated through the use of the scientific method and other scientific methodologies. At this point, no claim regarding the truth of this type of scientific knowledge is made. Instead, the important point is that utilizing such a scientific approach makes his work much more acceptable for engagement with environmental ethics (as scientific findings and research forms the foundation from which these ethical theories are constructed). This means that whilst holistic religious approaches may not contribute to the environmental ethics dialogue, the scientific holism that De Chardin postulates may indeed make many of his conclusions acceptable for this secular discussion.

The importance of this distinction (which may be slightly pragmatic, even) will be explored in the next section under the heading Incorporating new perspectives. In that section it will be discussed how De Chardin's work fulfils several criteria that are identified as being important for overcoming the nature-human dichotomy of modernity. The perspective that could be incorporated by De Chardin is specifically this mystical approach, which in De Chardin's case differs from mysticism found in nature religions and becomes a pseudo-scientific form of mysticism.

An interesting aspect of the Traditional African tradition to note here is the belief that the ultimate destiny of creation is God (Msafiri, 2007:45). This view reflects aspects such as the Omega Point of De Chardin's philosophy and it may be interesting to speculate on the similarities between these two ideas in traditional cultural ideas in Africa and the cosmogenesis described in De Chardin's philosophy. The Chagga, an indigenous African group, describe a dynamic process towards the "not yet" or future life through which "Uruka Woose" (translated as the entire world) and "Wandu Woose" (translated as all human beings) must go – with the intention of future communion with the clan ancestors (Msafiri, 2007:45). Again, we see that De Chardin utilizes scientific perspectives in such a way that the incorporation of traditional religious ideas may be incorporated into his work, and by extension incorporated into the environmental ethics debate. The Gaia hypothesis, for example, is another way in which both scientific analysis and mystical elements are linked (Kreisberg, 1995). Often, however, there is a difference in the lexicon utilized by both fields and the underlying motivations that are identified for the way things are, but inherently both approaches engage with reality on a phenomological level.

Answering Christian theological objections

During his life De Chardin regularly courted controversy with church officials, especially with regards to his approach towards original sin. De Chardin was ordered to leave his teaching position and to withdraw his statements in 1925, and in 1962 received a monitum (or reprimand) from the Holy Office denouncing his works as offensive to Catholic doctrine. This was likely due to the "mystical elements" identified in his works, but especially with

regards to ideas of the Omega Point, the Universal Christ or Christology developed in De Chardin's work and his ideas on "sin" (Eaton, 2012:200). These elements present what some regard as a pantheistic approach.

De Chardin discusses the idea that his philosophy is considered pantheistic by the upholders of traditional Christian approaches, which is seen as a grave deviation from traditional Christian dogma. He argues that, whilst there is a link between his work and the traditional formulation of pantheism, he considers his formulation more theologically legitimate than other formulations due to his idea of a *converging universe*. This implies not only that humanity and the natural world function under the same natural laws and processes, but also that the reflective elements of the world are pre-existing and transcendent as it fulfils its motive, collective and stabilizing function, which for all intents and purposes is "one with God". De Chardin sees this not as a deviation from traditional Christian belief, but rather as an acceptable development of this theology. He regards his approach as a specifically Christian and orthodox perspective. The reflective centres of the world are not simply identified as God. Rather, these reflective centres are a physical manifestation of the differentiating and communicating action of love, becoming actualized as God's presence in the entirety of humanity (De Chardin, 1959:309-310).

There was later in history, however, a more sympathetic evaluation of De Chardin's philosophy by the Roman Catholic Church. In July 2009, Pope Benedict XVI stated that De Chardin had a perspective in accordance with the Epistle to the Romans, wherein St. Paul states that the world will one day become a form of living witness. He said that at the end of time there will arise "a true cosmic liturgy, where the cosmos becomes a living host" (Allen, 2009). This indicates that the vision described by De Chardin links closely to Scriptural perspectives, at least as understood in Catholic tradition.

These changing views of the Church emphasize that De Chardin remains controversial on several critical points, such as his "mysticism" and "pantheism". This controversial aspect remains throughout De Chardin's work, even though he provides replies to these critiques and even though Church acceptance of his views became more prominent. Furthermore,

Kureethadam states that this allowed "De Chardin not to slip into a facile monistic pantheism without distinction and qualification and at the expense of conscious and personal life (Kureethadam, 2003:78).

De Chardin as pseudo-scientific

As has already been stated, De Chardin is in the unenviable position of trying to integrate both religious and scientific ideas. The previous section shows that, whilst De Chardin functions from a distinctly Christian perspective, the ideas he formulates could also easily be linked with mystical spiritual traditions. The question posed next is whether De Chardin could claim any legitimate contribution to the scientific perspective, apart from the pseudo-mystical approach he develops from a scientific foundation. Furthermore, *can any claims regarding the scientific legitimacy of De Chardin's ontology be made?* However, it is on this front that De Chardin's value truly comes to the fore. Whilst his philosophy may be dismissed as mystical by some, his continuous foundation is to be found in the natural sciences. If he were simply functioning from one of these traditions just mentioned, his work would not be novel and make a sensible contribution to environmental ethics. However, his philosophizing and theorizing go beyond the mystical and strive to link all aspects of human (and cosmic) existence as a unity. This is not a cold science, a science done by scientists behind benches and in white lab coats without reference to the outside world. Rather, it is a form of *scientific transcendence*. Fothergill says that it is not strange to see scientists look beyond their own discipline towards spiritual things in order to find relief from a feeling that masses of data are rather sterile and that one should explain and interpret this data on a wider field (1964:25). The desire to pass from the empirical to the transcendent is a process that is of course influenced by the worldview of the person involved (Fothergill, 1964:25).

It is on the point of incongruence with modern scientific understanding that some critique is levelled against De Chardin, at scientific inaccuracies present in his work. One of these is De Chardin's postulation of a "within" driving externally observable evolution, rather than merely the influence of external factors. Another is his idea of directed evolution, rather than "random" evolution that merely presents as directional due to most effective genetic

combinations (Eaton, 2012:200). These points of critique were discussed in the section The individual threshold of reflection (The arrival of humanity). However, it should again be emphasized here that De Chardin developed his cosmogenesis in a particular historical period and one could therefore well overlook such flaws in his philosophy if the overall description of reality that he presents is coherent. Furthermore, De Chardin states clearly that he is not working from a scientific basis alone and that he thus makes use of spiritual insights or knowledge should not be seen as a flaw but rather as an expansion of the tools through which he views reality. De Chardin does expand on a rich cultural religious tradition through his postulation of a "within" that serves as directional with regards to evolution, but such a statement may seem strange to modern science's reductionist perspective. An alternative avenue for such thinkers may be to correlate the "within" with mind or consciousness, but again such a correlation is not without problems and may require a slightly different reading of *The Phenomenon of Man*'s early sections. However, this does not apply to De Chardin's later ideas in the book, such as his description of the noosphere.

De Chardin as charlatan with words

P.B. Medawar (1961) states that *The Phenomenon of Man* is "filled with metaphysical conceits" and that Teilhard "cheats with words" (1961:99-106). This is a common point of criticism when dealing with De Chardin's work, as his literary style may well be described as obscure and difficult at times. The limits of analogies, for example, are not always easy to discern. However, I believe a major intention of De Chardin's *Phenomenon of Man* was to generate an ontology that utilized concepts that were observed by De Chardin in reality, but for which no current vocabulary was suited.[29] This suggests partly why his writing may come across as complicated, because to explain his view of the world De Chardin had to develop a new vocabulary that bridged traditional ideas of science and religion. This vocabulary was not based on mere "metaphysical conceits", but rather strove to develop a vocabulary that was useful in describing reality as De Chardin saw it.

[29] This point will be discussed more thoroughly in the section New vocabulary.

Evolution theory as starting point

Evolution as central point of view for human development is postulated throughout De Chardin's work, which may be a point of critique for those who do not agree with scientific ideas regarding evolution or who see evolution as conflicting with religious dogma (De Chardin, 1959:12-13). As many conservative religious viewpoints sharply criticize the theory of evolution, it may appear almost paradoxical to attempt to reconcile evolution with Christianity (and with Catholicism in particular). P.G. Fothergill therefore states that De Chardin's reconciliation between science and religion may be doomed (Fothergill, 1964:24).

I tend to agree with this evaluation to a degree, but this does not mean that his whole philosophy should be rejected. Some traditional Christian thinkers dismiss, for example, De Chardin's cosmogenesis on the basis of a fundamental disagreement with ideas concerning evolution rather than the ideas that De Chardin formulates. In such a situation the basic premises of De Chardin's view may be used to deem the rest of his argument as irrelevant. However, this perspective is not necessarily representative of all Christians' views on evolution. Indeed, evolution is continually becoming more accepted in the religious discourse and the intellectual approach that is seen in De Chardin's philosophy may play an important role in current theological discussions on the topic of evolution.

Dismissing De Chardin's cosmogenesis due to its basis in evolution theory, furthermore, fails to take into account the fact that the current paradigm in the biological sciences is based on an evolutionary perspective. Any work that attempts to make a contribution to any discussion which includes scientific elements should therefore either disprove said theory or engage with the theory as part of the discussion. An alternative is to deny evolution as suitable theory for reality, but this implies that one does not engage with the current scientific debate on their terms. De Chardin at least attempts to bridge this gap and accommodate the dominant secular approach of his time (which is still relevant in the modern era). It is worth emphasizing that refusing to engage with scientific ideas such as evolution makes contributing to the secular environmental ethics discussion very difficult. It is therefore plausible, at least in a basic sense, that the level of engagement of De Chardin with scientific

knowledge makes his philosophy more applicable to the environmental ethics discussion regardless of the further ideas he develops (which link with traditional Christian ideas).

De Chardin as modernist (dualism and the project of progress)

Many critics claim that, instead of developing an integrated idea of reality in reaction to the nature-human dichotomy of modernity, De Chardin in fact simply expands the gap between mind and body. De Chardin's ideas about evolution and involution, for example, seem to indicate a dualism between spiritualism and materialism, or mind and body (Fothergill, 1964:29). Evolution occurs at a materialistic level, whilst involution occurs in the realm of mind or spirit. At the point of arrival of humanity (refer to The individual threshold of reflection (The arrival of humanity) in the previous section) however, there came a threshold point of reflection where outward evolution became less important than inward evolution of the mind. Does this imply that the gap between body and mind invariably increases as the process of involution continues? If true, this critique on De Chardin would be valid in the claim that De Chardin furthers the ontological dualism.

De Chardin was opposed to such an ontological dualism, stating that scientists preferred to focus on materialistic perspectives while theologians attempted to focus on spiritual aspects. He states, however, that both these perspectives are essential to gain an accurate idea of reality and he therefore chose to focus on the link between these two elements. The link between the physical and spiritual is undeniable, says De Chardin. Indeed, he fundamentally integrates the outward or bodily evolutionary process with the inward involution process. Although these processes may continue at different "speeds", this does not imply that one can be present without the other. Without the physical aspects that were generated through evolution, there can be no conscious mind, and at the point of reflection the same continuing forces simply take on another form. There is a direct continuation between physical evolution, before the threshold of reflection, and spiritual or mental involution, after the point of reflection. De Chardin states in *The Future of Mankind* that "no elemental thread in the Universe is wholly independent in its growth of its neighbouring threads. Each forms part of a sheaf; and the sheaf in turn represents a higher order of thread in a still larger sheaf – and so

on indefinitely" (De Chardin, 1964:87). This description indicates that De Chardin presents not a dualistic ontology, but rather a fundamentally integrated unity through the singular process of evolution that fundamentally links both body and mind. It is this single integrated process that identifies De Chardin not as dualist, but as monist, as this evolutionary process fundamentally links the "within" and the "without" and forms the basis of De Chardin's theory (Fothergill, 1964:29). Therefore De Chardin encourages humanity to become involved in the natural world by overcoming the traditional dualistic criteria utilized when describing mind and body (Kureethadam, 2003:74). This perspective clearly presents a different perspective than the central mind-body dualism of modernity.

De Chardin has a strong sense of purpose and direction in his description of humanity's continuing cosmogenesis. Does this not also entail a progression belief that is distinctive of modernity's worldview? In my view this belief in progression differs fundamentally from the project of progress developed in modernity, which is measured mainly according to economistic criteria (refer to the section Neo-capitalism as absolute in the previous chapter). The progress that De Chardin describes is not based on these criteria developed in modernity, which have negative implications for the natural world, but instead focuses on "spiritual" development. The development that De Chardin describes is based on the processes of evolution and involution, and therefore escapes the criteria for progress set in modernity. The problem with modernity's project of progress is not inherently the idea of progress, but rather the criteria that are utilized to measure such progress. Arguing against progress entails either a view of stagnation or devolution for the future. De Chardin describes this view suitably in the chapter *Some reflections on progress* from *The Future of Man* (1964) when he states that "whether from immobilist reaction, sick pessimism or simply pose, it has become 'good form' to deride or mistrust anything that looks like faith in the future" (De Chardin: 64).

In my view the criteria that De Chardin utilizes to measure human progress is better suited for a continued sustainable relationship toward nature than the view developed in modernity that all progress must necessarily be measured in monetary terms, especially since he links humanity and nature so closely to each other.

De Chardin's philosophy entails a shift away from modernity's dualistic stress between the physical world and the spiritual world, which in modernity results in an overemphasis on the physical (Tarnas, 1991:286), towards a more balanced view that considers the possibility that both the physical and the spiritual may serve as possible criteria to measure progress. Horkheimer and Adorno described how modernity had "disenchanted" the world, as scientific knowledge became the sole source of intellectual investigation (Horkheimer & Adorno, 1947:3). What De Chardin suggests is perhaps a rediscovery of this "enchantment" from before modernity, not simply for the sake of motivating ideas even though they are "delusional", but rather as a means to allow discovery into reality to occur through a variety of perspectives. This approach allows both science and religion to have a descriptive place in the development of the world, and allow both to serve as ways to measure progress in society.

De Chardin's ontology as anthropocentric

De Chardin says that humanity has a distinct quality from the rest of the natural world, through its conscious ability to reflect (De Chardin, 1959:304). Does De Chardin's claim imply that humanity must somehow see itself as isolated from the natural world, as rulers over the environment? Certainly not. Fundamentally part of De Chardin's ontology is the idea that humanity is a phenomenon just like any other in the natural world and that humanity forms a part of the continuing process of which the entire cosmos is a part (Huxley, 1959:12). In De Chardin's claim there is difference and distinction of humanity from the rest of nature based on the properties of consciousness that have risen in humanity, but also a fundamental link to the other consciousnesses in the natural environment that have manifested to a lesser degree. Man is at once an animal (bound to the same processes of cosmic development) and an angel (elevated above the rest of the natural world due to fundamental properties of manifested consciousness). De Chardin here presents an important claim that links humanity fundamentally with nature, while preserving a sense of humanity as somehow different, but not isolated, from the rest of the natural world.

The appearance of anthropocentrism on the part of De Chardin is based on the centrality of humanity in his cosmogenesis (Kureethadam, 2003:76-77). As discussed in earlier sections of this study with regards to environmental ethics, neither a strict anthropocentric nor non-anthropocentric approach are completely adequate for solving the environmental problems facing the natural world today. However, in the Contextualization section it was stated that when faced with the choice between these two axiologies, which I suggested may be a false dichotomy, a "weak" anthropocentric approach might be a better option. The reason given for this suggestion was that even if nature possessed some intrinsic value, the recognition of such value was still dependent on human choice on whether to recognise that value. Humanity serves as a measurement of conscious decision-making and action with regards towards nature. In the same way, humanity serves as measurement of self-reflection in De Chardin's philosophy due to the distinct characteristics that are found in humanity and not in the natural environment. This approach does not suggest, however, that humanity is separated from nature (De Chardin postulates a fully integrated conception of reality). Rather, humanity's conscious self-reflection provides it with the ability to make choices based on broader awareness instead of blind instinct – a point which is especially pertinent when it comes to humanity's interaction with the natural world. This does not identify De Chardin's philosophy as anthropocentric; rather it illustrates his anthropological approach in describing the origin and place of humanity in the cosmic process of evolution (Doud, 1980:90). In this sense, the human being is represented as "hominized matter" forming a parameter of evolution wherein humanity is simply the "most fully realized form known to the whole of our experience" (Kureethadam, 2003:77).

Conclusion of critique against De Chardin's philosophy

This section presented some of the main points of critique that have been suggested for De Chardin's philosophy. De Chardin is criticised as a mystic and evolutionist by theologians (Christians) and as being both a mystic and pseudo-scientific in his research by scientists. Whilst these criticisms may be regarded as valid in many cases, it does illustrate that due to the fundamental project of integration between science and religion that De Chardin attempts it will be very difficult to please these critics at the same time. Furthermore, De Chardin's overall philosophy does overcome many of these criticisms to a large extent.

The writing style of De Chardin led Medawar to describe him as a charlatan with words. Whilst De Chardin's vocabulary and approach to writing is difficult at times, I do think that this merely serves to illustrate the complex concepts that De Chardin works with. He could therefore be forgiven to a large degree for presenting his ideas in a somewhat opaque manner at times.

Points of critique which are especially relevant to this study are the ideas that De Chardin is a dualist, that he simply mimics modernity's ideas of progress and that his cosmogenesis is anthropocentric. I believe that these points of critique, while relevant, are not entirely accurate. De Chardin is strongly opposed to an ontological dualism between the "within" and "without", or the "body" and the "mind", even though he presents these ideas. Rather, he is suggesting that these two forces are fundamentally intertwined in his integrated perspective on the world (Fothergill, 1964:29). Furthermore, the criteria that De Chardin presents for measuring progress are not economistic in nature. He therefore does not present an idea of faith in progress in the same sense as modernity's. Rather, he postulates both physical and spiritual criteria as possible means to measure progress. Finally, whilst De Chardin posits humanity as central in his ontology this does not imply a separation between humanity and nature that is similar to the nature-human dichotomy described in Chapter 2. Rather, this centrality of humanity in his cosmogenesis may be attributed to De Chardin's phenomological approach, and the fact that he is developing a cosmogenesis for humans as part of nature.

In conclusion, I do not perceive these criticisms as refuting many insights that may be gained from De Chardin's cosmogenesis. Furthermore, the overall description of reality that he presents is coherent and succeeds in my view of overcoming the nature-human dichotomy of modernity to a large extent. The ways in which De Chardin's philosophy could overcome this dichotomy and thereby provide a novel approach to the nature-human relationship for environmental ethics is discussed in the next section.

3.3. Chapter conclusion

In the first chapter of this study it was stated that environmental ethics centrally deals with what the relationship between nature and humanity should be. The secular environmental ethics debate states the importance of this question and presents two central ways in which value could be attributed to nature in such a relationship. An anthropocentric view states that the instrumental usefulness of nature for humanity should be utilized as criteria for evaluating the value of nature. The non-anthropocentric view, on the other hand, states that nature has inherent value. Both these views have specific points of critique that relate to their usefulness in the environmental ethics debate. It was suggested that a possible problem when having to choose between one approach and the other is that these two options may form a false dichotomy which makes it difficult to develop a sustainable relationship between humanity and nature wherein a sensible axiology could be formulated. Therefore, it was suggested that the cause of this dualism should be investigated.

A nature-human dichotomy, a view that humanity was fundamentally separated from nature, was identified as arising in modernity in the second chapter. Several factors and root causes, such as *dualistic ontologies* and *neo-capitalism as absolute*, were stated as possibly contributing to such a view. However, due to the environmental damage and misuse that was caused under the auspices of modernity, it was suggested that a more responsible approach towards the nature-human relationship was needed (one that did not view the two as isolated from each other). Practical solutions are not enough; rather, people's worldviews and ethical frameworks should be engaged with in an attempt to develop a more sustainable nature-human relationship.

This third chapter presented De Chardin's philosophy as a possible alternative view on the nature-human relationship which could overcome the nature-human dichotomy of modernity to a large degree and influence individuals' and societal worldviews and ethical frameworks. The first section stated why the philosophy of De Chardin was relevant and presented a possible contribution to the nature-human dichotomy. The middle part of the chapter was devoted to presenting De Chardin's central cosmogenesis as formulated in his central work,

The Phenomenon of Man, under the headings 1) The universal process of increasing complexity of consciousness, 2) The individual threshold of reflection (The arrival of humanity), 3) The collective threshold of reflection (The social phenomenon) and 4) Final notes and clarification of some concepts and argumentative points. Finally, the main points of critique that relate to his philosophy were identified (refer to Conclusion of critique against De Chardin's philosophy for a more complete summary). It was found that these points of critique did not devaluate the general claim that De Chardin makes in *The Phenomenon of Man*.

The next chapter applies the philosophy in *The Phenomenon of Man* to the central question regarding a *possible means to overcome the nature-human dichotomy*. This may lead to a more sustainable relationship between nature and humanity.

CHAPTER 4: DE CHARDIN AND ENVIRONMENTAL ETHICS

In the first chapter it was seen that the natural environment is currently facing misuse and damage due to the influence of humanity. In other words, the relationship between humanity and nature was identified as problematic. The field of environmental ethics developed to fill the void between the non-human natural world (the environment and animals) and the mostly human-centred ethical theories of the past. Two main options are suggested in the field of environmental ethics for developing a perspective of value towards nature: The first, an anthropocentric axiology, states that humanity endows nature with value due to possible utilitarian considerations, whilst the second, a non-anthropocentric axiology, states that nature has some form of inherent value. It was found that, although a "weak" anthropocentric value theory may lead to a better relationship between humanity and nature than a "strict" anthropocentric perspective, neither anthropocentric nor non-anthropocentric perspectives lead to a truly sustainable relationship between humanity and nature. It was suggested that the choice between either an anthropocentric or a non-anthropocentric axiology is actually a false dichotomy, which leads to perspectives that do not truly reflect the intricacies of the nature-human relationship. It was determined that the roots of this dichotomy had to be investigated before a more sustainable relationship between humanity and nature could be developed.

The dichotomy between humanity and nature reflects one of the myriad of dualistic ontologies that developed during modernity, particularly the dualistic ontology that presents the rational (characterised in the logical faculties of humanity) as opposed to the irrational (characterised in the untamed forces of nature). Several malaises or aspects of discontent in modernity were identified that indicated possible reasons for why this dichotomous relationship between humanity and nature had developed. These were *differentiation*, *instrumental reason*, *individualism*, *secularization*, *urbanism* and *political fears*. Although these malaises or aspects of modernity gave possible reasons for the separation between humanity and nature, two more fundamental causes for this dichotomy in modernity were identified. These roots are the *dualistic ontologies* that developed in modernity in the wake of the philosophy of Descartes and Kant, and the *absolutization of neo-capitalism* as

measurement for all progress in modernity. These two roots enhanced the perspective of humanity as separate from nature, which may have led to much of the current misuse of the natural environment.

Humanity's misuse and damage of nature cannot be sustained indefinitely and therefore two possible solutions were investigated for dealing with the environmental crisis caused through modernity's ideological nature-human dichotomy. The first approach investigated was practical, involving legislation, voting and pricing, whilst the second called for broader responsibility by engaging with people's ethical perspectives and worldviews. The former approach, whilst perhaps easier to implement in the short term, has several associated problems and do not address the fundamental nature-human dichotomy generated in modernity. The latter approach is therefore suggested as more viable, even though implementation thereof depends on *social education* concerning the problematique linked with modernity's nature-human dichotomy. The willingness of societies to change in such a fundamental way also presents a challenge to implementing such broader attitudes of responsibility. It is suggested that a possible way to engage public debate with the discussion is through the use of an ontology that describes humanity and nature as fundamentally integrated. This may be referred to as a meta-narrative or even myth-structure that is based on scientific methodology (so as to engage with the multi-cultural, mostly scientific, secular environmental ethics debate). De Chardin, whose approach sketches a fundamentally holistic ontology based on current scientific theories, presents a possibility for such an approach.

The third chapter discussed De Chardin's work, particularly as presented in his most fundamental treatise *The Phenomenon of Man* (1959). This book presents a vision of the unfolding of the entire material cosmos, from primordial atoms and basic structures to the complexity of life as we know it today, through the process of evolution. The pinnacle of this development is found in humanity, who as a species has the ability to reflect upon themselves. This is a process that develops through biological evolution up to the arrival of humanity on the evolutionary timeline, whereupon evolution turns inward to become involution, due to threshold that is reached owing to increased complexity (which De Chardin sees as the axis of evolution). The evolution of externally-observable matter has become the involution of consciousness, or mind, or spirit. This implies a distinct

directionality of evolution, towards humanity, and further to a point of convergent evolution, reaching a pinnacle in the Omega Point (or, perhaps in De Chardin's view, God). The book is predicated on the idea that human spiritual or conscious development is based on the same fundamental laws as biological evolution. Through the description of this process, De Chardin sought to unify both scientific and religious perspectives to generate a fundamentally unified perspective of reality.

In this chapter, the application of De Chardin's philosophy to environmental ethics is explored further in an attempt to answer this study's central research question: *Could De Chardin make a worthwhile contribution to environmental ethics, specifically by allowing a new evaluation of the nature-human dichotomy in a way that differs from the dichotomous perspective that was developed in modernity?*

This chapter postulates that De Chardin's philosophy does indeed provide a worthwhile contribution to environmental ethics, because it overcomes modernity's nature-human dichotomy by (1) providing a new vocabulary to reformulate the nature-human relationship, (2) addressing the legacy of modernity (nature-human dualism) and (3) incorporating new perspectives into the environmental ethics debate. The nature-human dichotomy in modernity in turn influences an anthropocentric / non-anthropocentric dualism in environmental ethics, which was identified as a false dichotomy in my view and which De Chardin overcomes to an extent. De Chardin's philosophy does not only overcome the dichotomy in modernity to a large degree, it also provides several criteria that have direct beneficial application in the broader environmental ethics debate – these include the presentation of a novel holistic perspective and a re-evaluation of current technologies for the environmental ethics debate which may lead to a more sustainable relationship between nature and humanity. Specific reference will be made to possible benefits provided by such an application in this chapter, before investigating which problems may still remain in this application to environmental ethics. Finally, alternative perspectives that may also overcome the nature-human dichotomy instead of De Chardin's philosophy will be evaluated.

4.1. Overcoming the dichotomy?

The South African philosopher, Bennie van der Walt, states that a non-dualistic and less reductionist view of both humanity (culture) and nature may provide an avenue towards a more sustainable nature-human relationship (Van der Walt, 1999:26). He provides an alternative formulation of these concepts through Reformational philosophy. This formulation, whilst valid from the perspective from which the argument is being made, would probably not be accepted in the secular environmental ethics debate due to fundamental religious perspective differences. However, the central claim that Van der Walt makes remains relevant: That a more sustainable nature-human relationship may be developed by, firstly, rejecting the dualistic nature-human relationship postulated in modernity and, secondly, by rejecting the reductionist view of humanity as purely consisting of the rational individual and the identification of nature as instrument for human use, also formulated in modernity.

In continuity with this line of thought of Van der Walt, this next section focuses on the question whether *De Chardin overcomes the nature-human dichotomy of modernity* by presenting criteria that are deemed necessary for a new nature-human relationship perspective to overcome the dichotomy cultivated in modernity whilst still remaining relevant to the environmental ethics debate of today.

Criterion 1: New vocabulary

In my view a new perspective on the nature-human relationship requires, firstly, a different vocabulary. Such a vocabulary should bridge the nature-human dichotomy from the start and should be sustainable throughout the discourse. The central importance of this aspect is also identified by Light and Rolston. They state that "a legitimate goal of ethics is to provide us with a *language* ... whereby we can claim that some kinds of actions are right or wrong, or at least better or worse, independently of their cultural or legal context" (2003:6 – my emphasis). Whilst true independence from culture may be difficult to achieve, a new vocabulary may overcome a worldview bound by a *limited* cultural or legal context (such as

modernity's, wherein economic factors are absolutized). De Chardin formulates a new vocabulary in his philosophy, using terms such as *involution*, *cosmogenesis*, *noosphere* and *noogenesis* to sketch humanity's place in the cosmos and natural world. This new vocabulary may contribute to overcoming the nature-human dichotomy.

I postulate that a part of the problem with current environmental ethics debate is that the debate is firmly lodged in a vocabulary that is modernistic. However, inextricably part of this modernistic vocabulary is the idea that progress should only be measured in economic terms and that nature is fundamentally separated from humanity. There is frequent mention of pseudo-capitalistic terms and reference to nature only as providing certain benefits for humanity in an economic sense (such as "stimulating an economy"). Such phrases underline an idea of a fundamental difference between humanity and nature, presenting a view of nature as *instrument*. Light and Rolston suggest that for a human-centric ethic to work one must include "amenity" as well as "commodity" in one's vocabulary. This implies a focus on "ecological" values in addition to "economic" values" (Light & Rolston, 2003:9). They claim that such an alteration may "motivate people to change their behaviour or support stronger environmental policies" (2003:9).

The idea of legislation or environmental policies as protection for nature has been discussed in the previous chapter. There, it was argued that such legislative protection is not sufficient to change fundamental perspectives that humans have cultivated concerning its relationship with nature in modernity. Instead, one should attempt to cultivate a sustainable approach towards nature that affects both societal and individual attitudes regarding the environment (through engaging with ethical and worldview perspectives). The use of a different vocabulary which testifies to the unity between humanity and nature could contribute to such a change, especially in light of the questionable relevance of the anthropocentric / non-anthropocentric distinction identified as prominent in environmental ethics approaches. The words and approaches that are suggested in the current environmental ethics debate are simply not efficient enough to stimulate a more responsible approach towards nature.

De Chardin, in contrast, provides a holistic terminology that aims at scientific legitimacy. He develops a new vocabulary to describe the human-nature relation and unity, utilizing terms such as cosmogenesis to illustrate the fundamentally integrated character of the nature-human relationship via the continuing development of the cosmos through a central evolutionary process. This terminology or vocabulary therefore applies to the field of environmental ethics in a novel way, by presenting an ontology that differs from modernity's worldview whilst also suggesting an alternative to an anthropocentric / non-anthropocentric dichotomy that developed in environmental ethics. De Chardin's description of the cosmogenesis is embedded in the evolutionary process and it is something against which all human relevance and action must be sketched. This differs from an evolutionistic approach, because whilst engaging with scientific discourse (which tends to be reductionist in approach), De Chardin also incorporates spiritual and religious ideas and perspectives. Furthermore, De Chardin's ideas differ from vague pantheism because he engages with the terminology used in modern science and re-evaluates this terminology's application and conclusions in relation to his newly developed ontology.

Critique of De Chardin's philosophy as pantheistic was discussed in the section De Chardin as mystic, but that section indicated that the pantheism of his cosmogenesis was not completely similar to traditional religious ideas of pantheism. Furthermore, the different terminology utilized in De Chardin's philosophy serves only to further distance his philosophy from the perspectives of traditional pantheistic religions. His unique approach to humanity's place in the cosmos influences his use of terminology, and the incorporation of such terminology (such as ideas of the noosphere) in lieu of modernity's neo-capitalist approach is a strong starting point to overcome the problems inherently caused by the use of a specific modernistic vocabulary that motivates economistic approaches and a perspective of a nature-human dichotomy.

Criterion 2: Addressing the legacy of modernity (nature-human dualism)

A new perspective on the nature-human relationship requires, secondly, that several of the problems that relate distinctly to the conception of nature in modernity must be addressed.

This has already been hinted at in the previous section (New vocabulary), but the question is if De Chardin's philosophy can sufficiently address the issues of discontent in modernity – which contribute to its dichotomy between nature and human - namely *differentiation, the primacy of instrumental reason, individualism, secularization, urbanism and political fears*.

My view is that the philosophy of De Chardin indeed contributes to the resolution of these discontents of modernity. De Chardin utilizes scientific terminology and theory in his work, but also attempts to integrate fundamentally Christian and spiritual perspectives into his ontological theories. In this sense, De Chardin attempts to overcome the *secular reasoning* inherent in modernism and adds a new perspective, an openness to religious views and mysticism, to the environmental ethics discussion. He also addresses *individualism* by breaking down the barriers of the individual human in his ontology and integrating her fully with nature by connecting the development of the human consciousness intrinsically with her biological nature (through the postulation of the noosphere). The same approach overcomes the problematique related to *urbanism* to a large extent, due to the fact that De Chardin directly and intimately relates humanity to the natural world. Although there is less contact between humans and "nature" in modernity's urban social conglomerations, humans are still bodily creatures - ultimately the individual herself will never be isolated from "nature" merely by working and living in artificial environments. The separation between humans and nature, suggested by individualism and urbanism, is therefore in De Chardin's approach an illusion. Their relationship is indeed much closer for him than modernity suggests. Furthermore, De Chardin utilizes scientific arguments to develop his ontology. This means that he employs the *instrumental reason* that forms a distinctive part of the modern scientific debate in his philosophy, and indicates thereby that instrumental reason does not have to lead to a separation between humanity and nature, but that it could also be utilized to explain and enhance the intimate relationship between nature and humans.

Furthermore, De Chardin also addresses the main roots that lead to these malaises or factors of discontent, which in turn fundamentally influence the idea that humanity is separate from nature. These roots have been identified as *dualistic ontologies* and the *absolutization of neo-*

capitalism.[30] De Chardin suggests a fundamentally integrated ontology that overcomes the artificially constructed dualistic ontologies developed in modernity. In De Chardin's ontology, he claims that evolution is the primary context out of which everything emerges and to which it needs to refer, fully linking all aspects of reality through this singular process (Eaton, 2012:197). Furthermore, De Chardin suggests different criteria for measuring progress. These criteria are based on evolution (first, of a biological nature, and secondly, of mind or spirit), rather than monetary terms as absolute – for more refer to the section on De Chardin as modernist (dualism and the project of progress).

Criterion 3: Incorporating new perspectives

In the first chapter it was suggested that neither an anthropocentric nor a non-anthropocentric axiology fully provides a sustainable solution for humanity's relationship with nature. However, it was also stated that the secular environmental ethics debate mainly engages with these two alternatives as possibilities to deal ethically with nature and often disregards the possible third, namely religious perspectives. Religious approaches often provide perspectives of humanity's place in nature that sketch a duty of protection of nature. Furthermore, many religions that worship nature as sacred (or "nature" religions) see humanity and nature as fundamentally integrated. However, such approaches cannot be introduced into the secular discussion on environmental issues due to the idea that religious views and secular views are separate fields that do not belong together in a single discussion (even though such a belief seems short-sighted).

In the second chapter, in the section on Secularization, it was stated that a process of secularization and desacralization occurred in modernity and that this could have lead, at least partially, to the present day ecological crisis (Kureethadam, 2003:78). Furthermore, the secular discussion seems to have reached an impasse with the dichotomous anthropocentric / non-anthropocentric approaches that are suggested. Therefore, new perspectives and ideas that distinctly perceive nature as inherently valuable and worthy of stewardship need to be

[30] These are not necessarily the only roots of modernity that contributed to the separation between nature and humanity, but these two factors have been identified as central to the nature-human dichotomy in this study.

acquired and utilized to generate an alternative approach with regards to the nature-human relationship (without suggesting a completely non-anthropocentric approach, because such an approach has several associated problems – as were discussed in the Contextualization section). Joshtrom Kureethadam states that any proposed solution to the current ecological crisis should adopt an inter-disciplinary approach in order to allow a collective commitment to its project (2003:62). Religious perspectives have obvious value in this regard and De Chardin's willingness to integrate it into his holistic perspectives therefore makes sense when applying his philosophy to the environmental crisis.

De Chardin's suggested ontology combines both scientific and religious perspectives and therefore allows incorporation of perspectives and ideas that perceive nature as inherently valuable and worthy of stewardship from either of these approaches to reality (the scientific or the religious). Msafiri describes this ideal well when stating that multicultural spiritualities and approaches may provide humanity with a better view on the nature-human relationship by allowing a rediscovery of "basic and positive spiritual values, spiritualities, reflections and dynamics" (Msafiri, 2007:41). He also states that these approaches may also have certain limitations or weaknesses that could be detrimental to environmental care and stewardship. With this in mind, he suggests that humanity's "fundamental task is to retrace and highlight the intrinsic dynamics and earth-caring values, visions and attitudes inherent in these cultural traditions, worldviews and beliefs" (Msafiri, 2007:41). It is important to note here that this does not necessarily imply a faith commitment. Rather, it presents an approbation of those perspectives that are deemed legitimate to generate a more responsible nature-human relationship.

As stated in the Contextualization section, the current debate in environmental ethics is intensely secular due to political and cultural influences. This creates a barrier for the incorporation of ideas such as these that Msafiri describes. De Chardin, however, incorporates religious and mystical ideas into his philosophy but grounds such metaphysical speculation against a concrete scientific background. This opens the door to increasingly incorporate religious ideas of the nature-human relationship in such a way that a more responsible and sustainable approach towards the environment is cultivated (by overcoming modernity's nature-human relationship). There is, however, a question of how similar these

ideas would be to their applications in time-honoured religious contexts and whether the ideas could be amalgamated into *a new scientific form of transcendence*. Such a form of "transcendence" would imply an embrace of the cosmic scale of things, a broadening of perspective that incorporates a variety of perspectives into the discussion on environmental ethics that reach beyond conventional scientific and religious approaches towards a new evaluation of both.

Another important aspect that ethics should consider concerns how "inclusive" the circle of moral consideration should be (Light & Rolston, 2003:6). Light and Rolston argue that in the past ethics has not been inclusive enough and that humanity should be more sensitive about who counts and why. A "weak" anthropocentric axiology, though presented as somewhat viable earlier in this study, is not inclusive enough *per se* to lead to a sustainable approach towards the natural environment (a non-anthropological axiology has other problems which will not be addressed again here). The problem with an anthropocentric axiology is one of inclusivity. Aldo Leopold (1887-1949) developed the first explicit inclusive argument in the literature of environmental ethics when discussing a "land ethic" – probably the first example of a "holistic" environmental ethics (Light & Rolston, 2003:7). In his view, ethics should not be restricted to individuals (human or not) and should be inclusive of broader ecosystems. He referred to this as "the land". The central idea of Leopold's land ethic is that "if ethical considerations govern the relations between individuals and the community around them, why do we restrict our understanding of that community only to the human community? … We are all bound up together. So why should only humans count?" (Light & Rolston, 2003:7). I would even implore Light and Rolston to go further than this, to emphasize that humans are intimately dependent on the natural world. By considering the environment in this way, we are no longer subjecting ourselves to limited horizons or perspectives. We can now consider these issues globally, cross-culturally and universally. The view that De Chardin postulates is such a broad view, a "holistic" view that attempts to integrate the claims of science and religion in a way that is universal across cultural boundaries.

As stated earlier, De Chardin suggests a three-fold unification in *The Phenomenon of Man*, between (1) the material/physical world and the mental/spiritual world, between (2) the past and the future and between (3) variety and unity. Furthermore, De Chardin sought to

emphasize the fundamental link between human thought and activities (Fothergill, 1964: 26). This unity or synthesis becomes visible in De Chardin's work when he describes humanity as a phenomenon of evaluation, which must be described and analyzed like any other phenomena. Humanity and all its manifestations are proper objects for scientific study in the continuing process of which all knowable reality is a part (Huxley, 1959:11-12). De Chardin does not thereby relegate humanity to the social sciences, but instead states that the contributions of all sciences must be used to form a coherent picture of humanity (including, and especially, the evolutionary sciences). By describing humanity as a phenomenon of evolution, he intimately links each individual with the natural world. No longer is humanity (even individual humans) isolated from nature, but instead it is firmly embedded in a continuing process against which human significance must be sketched. However, this approach differs from an evolutionistic approach because De Chardin does not dismiss spirituality as some remnant of earlier social evolutionary patterns. Furthermore, his scientific basis prevents his theories from becoming mere mysticism (as he makes use of research and theories of the natural sciences), whilst also incorporating a new spiritual aspect into the discussion that goes beyond mere evolutionism.

Conclusion

These three criteria (developing a new vocabulary, addressing the legacy of modernity's nature-human dualism and incorporating new perspectives) are identified as possible criteria that should be present if an attempt is to be made to re-evaluate the nature-human dichotomy that arose in modernity. This list of criteria is not intended to be an exhaustive list on all the criteria that a new perspective of humanity and nature's relationship should fulfil. However, it is suggested that these three criteria form basic points that could be utilized to overcome the nature-human dichotomy problematique discussed in this study. Furthermore, these three points could be used to shape a new sustainable relationship between humanity and nature that could be incorporated into the secular environmental ethics debate (as discussed in the first chapter). According to these criteria, De Chardin provides certain unique benefits that overcome to a large extent the nature-human dichotomy of modernity. Furthermore, in environmental ethics this entails a movement away from the possible anthropocentric / non-anthropocentric dualism that was identified in this field in the Contextualization section.

Result: Moving away from the anthropocentric / non-anthropocentric dualism

An important facet of De Chardin's work, and one which needs emphasizing here, is that he did not consider humanity as isolated from the natural world. A fundamental part of De Chardin's work is the idea that humanity is a phenomenon of the natural world, to be studied in the same way. Furthermore, humanity forms a part of an overarching continuing process of which the entire cosmos is a part, but at the same time evolution has reached a threshold of reflection in humanity (Huxley, 1959:12). De Chardin both emphasizes a distinction (not a separation) between humanity and nature, but also identifies the common forces that influence both humanity and nature. In this way De Chardin moves away from the anthropocentric / non-anthropocentric dualism of environmental ethics by stressing the importance of adopting an evolutionary point of view for human (and cosmic) development.

De Chardin claims that evolution is the primary context out of which everything emerges and to which it needs to refer, and as such evolution plays a central role in his developing ontology (Eaton, 2012:197). Indeed, De Chardin went even further and stated that evolutionary phenomena (such as humanity) cannot be described simply in terms of its origins, but must also be defined in terms of its direction (including inherent possibilities, limitations and future trends). Huxley states that De Chardin "quotes with approval Nietzsche's view that man is unfinished and must be surpassed or completed; and proceeds to deduce the steps needed for his completion" (Huxley 1959:13). Humanity is thus not the complete "rational animal" that is described in modernity, a perspective that has led to an unsustainable relationship between humanity and nature. Rather, humanity is a flawed and developing creature that is dependent on the environment for its continued existence. Such a re-evaluation of humanity's development and dependence leads to a reinterpretation of the nature-human dichotomy of modernism.

De Chardin's philosophy describes a process of universal becoming, wherein new levels of existence and organization are the results of the development of consciousness through the process and direction of evolution. His identification of these processes inspired De Chardin

to coin the term noogenesis, which refers to the natural evolution of mind or mental properties. What De Chardin describes in his broader philosophy is therefore not a cosmology, but rather a cosmogenesis (as he refers to it, a process of change and becoming encapsulated in the evolutionary process) (De Chardin, 1959: 13). It is against the backdrop of a constantly changing and evolving universe that humanity must find its significance with regards to the natural environment. This significance is not separate from nature, but rather firmly embedded therein.

4.2. Benefits from De Chardin's philosophy for environmental ethics approaches

The previous section developed three points that a new perspective on the nature-human relationship should answer in order to possibly develop a more sustainable relationship between nature and humanity, with the result of overcoming a possible dualism between anthropocentrism and non-anthropocentrism in environmental ethics that was motivated by the nature-human dichotomy in modernity. It was seen that De Chardin's philosophy fulfils these three criteria, making his philosophy a likely candidate for the development of such a new perspective on the nature-human relationship. Utilizing De Chardin's work in this way may contribute to the debate on environmental ethics. The question asked in this section concerns w*hat benefits De Chardin's philosophy provides for environmental ethics approaches?* Two major contributions are suggested from the work of De Chardin. The first entails a novel *holistic perspective* on the nature-human relationship, and the second deals with the *use of technology* to approach environmental problems through the lens of De Chardin's understanding. Both these contributions entail a wholly different way of looking at phenomena that may be well known in everyday life, but which may contribute to shaping the worldviews and ethical perspectives of the public in such a way as to generate a more sustainable relationship between humanity and nature.

A holistic perspective: "I am he, as you are he, as you are me, and we are all together" [31]

[31] With apologies to The Beatles (Lyrics taken from "I am the Walrus", written by John Lennon and credited to John Lennon and Paul McCartney).

Pierre Teilhard de Chardin integrates modern evolutionary theory with religious Christian perspectives to generate a new cosmology. With this cosmology as basis, a more responsible relationship between humanity and the natural world may be cultivated. Whereas modernity has strived to distance humanity from nature by placing human valuation within human understanding, De Chardin strives to fundamentally integrate humanity with the natural and evolutionary process. This concern for the whole is characteristic of De Chardin's philosophy, which considers the universe as structurally whole (including humanity as part of its structure) by fundamentally integrating the natural scientific world with the spiritual. There is a basic interconnectedness of all reality in De Chardin's view due to the fundamental cosmic rootedness in matter (Kureethadam, 2003:72-73). The question is centrally whether De Chardin's philosophy successfully reframes the nature-human relationship in a way that escapes the dichotomy that is prevalent in modernity. It seems that the spiritual approach taken by De Chardin may allow a new discussion of environmental issues that changes the nature-human dichotomous didactic to one of fundamentally integrated responsibility and awareness.

It is my perspective that the wholly integrated perspective of the cosmos that De Chardin suggests does overcome this nature-human dichotomy, because it presents holistic ideas that have formed a part of humanity's religious traditions for many hundreds or thousands of years in such a way that the cultivated scientific tastes of the modern individual may also be satisfied.[32] Kureethadam identifies such a unified and global outlook as essential for solving the current ecological crisis (2003:62). De Chardin's philosophy links sharply to pre-modern views on the relationship between humanity and nature, which position humanity inside nature. An example of such a view can be found in Thomas Aquinas' views (Loubser, 2005:22). These views of humanity inside nature changed at the dawn of modernity through the influence of Kant and Descartes. However, one may ask: Does De Chardin's philosophy simply link back to these pre-modern ideas of humanity and nature without a novel perspective?

[32] This point was developed in the previous chapter's critique section, under the heading De Chardin as mystic. Of emphasis here is that De Chardin does not succumb to mystical pantheism, but presents a holistic view that is relevant to the current age's environmental ethics discussion (Kureethadam, 2003:74).

I argue that it does not. De Chardin integrates scientific knowledge from modernity with religion in his philosophy, distinguishing itself from secular reasoning in modernity and engaging with current discussions on environmental issues in ways that pre-modern philosophy and mysticism alone cannot. Although there is some degree of mystical thinking in De Chardin's work, he distinguishes himself from pure mysticism due to his dual focus (on both natural science and religion) in developing his ideas of cosmogenesis wherein humanity is incorporated into nature. De Chardin viewed humanity as a phenomenon having a total place in the world because humanity is also under the influence of the force of evolution, just as the rest of the natural world (Fothergill, 1964:33). No longer are humans separated from nature, but rather they form a unity with it. J. Baird Callicott articulates the same basic idea, though without integrating the perspectives that De Chardin provides, when stating that "nature as Other is over ... We are witnessing the shift to a new idea, in which nature is seen as an organic system that includes human beings as one of its components ... A new dynamic and systematic postmodern concept of nature, which includes rather than excludes human beings, is presently taking shape" (1992:16).

De Chardin, however, did not simply look at humanity from the outside, but sought his explanations within as well (Fothergill, 1964:33). As stated before, this may identify him as a cosmological humanist (or a spiritual cosmological humanist, if we feel that the use of such a colourful description enhances his philosophy). However, it is a testament to the universality of De Chardin's philosophy that he escapes the use of labels. He integrates "truths" from various areas of life, from ancient thought to modern science, from science, philosophy, religion and spirituality, in his ontology (Kureethadam, 2003:73). This presents a versatile ontology that could contribute to secular discussions due to its scientific dimensions, but is also not rendered barren due to a dismissal of the spiritual. This formulation therefore escapes the specialization drive of modernity, and serves to highlight the fundamentally integrated character of humanity in nature.

The holistic or integrated character of the cosmos described in De Chardin's work therefore helps to overcome the nature-human dichotomy of modernity by presenting an alternative to the exaggerated anthropocentric view of reality that was cultivated during this historical period. De Chardin presents what Kureethadam refers to as a "balanced anthropocentrism",

which learns from past mistakes in approaching humanity's place in the world (which were exaggeratedly anthropocentric in modernity) whilst also recuperating the unique dimensions of being a "whole" human (2003:76).

In the Introduction chapter I mentioned that the phrase "human destruction" might be suited to describe humanity's misuse of nature. However, describing it in such a way is not enough motivation for people to change. Rather, a fully integrated ontology that includes a unified nature-human relationship and that can be incorporated into people's worldviews and ethical perspectives is required. Kureethadam states that this holistic perspective of reality stands in contrast to fragmented worldviews (2003:70). In this study modernity as representative of such a fragmented worldview, which perceives humanity and nature as isolated, was investigated. De Chardin provides a holistic worldview that overcomes the dichotomy of modernity in a way that involves both scientific- and religious minded individuals. We can observe inklings of De Chardin's philosophy in the growing international "green movement" as the realization increases that humans are part of nature. Humans are realizing that what affects nature, also affects them (that both the "rational" human and "irrational" nature are fundamentally a part of the same cosmic processes).

Technosphere, rather than biosphere – A truly sustainable possibility?

An important aspect that De Chardin discusses in his philosophy is the rise of the noosphere (a thinking envelope that encompasses all human thought and experience stretching across the surface of the Earth). This noosphere arose through the evolution of humanity when the reflective threshold was reached, altering humanity's divergent evolution to convergent involution up to the future Omega Point (Fothergill, 1964:26,31). Fothergill states that the reflective layer of thought enabled humanity, through experience, to "learn from the past in an ever-increasing crescendo of socialization which transcends the normal biological limits of any previous biological process" (1964:32). This description of socialization may be correlated with many phenomena in the current Information Age, where the Internet, *Google*, *Facebook* and *Twitter* have enhanced the individual's ability to socialize across vast

distances, in different social spheres and across cultural boundaries in ways heretofore never before observed in human history.

Kreisberg links De Chardin's idea of the noosphere directly with the Internet when she states that De Chardin "imagined a stage of evolution characterized by a complex membrane of information enveloping the globe and fuelled by human consciousness. It sounds a little of-the-wall, until you think about the Net, that vast electronic web encircling the Earth, running point to point through a nerve-like constellation of wires" (Kreisberg, 1995). A correlation between modern communication technologies and De Chardin's concept of the noosphere are quite apparent from this description. Michio Kaku echoes this idea, for example, when he states that "there is no doubt that the internet is creating what is called an intelligent planet, that is the skin of the planet Earth is becoming a network by which intelligent creatures can communicate with each other" (Kaku, 2012).

Rolston discusses this same type of technological development from another, though not disparate, perspective. He states that a new technosphere (the realm of human technology) is constructed inside the biosphere of the Earth, a technosphere that could one day supersede that of the biosphere (Rolston, 2011:3). The reason for this is that, although biological evolution has continued for billions of years, the cultural evolution and development of the past hundred thousand years increasingly determines in what form natural history shall continue (a process that has intensified in the last two hundred or so years). Rolston states that the Earth is now in a post-evolution phase. De Chardin would state that this stage is not post-evolution; it is simply the conclusion of evolution via involution leading up to the Omega Point. Lewis Mumford is critical of the idea that the technosphere could replace the biosphere in any beneficial way, stating that technology cannot form an "independent system" from the rest of the natural world (Mumford, 1934:6). However, if De Chardin's philosophy is applied to current technological development we perceive not the replacement of the biosphere (of which humanity forms part) with the technosphere through noogenesis, but rather the fuller integration of the natural (biosphere) with the technological (technosphere). The details of this integration will be explored in Integrating opinions, Linking information and data and Digital manufacturing later in this section.

De Chardin postulated that humanity could no longer evolve physically without risking over-specialization of his body, and therefore suggested that true evolution can only occur in the intellectual sphere. Such a process implies a greater degree of complexity through greater consciousness and spiritualization (Fothergill, 1964:32). Where noogenesis constitutes an evolution of consciousness (or spirit)[33] into an increasing unity, the Internet is quickly becoming a similar phenomenon of self-conscious mental activity which forms a "thinking layer" across the planet's surface and encompasses all human thought and experience (Fothergill, 1964:31; Mautner, 2005:610-611). In what ways does the Internet differ from this concept of the noosphere formulated by De Chardin almost half a century earlier? Was the rise of this interconnected network of minds not inevitable, as a next stage of human evolution that intensifies the involution of humanity in De Chardin's view? De Chardin states further that increasing development of the intellect means that evolution in the future will progress towards a unity of "spirits" converging on a centre which draws them to itself – a point that De Chardin describes as the Omega Point (De Chardin, 1959:291).[34]

This postulate of noogenesis and the Omega Point is, according to De Chardin, where the logical application of the laws of evolution leads. De Chardin states that this evolving community of spiritual beings in the noosphere must be both universal and personal, and therefore the Omega Point should be identified with God as described in his Christian tradition. Whilst this might be a valid interpretation, there is no need to identify the Omega Point with God in this way (although, in my view and on a meta-narrative level, this identification has religious, aesthetic and poetic value). What is clear, however, is that De Chardin saw the noosphere as evolving through continual socialization to such a point where the sheer mass of reflective thought lifts humanity up to a place of both individual and collective appreciation of higher things. The process continually hyperpersonalizes both the community and the individual (Fothergill, 1964:32).

[33] Consciousness, Mind, Spirit, or *Geist* (as presented in Hegel's philosophy, though Hegel's conception of *Geist* differs from De Chardin's description of the "within").

[34] It is perhaps necessary here to emphasize again that De Chardin does not suggest a dichotomy between body and mind. Both are intertwined in the same evolutionary process. Without the mind, there can be no body and without the body, no mental processes as possible.

It is not remiss then to state that the noosphere that De Chardin described was a postulation of involution of consciousness that was only missing a mechanism. Now that mechanism may be identified as technological in character. This mechanism of linking human thought (though not yet consciousness) has very direct implications for how humanity deals with the natural environment. Loubser also identifies this last approach as a possible solution to the nature-human dichotomy, described by her as "a mindset which regards the idea of enmity between humanity and 'nature' as superfluous" (2005:3). The noosphere represents the entry of humanity into collective consciousness wherein humanity do not only function to shape themselves, but can now "collaborate in another work, in another 'opus', ... the completion of the world" (De Chardin, 1968:29). The Internet is therefore not simply a tool; rather it represents a fundamental step forward by humanity in an unknown direction if evaluated via De Chardin's view. Such a re-evaluation does not imply that technology replaces nature, but rather allows the development of a worldview wherein technology presents a new threshold for the interaction between humanity and nature in a more responsible and wholly unique way.[35] The Internet as central communications technology in the Information Age has three critical characteristics that allow it to be utilized differently when dealing with environmental problems if evaluated through the lens of De Chardin's work:

Integrating opinions

In the earlier sections of this study it was stated that humans are becoming more aware of their link with nature, realizing that damage to nature also entails damage to humanity. The means by which this realization has occurred is partly through the Internet, which allows disperse humans to communicate much more effectively. How the Internet also increases

[35] This description links to Mumford's central view on worldview and technology: "Although [Mumford] acknowledges the importance of material conditions in society and culture, [he] asserts the relative autonomy of man's 'idolum' or Weltenschauung and so rejects as inorganic (hence mechanistic) the vulgar Marxist view that ideas, values and aesthetic symbols merely reflect or conceal material factors" (Casillo, 1992: 92). This autonomy of humanity's worldview and technological ingenuity links sharply to De Chardin's noosphere, which has been identified as similar to the Internet and which functions to positively re-evaluate the nature-human relationship through a phenomenon distinctly different (though not wholly separated) from material factors.

scientist's ability to analyze global environmental data is described in the next section Linking information and data. However, the immense social applicability of the Internet allows humanity to respond to the environmental crises through a unification of opinions rather than simply through voting or economic means in limited geographical contexts. This ability increases public awareness of environmental issues and allows individuals to respond to growing environmental problems and to sway governments. Such an influence on the natural environment, outside the confines of specific governments, echoes Marshall McLuhan's vision of the global village (Kreisberg, 1995). Through the internet, local environmental issues can get immediate global attention and interest – experts can give their advice, community members can raise their concern, and perpetrators can be exposed.[36]

De Chardin refers to the idea of growing social opinions having greater influence when describing his noosphere idea (refer to The collective threshold of reflection (The social phenomenon)). He stated that in the social context a capacity for attraction or repulsion develops (De Chardin, 1959:307), similar to attraction and repulsion in earlier stages of evolution. In the earliest stages of evolution this attraction and repulsion was merely physiological (pleasure-pain mechanisms), but this capacity for attraction or repulsion developed into sympathy and aversion in humanity. Finally, with the collective threshold of reflection this sympathy and aversion developed to a communal scale. However, I postulate that this phenomenon of social attraction and repulsion, which I relate to social integration via the Internet, occurs on a much larger global scale. Ergo, it might be claimed that this greater capacity for sympathy in humanity, for example, would increase the intensity of the overall sympathy due to the grouping of a large variety of individuals' feeling of attraction. This becomes especially pertinent when the sympathy is engaged in the context of protection of the natural environment. Communal sympathy towards "nature" has the capacity to change the ways in which humans engage with nature much more readily than individual opinion. On the other hand, social repulsion could then also be directed towards entities that misuse the natural environment.

[36] A challenge in this regard is of course the availability of the Internet, especially in developing countries which often experience the most environmental damage. The availability of the Internet is however increasing due to the rapid spread of cellular networks and the use of smart phones.

The social force of such an integration of opinions can clearly be seen in cases where Internet opinion has turned against a real-world person, company or institution. This phenomenon is also known in Internet colloquialism as the *Streisand Effect*, a term coined by online blogger Mike Masnick of *Techdirt* (Bernoff & Li, 2008:7). The term refers to the power that the online community yields due to a lack of centralized regulating authority. The Streisand Effect refers to Barbra Streisand's attempts to sue a photographer for posting a picture of her house on his website. Soon, hundreds of websites posted the same picture as backlash against this action by Streisand and the photo attracted many times more attention than it would have had otherwise. This serves to illustrate the power of the Internet's community, combined with the ability to spread information much faster. Furthermore, the Internet allows opinions to be integrated regardless of socio-economic stratification and other economic factors. What is relevant for this study is the idea that such social power could be utilized to alter public policy and governmental approaches toward environmental issues if the fundamental dichotomous worldview between humanity is overcome through the use of newly developed worldviews, such as De Chardin's ontology. In the Barbra Streisand case described above, this power seems almost comical. However, the existence of outlets such as *WikiLeaks*, which publish news leaks, undisclosed information, and classified media supplied by anonymous sources hints at the power of the Internet as environmental tool if utilized in situations where the environment is being damaged or misused.

This is a new paradigm for evaluation of the nature-human relationship that occurs through a very specific mechanism: That of *technology* (which is ironically often seen as something negative in regards to environmental issues), specifically the interlinking of ideas through the Internet, preceded by biological evolution in the past and followed by the possible future direct interlinking of human minds. Evaluated through De Chardin's ontology, the Internet becomes a fully integrated aspect of humanity (as a further development of human evolution). However, this interlinking of human "minds" need not necessarily refer to a possible future biological interlinking of human brains. Rather, human "minds" are already being interlinked and integrated with the natural environment through reading about and discussion of environmental issues, current "greener" attitudes and contact with environmental experts. Such approaches are social and interactive. The concept of Web 2.0, a term coined in 1999 by Tim O'Reilly, emphasizing the participatory, convergent and user-generated social media aspects of the Internet, is particularly relevant here to emphasize the

link between De Chardin's noosphere postulation (O'Reilly, 2005). However, even more relevant is the development of Web 3.0, wherein terms such as semantic web and personalization play a central role (Amit, 2009). It is sensible to compare the Web 3.0 development to De Chardin's noosphere as form of hyperpersonalization for both the community and the individual (Fothergill, 1964: 32). This implies a strong link between humanity and technology, both of which may be further unified with nature through increasing forces of sympathy as described in De Chardin's ontology. This unification strongly links humanity with each other, and with nature by, for example, allowing advanced generated of data concerning the natural environment. Although this might perhaps not be a direct linking of "wild" nature with humanity, it is at least creating an awareness of nature in humanity's "cyberspace consciousness".[37] The Internet has, however, the ability to link humanity in a stronger sense with nature's plight in the environmental crisis.

Linking information and data

The Internet allows access to vast amounts of information on environmental issues in addition to allowing social opinions to be generated and conglomerated, as discussed in the previous section. Belshaw states that countries with lower levels of environmental problems usually also have, apart from more democratic societies and greater accountability, communities with *increased access to information* (Belshaw, 2001: 42). The interlinking of individuals through computer networks allow people to come into contact with information on environmental damage much more readily than in the past. In fact, it could easily be asked what greater source of information is there than the Internet, with its linking of books and academic writing in addition to general websites, to access information on topics such as the relationship between humanity and the environment?

[37] For example, computer applications like "Street View" on Google Maps allow more diverse observation of the broader natural environment beyond geographic confines. Such electronic communication means allow contact between humanity and the natural world through pictures, video images, webcams and sound clips, which increases the interactivity between humans and nature. In the past, the means to interact with nature on such a global scale were limited to actual travel, magazines or books.

Easy and quick access to information allows global communication of events such as the Deepwater Horizon oil spill of 2010 in the Gulf of Mexico on the BP-operated Macondo Prospect – the largest accidental marine oil spill in the history of the petroleum industry (Robertson & Krauss, 2010). In the past such information would have been communicated to readers by publications such as newspapers and through limited TV coverage.

The rise of the Internet allows individuals to evaluate a myriad of information sources, which has the effect of giving people a broader perspective on issues (which could also contribute to the establishment of a broader responsibility with regards to these issues, a requirement for a more sustainable nature-human relationship described in the section Responsibility in a broader context (influencing people's ethical perspectives and worldviews). The central problem with newspapers or single publications is that these means of accessing information on current events are susceptible to personal motivations by the journalist or publication, whilst the Internet's social aspect allows the integration of multiple perspectives and serves to dilute the agendas which may be present in a single publication. Such agendas may include the enforcement of a particular worldview, such as the modernistic perspective on the nature-human relationship when environmental issues are discussed, or inaccuracy in reporting events, or protecting companies' financial interests.

The Internet's ability to link information does not only apply to allowing individuals to learn about current events that affect the environment. The ability of environmental researchers to correlate disparate environmental data through global analysis techniques also becomes feasible through use of the Internet. This interlinking of data banks and information allows the integration of environmental data on a scale not seen before (the MEA is an example of such an integration of research in a way that would have been problematic in decades past). The Internet also allows a mass of data on the Earth's climate, biomes and animal life to be collected and integrated, granting new perspectives that were never possible before. According to the ideas postulated by De Chardin, this process should only intensify to generate more information on humanity's interaction with the natural world and increase public awareness on these issues.

Digital manufacturing

The previous two sections focused on the ability of the Internet to link human individuals to each other and to the natural world via De Chardin's idea of the noosphere in a technological context. This next section focuses on the Internet as means to directly address the practical aspect of over-production in the modernistic context.

As stated in the section Neo-capitalism as absolute, the main measurement for progress in modernity is based on economic considerations. In the traditional sense, this economic growth is generated by production (and over-production) of real-world goods. Such approaches to production generally lead to a regard only for economic factors, or utilitarian motivations, rather than preserving the natural environment. This leads to a situation where the natural environment may be damaged and misused as long as economic growth goals are achieved. However, the Internet presents a way around the problematique associated with physical production approaches which utilize economic factors as only measurement for progress in modernity. As stated earlier, a fundamental reformulation of the criteria used to measure progress, such as De Chardin's idea of spiritual and physical development, is necessary to develop a long-term sustainable relationship between nature and humanity. However, such a view might be difficult in the short-term as humanity is still focused to a large extent on monetary factors. Therefore, incorporating De Chardin's ontological perspectives into the social context (whilst still utilizing the capitalistic criterion for measurement of progress) may be a necessary step for changing people's worldviews and ethical frameworks.

How could this intermediate step be achieved? I postulate that the utilization of the Internet, which has already been correlated to the noosphere in De Chardin's ontology, provides an avenue for developing such an intermediate step by using digital items as partial replacement for real-world production. The shift that is emerging from real-world books and CDs toward virtual forms of these products, for example, show that in many cases no production from natural resources is necessary to generate an item with economic value. This serves as intermediate step between economic factors as measurement for progress in modernity and a

move away from simple economic factors towards other criteria to measure progress, such as De Chardin's idea of spiritual development through involution and noogenesis. However, books and CDs form only a small part of the production of countries. Such items therefore have only a limited impact on the natural environment. Larger industries, such as national utilities services that produce electricity, for example, cannot easily be replaced by virtual items. These industries contribute roughly 17.58% to global warming and may generate 7.28% of industrial toxic substances emitted into the environment, whilst the motor vehicle industry may contribute roughly 6.15% to global warming and 4.62% to human environmental toxicity. However, retail services only contribute 3.89% to global warming and 4.69% to human environmental toxicity (Kuang, 2013). For digital manufacturing and production to truly benefit the environment, a broader implementation of this concept of digital goods and items with real-world economic implications (in line with current modernistic trends) should be explored.

The rise of a *virtual economy* in online virtual environments present the first hints of the possible generation of such a system that directly links to real-world economics and may provide a way to lessen humanity's impact on the natural environment. Player avatars, digital items and virtual property in popular massively multiplayer online role-playing games (MMORPGs) and online digital worlds such as *World of Warcraft*, *Eve Online* and *Second Life* have virtual currency value, real-world currency value and their use is governed through real-world legal implications, even though such avatars and digital items only exist in the cyberspace. Life simulations such as *Second Life* have taken the most dramatic steps in linking virtual economy with real world economic and legal factors by recognizing intellectual property right of items created in-world and for introducing *laissez-faire* economic structures for the buying and selling of Linden Dollars for real money on third party websites.[38] Linden Dollars can be purchased on the LindeX exchange provided by Linden Lab, by resident users and through independent brokers by using US dollars, directly linking the in-world economic systems to real-world economic systems. Similarly, a recent battle in the space simulator MMORPG *Eve Online* involved over 2000 people and led to an estimated $22,000 in losses due to damage done to virtual spaceships (Lopez, 2013). Both these examples show that such virtual items can generate a virtual economy, and that this

[38] Linden Dollars are the in-world *Second Life* currency.

virtual economy could have real-world implications that lessen the burden on natural resources if properly implemented.

Earlier in this section it was stated that goods production (retail services) only lead to a fraction of environmental damage in comparison to utility services and the motor industries. Therefore, the possible relief that digital manufacturing provides for the environment seems minimal. However, as humanity's integration with the Internet increases[39], the real-world economic implications of digital items could provide an incentive to down-scale over-production in real-world facilities. Such facilities were utilized to a degree in the modernistic context to stimulate economic growth, but by using digital manufacturing these over-production facilities would no longer be deemed the only option for developing a country's economy. The effect could lead to a decrease in both misuse of natural resources and in the associated environmental damage.

Conclusion

De Chardin provides us with a new way to evaluate the Internet as technological development, as part of an integrated process of evolution rather than as a disparate mechanism. This elevates the current technology's use to a higher level. Julian Huxley stated that because evolution has "become conscious of itself" it follows that the spirit is indestructible, implying personal indestructibility or immortality of individual consciousnesses (Fothergill, 1964:32). Such a unification of thoughts and permanence of ideas may already be observed to a small degree in the "cyberspace" noosphere. These inklings show that we are at the precipice of vast changes in the human condition due to the way in which technology is utilized.

The question becomes whether technology should remain as some opponent to a responsible relationship between humanity and nature, or whether technology could be utilized in such a way that the relationship becomes more sustainable. Re-evaluating the Internet through the

[39] Or, stated utilizing Teilhardian terminology, as involution of the noosphere increases.

perspective of De Chardin cosmogenesis allows the integration of not only nature and humanity, but also nature and technology, in such a way that technology becomes a central tool in preserving nature. Furthermore, the development of technology is not just seen as a random development of human history, but rather as a fully integrated element of the cosmic process. Such a conception allows a re-evaluation of technology in a way that allows the development of a more responsible nature-human relationship.[40]

4.3. Which problems remain?

The previous sections have attempted to show some of the specific benefits that De Chardin's ontology provides when applied to the question of the nature-human relationship which forms a central problem in the environmental ethics discussion today. However, these benefits do not necessarily suggest all problems inherent in the nature-human relationship have been overcome. This section will ask *which critical problems remain after the application of De Chardin's philosophy to the question of the relationship between humanity and nature?*

The opaque nature of De Chardin's philosophical claims makes it difficult to incorporate his ontology into the general environmental ethics dialogue as a worldview that replaces the nature-human dichotomy of modernity. Whilst De Chardin's cosmogenesis could lead to a more sustainable relationship between nature and humanity which fundamentally integrates the two, to fully grasp its implications would require a large amount of technical education. There is therefore the problem that De Chardin's cosmogenesis would be just as distant and removed from the political decision making arena on environmental issues as the non-

[40] This section of the study has focused mainly on current trends and developments in the technological world, rather than speculating on possible future developments. However, there are many further possibilities for the development of the Internet as part of De Chardin's suggestion of a noosphere. Michio Kaku, for example, describes that the next steps in the coming decades will not be the Internet, but rather a Brain-net. This postulation of future technological links sharply to De Chardin's ontology, made practical through the mechanism of technology. This implies the linking of technology with the living human mind (building on current research that Kaku describes at Berkley University), leading to eventual brain-to-brain communication (Kaku, 2012). Global research projects such as *Russia 2045* (www.2045.com) also illustrate that these brain-to-brain interlinking developments may become more prominent in the future.

anthropocentric views suggested by some environmental ethicists, as discussed in the Contextualization section. One of the central problems in presenting this re-evaluation of the nature-human relationship is thus how it will be implemented. However, De Chardin's perspective does offer certain benefits beyond those of current views on the nature-human relationship views, such as those found in modernity. These benefits may make it worth the effort of increased education of the general public to cultivate such a view on the relationship between nature and humanity, because such a perspective could engage with the worldviews and ethical frameworks of the public to generate a broader view of responsibility towards nature.

Furthermore, it is not certain to what degree the mystical elements of De Chardin's cosmogenesis will be acceptable for the secular environmental ethics even though De Chardin functions from an evolutionary basis (which forms a fundamental part of the environmental ethics discussion). However, as described in the section Criterion 3: Incorporating new perspectives, the incorporation of new perspectives such as the religious views into the secular dialogue *in a sensible way* may contribute to a more sustainable perspective on the nature-human relationship.

De Chardin also has a tendency to focus on the "macro" or cosmic level of things, which includes collective consciousness and the noosphere, but not on the "micro" level of individual human groups. This makes the incorporation of De Chardin's philosophy into environmental ethics somewhat problematic because it implies a barrier in engagement with local cultures, natural religions and the native wisdom of local people. Kureethadam states that any attempt at an ecological renewal programme should begin at the "micro" level by acting locally rather than globally (Kureethadam, 2003:84).

These problems, whilst not providing a comprehensive account of all problematique associated with applying De Chardin's philosophy to the environmental ethics discussion, do

not discount the possible contributions that De Chardin could make to said discussion.[41] In fact, the cosmogenesis that De Chardin presents provide several unique contributions to overcoming the anthropocentric / non-anthropocentric dualism identified in environmental ethics and modernity's nature-human dichotomy.

4.4. Alternative answers to the nature-human dichotomy

This study has presented De Chardin as answer to the problematique related to the nature-human dichotomy in modernity specifically, and to difficulties in developing a more sustainable relationship between the nature and humanity in the broader environmental ethics debate. However, could other authors not also be suggested as alternative answers to this question? This section will investigate possible alternative philosophers who could provide an answer to the question of a more sustainable nature-human relationship, whilst still functioning in the same sphere of investigation between science and religion as De Chardin, by asking *what other alternatives are there in addressing the nature-human dichotomy except for De Chardin?*

Alfons Auer (1915 – 2005) presents a view on the relationship between nature and humanity that is relationally anthropocentric. He states that self-critique and self-relation are important tools that allow the individual to act pragmatically and ethically with regards to the environment, guided by anthropological meanings and consequences. Auer also rejects the dualism between nature and humanity, arguing instead for the intrinsic worth and rights of nature – i.e. by formulating a non-anthropocentric axiology, although this is formulated as moderate anthropocentrism in his philosophy (Msafiri, 2007:63-67).

Albert Schweitzer (1875 – 1965) suggested a biocentric approach towards the nature-human relationship. In this view animal and plant life are of principal concern in the environment,

[41] Other concerns in this regard are described by Kureethadam, such as De Chardin's optimism and the problematique associated with the problem of evil in De Chardin's philosophy (which De Chardin later addressed by stating that he focused only on the positive aspects of the cosmos, rather than the negative).

leading to a view of "ehrfurcht vor dem leben" (awe for life). This description clearly links to aesthetic traditions and behaviour in addition to traditional environmental approaches and highlights the acceptance of the rights of all other beings to life (Msafiri, 2007:73-74).

Peter Singer (1946 –) describes a pathocentric foundation for evaluating the place of humanity in nature – a central focus on animal rights. His ideas have lead to an increased concern regarding animals, but his stance also has some limitations and weaknesses (Msafiri, 2007:69-73). However, his philosophy presents a novel view on the environment that is animal-centric, rather than anthropocentric.

Thomas Berry (1914 – 2009) is a De Chardin scholar whose main focus was the environmental crisis and other socio-ecological crises. Berry suggested that all aspects of human activity must be addressed if progress in the environmental crisis is to be made. Two key elements of his philosophy are, firstly, that everything should be described in a universal context, and secondly, the significance of a Christian salvation narrative, or universe story, for understanding and addressing environmental crises (Eaton, 2012 (2):201 - 205).

Anne Primavesi (1934 –) is an ecologist and theologian who wrote several books that focus on the Gaia hypothesis and theology. She presents the idea that theology should be fundamentally integrated with the evolutionary paradigm in a multi-dimensional manner that elevates the theological discussion in an intellectually relevant, culturally resourceful and spiritually insightful way. This implies a reinterpretation and enlivenment of theology that provides a means to address the nature-human relationship (Eaton, 2012 (3):206 - 211).

Alfons Auer, Albert Schweitzer, Peter Singer, Thomas Berry and Anne Primavesi were discussed in this section as possible alternatives to De Chardin in application of environmental ethics. Other thinkers which could also be utilized in this context are Lecomte du Noüy (who focuses on evolution and human destiny) and Julian Huxley (who focuses on the conception of an evolutionary humanistic world religion) (De Wit, 1962:5). However, De Chardin presents a unique view on the integration between evolutionary sciences and

theology that closely links his philosophy to the natural world. This makes his works especially appropriate for application to the field of environmental ethics in a way that few other philosophers manage. His work is also similar to some of these alternative perspectives, and his ontology is, for example, influential in the works of Thomas Berry and Anne Primavesi. Furthermore, De Chardin provides a way to engage with both the secular dialogue on the natural world and with theological discussion on evolutionary theory which are becoming more prominent in the current (postmodern) era (Eaton, 2012:200). De Chardin even presents an avenue for linking these two discussions in a way that may generate a more responsible view on the natural world (as has been discussed in this study).

4.5. Chapter conclusion

This chapter integrated De Chardin's philosophy in the current environmental ethics debate. It was illustrated in the section Which problems remain? that even though some problems still remain after applying his philosophy to the environmental ethics question of the nature-human relationship, the possible benefits supplied by his philosophy may be enough to overcome these problems. Nevertheless, several philosophers were mentioned as possible alternatives to De Chardin's cosmogenesis. These authors are Alfons Auer, Albert Schweitzer, Peter Singer, Thomas Berry and Anne Primavesi. However, De Chardin presents a unique view on the integration of all elements of reality (including nature, humanity and technology) that differs in a very basic way from the ontologies presented by other philosophers and makes his philosophy especially applicable for the environmental ethics discussion. Few other authors manage to describe reality in the far-reaching way that De Chardin does.

The first part of this chapter described several criteria that could be utilized to determine whether De Chardin's cosmogenesis overcame the nature-human dichotomy of modernity, and per implication therefore provide a way to overcome the anthropocentric / non-anthropocentric problematique that was identified in the Contextualization section. This dualism was identified as a possible stumbling block in the formulation of a sustainable relationship between nature and humanity in environmental ethics. To overcome modernity's

dichotomy, De Chardin had to provide a *new vocabulary* for the discussion that did not utilize the economistic terminology consistently applied in modernity, provide an ontology that *addressed the factors and roots of modernity* that contributed to the view that humanity and nature were isolated from each other, and provide a means to incorporate *new perspectives* into the environmental ethics debate. It was argued that De Chardin's cosmogenesis fulfilled these criteria and that it could therefore generate a worldview that moved away from the current anthropocentric / non-anthropocentric dualism in environmental ethics towards a more fundamentally integrated way of evaluating the nature-human relationship.

Two distinct benefits provided by De Chardin's ontology is that it provides a holistic perspective on the nature-human relationship, and that it allows for a re-evaluation of current technologies in a way that presents a holistic integration between nature, humanity and technology. This technosphere has the benefit of integrating public opinions on environmental issues, linking diverse data and information on the environmental crisis and the potential of replacing the manufacturing of goods (which usually links to over-production and misuse of the natural environment) with digital items. Each of these benefits from technology is only possible through a re-evaluation of how we see technology, for example by utilizing De Chardin's ontology.

CHAPTER 5: CONCLUSION

The purpose of this study was to investigate the philosophical problems of modern environmental ethics. It was postulated that modernity's dichotomy between nature and humanity is a root cause of this problem. As an alternative to this dichotomy, the links between De Chardin's ontology and current environmental issues, especially those which have become prevalent in the wake of modernity, were explored. It was argued that De Chardin could provide a new approach to the relationship between nature and humanity and that this re-evaluation could lead to a more sustainable environmental ethics. This final chapter summarises the contributions made by this study, and specifically investigates the value of the application of De Chardin's philosophy to environmental ethics as means to solve the study's research question: *Could De Chardin make a worthwhile contribution to environmental ethics, specifically by allowing a new evaluation of the nature-human dichotomy that differs from the perspective that was developed in modernity?*

Study summary

The first chapter described some of the main themes of environmental ethics. The central question in the field of environmental ethics concerns the definition of a sustainable nature-human relationship, which leads to a perspective on how nature is valued. Two main approaches with regards to attributing value to nature are central in the environmental ethics discussion. The first focuses on the instrumental value that humans attribute to the natural environment, whilst the second states that nature possesses some intrinsic form of value. A third approach is religious in nature, but this approach is rarely considered applicable for the secular environmental ethics discussion. The choice is therefore centrally for either an anthropocentric or non-anthropocentric axiology when dealing with nature. Whilst a "weak" anthropocentrism may lead to a beneficial nature-human relationship, a more fundamental reformulation of the nature-human relationship may be a better approach to dealing with the current environmental crisis. The problem, it was suggested, may be that the

anthropocentrism / non-anthropocentrism choice is a false dichotomy. It was then asked where this dualistic approach in environmental ethics possibly originated.

Modernity was suggested as a broader historical period that contributed to the view that nature and humanity are fundamentally separate. Several factors were identified in this chapter that fundamentally led to the idea that nature and humanity are isolated from each other. These factors include *differentiation*, *instrumental reason*, *secularization*, *individualism*, *urbanism* and *political fears*. Beyond these factors, two roots were identified as influencing these other factors: *Dualistic ontologies* and *neo-capitalism as absolute*. These factors and roots thus contribute to a nature-human dichotomy. This dichotomy leads to environmental damage and misuse in the modern world, which could in the long-term negatively affect human life. Modernity's dichotomy therefore leads to negative environmental consequences, which implies that a more sustainable approach towards the nature-human relationship is needed. Two approaches may be utilized to generate a more responsible nature-human relationship. The first is practical and involves legislation, voting and pricing, whilst the second calls for responsibility in a broader context by engaging with people's worldviews and ethical frameworks through education. This education implies that the negative nature-human dichotomy of modernity should be replaced with a more sustainable view on the nature-human relationship.

Teilhard de Chardin's philosophy was suggested as ontology that leads to a more responsible relationship between nature and humanity whilst overcoming the nature-human dichotomy of modernity. De Chardin claims that evolution is the primary context to which all aspects of reality relate and that evolution plays a fundamental role in the developing cosmogenesis of the cosmos. Additionally, the nature-human relationship should be re-evaluated according to this evolutionary context. Several critique points with regards to De Chardin's philosophy were stated, but these points of critique do not outweigh the possible contributions that De Chardin could make to the environmental ethics discussion.

De Chardin's philosophy was then applied to environmental ethics, particularly as a means to overcome the nature-human dichotomy. Several criteria were postulated to overcome this

dichotomy. These criteria include the establishment of a *new vocabulary* that incorporates terminology different than the economistic perspective of modernity, the ability to *address the legacy of modernity* and the means to *incorporate new perspectives* into the environmental ethics discussion. De Chardin's cosmogenesis fulfils these requirements and thereby moves away from the anthropocentric / non-anthropocentric dualism identified in the environmental ethics discussion. Furthermore, De Chardin's philosophy provided distinct benefits for overcoming the nature-human dichotomy that developed in modernity. The first of these benefits is a *holistic perspective* on the nature-human relationship. Secondly, his cosmogenesis allowed for a *re-evaluation of current technologies* to integrate nature, humanity and technology

Value of study

In this study it was suggested that De Chardin's philosophy makes a worthwhile contribution to environmental ethics by re-evaluating the nature-human dichotomy that arose within modernity. The central contribution that De Chardin's cosmogenesis allowed is to overcome the nature-human dichotomy in modernity, which was postulated as leading to an anthropocentric / non-anthropocentric dualism in environmental ethics to a large extent. This central dichotomy is overcome by De Chardin's presentation of a worldview (through his cosmogenesis) that influences ethical frameworks regarding the way in which humanity deals with nature.

De Chardin's thought sought to counteract materialistic evolutionism and blind spiritualism by a theory of a fundamental process of evolutionary development that forms the context of the entire cosmos, humanity and nature included – a holistic view of reality wherein faith and science converge (Fothergill, 1964:33). This worldview provides a vocabulary to describe the nature-human relationship in ways fundamentally different from economistic perspectives which are dominant in modernity, it succeeds in overcoming a variety of problems that developed in modernity which negatively affect the nature-human relationship and it opens up a dialogue for different approaches regarding the question of the nature-human relationship. These facets of De Chardin's ontology allow it to contribute to a worldview that

is inherently more caring towards nature, due to the postulation of a fundamentally integrated relationship between nature and humanity.

Furthermore, a re-evaluation of the Internet as a further development of De Chardin's cosmogenesis (described as the noosphere) also linked technology to nature via humanity. This presents a bevy of new ways to engage with the environmental crisis, instead of postulating technology as an enemy towards the natural environment. Reframing the current relationship between humanity and nature (and also, technology and nature with humanity as link) in such a way has the potential to motivate public decision makers to make different moral choices with regards to nature, rather than being motivated by simple economic or political gains.

In a certain sense, De Chardin may be identified as a *deep ecologist*, a position that advocates the inherent worth of all living beings beyond their instrumental utility for human needs and links to non-anthropocentric axiologies (Van der Walt, 2011:24-25). However, his philosophy reaches beyond the confines of environmental ethics into a realm where all elements of the cosmos – from humanity to nature to technology, from science to religion – are integrated in a way that overcomes the nature-human dichotomy of modernity to a large degree and presents a worldview that could potentially lead to a more sustainable relationship between humanity and nature.

Science, Literature and myth-structures

A last question remains: Does De Chardin succeeds in integrating scientific and religious perspectives into his view of nature? Will his philosophy, in other words, be acceptable to natural scientists and on what level does it make a contribution in this regard?

Octavio Paz declared in the 1960s that literature as cultural leader had been overtaken by science, because science could prove things whilst literature could not. However, science has moved beyond the sphere of the directly observable into the realm of logical and mathematical constructs when describing, for example, quantum physics. Charl-Pierre Naudé

suggests that a certain interpretation of science reveals that it links much more closely with fiction and poetry than was imagined before (Naudé, 2012). Postmodernity describes this as the construction of an encompassing meta-narrative, of which Postmodernity is critical. However, if science truly closely links with the literary in its modern incarnation, then surely all disciplines that make "truth" claims (such as science and religion) are just ways that show how humanity tries to make sense of reality, an attempt to reach Ultimate Reality via sometimes the construction, other times the discovery, of such grand meta-narratives. Such a construction or discovery largely reflects literature's descriptive approach.

De Chardin's cosmogenesis may therefore, at the very least if all other claims made thereby are doubted, provide just such a meta-narrative to be considered as possible reflection of Ultimate Reality.[42] The point, however, is not that the *literary approach* discussed earlier in this section should compete with natural science's claims regarding truth. Rather, such a *literary approach* should serve a worldview-generative function.[43]

In other words, science may provide empirical, rational explanations or "evidence" for elements of reality, but myth structures found in a *literary approach* allow humanity to emotionally and responsibly engage with parts of reality outside individual human experience. In this sense, natural science may generate a *sense of wonder* for the complexity of the natural world, but not *love* for nature. Humans do not connect in an emotive way to cold facts, which may describe the human drive towards meta-narrative generation through scientific speculation, religious stories and philosophical perspectives on reality. De Chardin shows that unless humanity loves the natural environment, it will not be able to protect it from damage and misuse (Kureethadam, 2003:74). Furthermore, the avenue that De Chardin's philosophy suggests for a new evaluation of technology via the concept of noosphere will possibly generate a human community that "have a devotion to the universe and accept its vocation to love and serve the world" (Hill, 2001:55). De Chardin, therefore,

[42] This ontology, as was argued in this study, has the potential benefit of generating a more sustainable relationship between humanity and nature, through the fundamental integration of both science and religion, as a possible way to deal with the current global environmental crisis.

[43] Examples of this literary approach could include modern developments of natural science, certain perspectives on religions and broader philosophical perspectives, such as De Chardin's cosmogenesis, all of which attempt to explain reality in a "poetic" or "emotive" way that reaches beyond mere empiricism.

provides a *literary approach* with regards to the cosmos that allows emotional association of humanity with the natural world.

Such meta-narratives or myth-structures "serve to bestow meaning and order on experience, to effect transcendence of the temporal as meaningless time" (Weller, 2011:7). In the field of science, for example, it is not uncommon for scientists in a particular field to look beyond the empirical aspects of their own field to interpret the data that is generated therein. This describes a desire to pass from the immanent to the transcendent (Fothergill, 1964: 25). De Chardin's philosophy presents, at the very least, such a myth-structure that could provide positive change in the natural environment if incorporated into the environmental ethics discussion, as it allows a move from the immanent to the transcendent. De Chardin's approach reflects the fundamental belief that "all the individual sciences despite their rich store of partial insights can never bring home the personal relationship to the world. It is the human being, who never will and never can renounce the collective view of the whole" (King, 2003:55). In this sense, De Chardin's philosophy could therefore contribute positively to contemporary dilemmas of environmental ethics. Rachel Carson said in *Silent Spring* (1963) that "those who contemplate the beauty of the earth find reserves of strength that will endure as long as life lasts." De Chardin's philosophy provides a means to see the beauty of the natural world anew through the eyes of a scientist, a theologian, a philosopher and a poet – which may represent the first steps in developing a more responsible view towards nature.

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