CHAPTER NINE: ENVIRONMENT AND DEVELOPMENT

1. Introduction

The purpose of this chapter is four-fold. First, in subsection 1.1, it is to re-justify the exclusion from the exposition of "seeing green" set out in Chapters Three to Eight, of the "diminishing importance of green ideas" perspective or worldview which Wissenburg (1993, p. 4) places at the right hand of his heuristic, and to specifically name that perspective, the "environment and development" perspective. The chapter's second purpose is to provide a brief introduction to what I understand as the main theoretical constituents of the environment and development perspective [sections 2-7 of this chapter], and to place the concept of "sustainable development" within this perspective. Then, (3), to use that discussion to develop indicators which suggest the presence in any text of an environment and development perspective, and the diminishing importance it ascribes to green ideas. (4) Finally, as *Namibia Vision 2030* subscribes to the concept of sustainable development (Government of the Republic of Namibia, Office of the President, 2004a, p. 11), and employs an environmental economics approach to nature, this chapter also serves as theoretical context for Chapter Eleven, in which the greenness of *Vision 2030*s worldview is assessed.

1.1 The "diminishing importance of green ideas" viewpoint

In Chapter One: 3.1, Figure 2, I introduced Wissenburg's (1993, p. 4) heuristic on varieties of green thought.

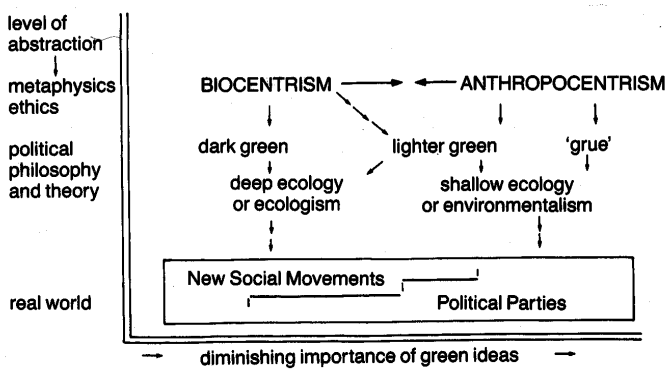

Figure 1.1 Varieties of green thought

Wissenburg's heuristic suggests, in capital letters, that a key difference between the dark green/lighter green worldview of the more left-hand side of his heuristic, and the "grue" or more right-hand side, is its different valuing of nature. In his heuristic, biocentrism means that nature is seen not only as having instrumental value for human beings, but also value-for-itself. This viewpoint was confirmed throughout the green sample under names such as an ethic of "biological egalitarianism", "complementarity", "partnership" and "care" for nature. By contrast, grue [what I call, grey-green] thought adopts an anthropocentric view of nature's value: nature has value only in as far as it contributes to human well-being. This is [almost[1]] a stand-alone argument for excluding any anthropocentric viewpoint from the green sample.

A second justification for excluding any anthropocentric outlook from the seeing green sample, is that the changed ethic towards nature implied by a non-anthropocentric morality, necessarily implies radical re-structuring of society – a reform of our systems of production, consumption and disposal, of our population policies, of our patterns of increasing mobility of people and resources, of our use of animals, of our ideas of what sufficient protection for nature's continued evolutionary processes comprises, for example. Yet, as pointed out in Wissenburg's heuristic, and also confirmed in this study (Chapter Eight, 6.2.3), "seeing green" places no trust in "environmentalism" – an outlook in which "environmental problems are mainly management problems, soluble within the context of the dominant political and economic system, and without any rigorous change in our values and culture" (Achterberg, 1993, p. 84) – to solve the environmental crisis. In essence, reform environmentalism

[1] "almost", because as explained in section 7.2 of this chapter, some versions of the concepts sustainability and sustainable development do include nature's value-for-itself

fails to see that the root cause of the environmental crisis is just the anthropocentrism [or androcentrism from the ecofeminist viewpoint] derived from a [malestream] view of human beings apart from, and transcendent (Hayward, 1995, pp. 54-55) over nature, which seeing green critiques.

As a third means of justifying the exclusion of any anthropocentric viewpoint from the seeing green perspective, one need only, I suggest, link anthropocentrism as theory of value to the environment and development perspective, and "sustainable development" to the environment and development perspective. This I do specifically in sections 2.4 and 2.6 of this chapter.

However, this is not to say that there is *nothing* "green" about the concept sustainable development. As I also seek to show throughout this chapter, the concept does contain traces of green, depending on whether or not it adopts weaker or stronger versions of environmental sustainability (section 3.4.1). Sustainable development also comes in more radical, or more conservative versions (section 7), the more radical models tending to be the greener. However in the mainstream versions of sustainable development usually adopted by the United Nations [UN] system, national governments and political parties, the green ideas are no longer dark and radical, but rather grey-green, and safely domesticated. Anthropocentrism remains their understanding of the human-nature relationship.

Environment-development concerns are myriad. One need only, for example, visit the website of the International Institute for Sustainable Development (http://www.iisd.ca) which provides multimedia informational resources for environment and sustainable development policy makers on a daily basis, to see the range of environment-development issues. Some of these are sustainable development, human development, trade and investment, biodiversity and wildlife, chemicals management, climate and atmosphere, forests, deserts and land, water and wetlands. This chapter does not attempt to address all these issues; instead the focus is on the implicit/explicit ontological, epistemological and ethical assumptions of some key concepts in each of the fields which inform environment-development discourse.

In section 2 of this chapter, I briefly outline the history of the idea of sustainable development, primarily as background to the "weaker" and "stronger" versions encountered later in this chapter of the concepts "anthropocentrism", "sustainability" and "sustainable development". In sections 3 to 6, I introduce the primary fields[2] which inform "sustainable development" - mainstream economic theory, and environmental economics [section 3], development theory [section 4], ecology as science [section 5], and a *far* less influential input from the field of environmental philosophy [section 6]. This discussion provides a context in which to highlight and problematize the implicit assumptions of some of the key concepts commonly occurring in each contributing field. Section 7 suggests that, depending on whether or not intrinsic value is ascribed to nature, and which versions of anthropocentrism and environmental sustainability are espoused, the concept "sustainable development" comes in "stronger" and "weaker" versions.

[2] According to sustainable livelihoods practitioner Koos Neefjes (2000, pp. 20-30), four disciplines concern themselves with human-environment relationships, each generating different theories on this relationship: (a) ecology, (b) political ecology, (c) environmental economics, and (d) what he calls the field of "gender, environment, and development" with theoretical roots in ecofeminism and political ecology. I believe I accommodate all these in my presentation here

2. Historical and ethical context of environment & development discourse

Section (2.1) highlights the continued "progress"- development link, (2.2) the failures of development in the United Nations 1960s – 1980s development decades, (2.3) the tensions between various environment and development perspectives, which (2.4) the 1987 Brundtlandt Report sought to reconcile, in (2.5) the new concept and ethic, of "sustainability".

2.1 The "progress"- development link

The former Enlightenment-inspired ideal of "progress" (Attfield, 1983; Hayward, 1994) has in our times, re-invented itself first as economic development, and then as sustainable development (Naess, 1990, p. 87). Green concerns on the homocentric, and hierarchical-instrumental assumptions embedded in the concept "progress" have already been noted (Chapter Eight: 6.3.3.1). Implicit in the new term "sustainable development" however, the notion of human progress through exploitation [now "management" and "sustainable use"] of the natural environment still persists. Neefjes (2000, p. 44), writing from within development theory, confirms this link: the meaning of sustainable development, he notes, is problematic "and there are differing views in North and South on its practical translations into processes of *human progress*" (2000, p. 44, my italics). It is the homocentrism/anthropocentrism (section 6) of mainstream [United Nations] interpretations of development/sustainable development which sets them definitively apart from "seeing green".

2.2 The UN Development decades (1960s – 1980s)

Development "is generally accepted to be a process that attempts to improve the living conditions of people", or as a "process to improve human welfare", such improvement relating to both physical and non-material wants (Bartelmus, 1986, p. 3, p. 7). In the First United Nations Development Decade (the 1960s), it was believed that the power behind development was economic growth (Elliott, 1994, p. 5), and that the development problems of the underdeveloped nations "would be solved quickly through the transfer of finance, technology and experience from the developed countries" (Elliott, 1994, p. 5). But the expected effects did not happen, and the price of economic growth's industrialism and consumerism was high. To the objectives for its Second Development Decade (the 1970s), the UN added the objective of social justice, which aimed to improve the distribution of the results of economic growth, and eliminate dependency. Phrases such as "The pollution of poverty", "Growth with equity" and "Redistribution with Growth" (Elliott, 1994, p. 6, p. 10), as well as the "basic needs[3]" approach to development date from this period (Bartelmus, 1986, pp. 11-12). Eight years later though, decolonized nations had still not established economic independence (Bartelmus, 1986, p. 12), nor was there evenly-spread material well-being (Elliott, 1994, p. 6). The UN's Third Development Decade (the 1980s) therefore envisaged the implementation of the New International Economic Order[4], but by 1986, no agreement could even be reached in initiating the global negotiations needed to achieve it (Bartelmus, 1986, p. x).

[3] The 1974 Cocoyoc seminar of experts was organized inter alia by the UN Environmental Programme (UNEP). Its Declaration [drafted by Barbara Ward] identified as basic needs, food, shelter, clothing, health, and education. The Cocoyoc Declaration's guiding philosophy was the articulation of a kind of development "capable of meeting the 'inner limits' of basic human needs for all the world's people and of doing so without violating the 'outer limits' of the planet's resources and environment" (Clarke & Timberlake, 1982, p. 58). Martinussen (1997, p. 295) characterizes it as bringing together "two major strands of the alternative [development] movement: those who had argued that highest priority should be given to satisfying the basic needs for food, water and shelter, and those who were primarily concerned about the destruction of the environment and exhaustion of non-renewable natural resources"

[4] Already adopted in principle by the United Nations General Assembly in 1974 (Bartelmus, 1986, p. 4)

By then, it was generally recognized that "development" was a problematic concept. The supra-national effects of acid rain, ozone depletion and global climate change which became noticeable in the late 1980s, in contrast to relatively local environmental problems such as pollution and resource depletion, elevated the environment to international problematic status as well. There was a growing realization of the interdependence of poverty, environmental degradation and development[5], and of the interdependence of developed and developing nations in dealing with the twin problems (Clarke & Timberlake, 1982, pp. 57-64; Elliott, 1994, p. 11).

2.3 Tension between perspectives on development and environment

But tension between environmental protection and human development had been evident from the start. Prior to the 1972 UN Stockholm Conference on the Human Environment, industrialized nations expressed their concerns for more limited economic growth, and better environmental protection, while developing nations pushed for economic justice, and "catching up" with the western industrialized nations. Although development and environment were "sold" as two sides of the same coin, there was definite tension between the two concerns: would environmental concerns be allowed to hamper human progress [development]; would environmental issues be considered more important than human rights? (Clarke & Timberlake, 1982).

The 1972 Stockholm Declaration[6] took a stand on these concerns: "We hold that of all things in the world, people are the most precious....[7]". On the one hand it noted that "Natural resources must be safeguarded" [Principle 2], but that "Environment policy must not hamper development" [Principle 11] (Clarke & Timberlake, 1982, p. 9). The tension continued in publications such as the World Conservation Strategy (IUCN, 1980), which sought to reconcile nature conservation with development. To this document, Bartelmus (1986, pp. 39-61) traces a new approach to development planning, embodied in the concept of "ecodevelopment", based on a knowledge of ecosystem dynamics, and using "ecostrategies" and "ecotechniques[8]". Other authors see in it, the beginnings of the new concept of "sustainable development" (Achterberg, 1993, p. 85; Engel & Engel, 1990, p. xiv; Neefjes, 2000, p. 27). Another less anthropocentric document was the *World Charter of Nature* (1982).

In 1991, the International Union for the Conservation of Nature (IUCN) published its *Caring for the Earth: A strategy for sustainable living* (Achterberg, 1996, p. 173). This latter report (IUCN/UNEP/WWF, 1991) articulates a vision for sustainable living [rather than simply "development"] based on nine ethical principles, one of which is "respect and care for the community of life (an ethical principle that defines *a duty of care for other people and for* ***all forms of life***, *now and in the future)*" (Hattingh, 2002, p. 10, my italics and bold emphasis). On Hattingh's (2002, p. 12) view, the report proposes "a revolutionary paradigm shift in our ethical perspective... in which

[5] For example, some environmental effects of poverty include deforestation, destruction of vegetative cover, desertification, and settlement in ecologically marginal areas. In turn these contribute to loss of soil fertility, declining land productivity, fuelwood shortages, vulnerability to extreme climactic conditions. All of which set off another cycle of poverty-environmental degradation (Elliott, 1994, Figure 2.3 The poverty and environment connection, p. 19)

[6] The Stockholm Conference produced the Stockholm Declaration on the Human Environment, comprising a Proclamation and List of (26) Principles, an Action Plan (109 recommendations), the establishment of the UN Environmental Programme [UNEP] (Clarke & Timberlake, 1982). It also produced the pre-work leading to the 1973 Convention on International Trade in Endangered Species of wild flora and fauna (CITES), which aims, inter alia, to monitor species loss on an international basis. Clarke and Timberlake (1982, pp. 13-14) note that the 1972 Stockholm Action Plan revolved around two major goals: increasing knowledge of the environment, and protecting and improving its quality. According to them, by 1982, the first had developed into the field of environmental assessment, and the second – "the concept of environmental management" had "broadened into the concept of sustainable development, which requires the inclusion of social, cultural and economic values... In other words, ... develop in a sustainable manner"

[7] "We hold that of all things in the world, people are the most precious." – Tang Ke, leader of the Chinese delegation. There is a certain irony here, given ongoing international concern about China's human rights record. Nevertheless, such anthropocentrism reflects the general tone of UN-led sustainable development

[8] Here Bartelmus (1986, p. 54 and Table 3.3 on p. 55) refers to the World Conservation Strategy (IUCN/UNEP/WWF 1980) advocacy of "appropriate spatial distribution of human activities to meet three basic objectives: (a) maintenance of essential ecological processes and life-support systems; (b) preservation of genetic diversity (c) sustainable utilization of species and ecosystems"

concerns about the well-being of humans are embedded within respect for the community of life, without negating the moral imperative of addressing the needs of the poor and the destitute."

2.4 The 1987 WCED (Brundtland) report

In 1984, the UN established the World Commission on Environment and Development [WCED] to investigate the possibilities of harmonizing environmental and developmental issues, and to recommend management strategies (Neefjes, 2000, p. 14). By the end of the 1980s, "eco"-development had been overtaken by "sustainable development".

Other than the oft-quoted definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43, cited in Bramwell, 1994, pp. 141-142), the WCED report (1987, p. 9, p. 46, in Achterberg, 1993, p. 85, my italics) also defined sustainable development as "a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet *human needs and aspirations*".

Representing a "strong anthropocentric position" (Hattingh, 2002, p. 11), the WCED report was adopted at the 1992 UN Conference on Environment and Development ["UNCED" or "Earth Summit"], in Rio de Janeiro, Brazil. Namibia as newly independent nation was also present.

2.5 The Earth Summit, 1992

Two key documents to emerge from the Earth Summit were the Rio Declaration which contains 27 principles for sustainable development (Neefjes, 2000, p. 196), and Agenda 21, intended as a locally-conceived and managed programme "for promoting sustainable development from 1992 through the twenty-first century" (Neefjes, 2000, p. 14). The Commission on Sustainable Development [CSD] was specifically formed to ensure and monitor progress on Agenda 21[9] (Neefjes, 2000, p. 14). During the Earth Summit, governments also made a commitment to draw up and adopt a National Sustainable Development Strategy[10] [NSDS] (Dalal-Clayton & Bass, 2002, p. 13). A more recent UN-initiated sustainable development document is the *Millennium Declaration* and its Millennium Development Goals [MDG], to which Namibia has also committed itself. The Rio Declaration and the Millennium Declaration are discussed in more detail in Chapter Eleven, section 5.2.6, at □Biodiversity loss (pp. 164-165 of *Vision 2030*).

2.6 The new ethic: "sustainability"

At the time of its international launching at the end of the 1980s, "sustainable development" was put forward not only as a new environment-development strategy, but "sustainability[11]" was seen as a *new morality* (Engel, 1990, p. 1; my emphasis). In the words of its "mother", Gro Harlem Brundtland, it

[9] According to Neefjes (2000, p. 15), at Earth Summit II (1997) it was agreed that "Agenda 21 had achieved only limited success", and the CSD itself as "not regarded as very effective or influential....". By 1998 Agenda 21 was perceived as not having "fully addressed the environmental problems of developing countries". Nevertheless, Article 22 of the Millennium Development Goals declaration reaffirms commitment to both the Rio Declaration and Agenda 21: "We reaffirm our support for the principles of sustainable development, including those set out in Agenda 21 [footnote 7], agreed upon at the United Nations Conference on Environment and Development." (United Nations General Assembly, A/Res/55/2, 18 September 2000)

[10] Compiling a National Sustainable Development Strategy [NSSD] is also supported in the Organisation for Economic Co-operation and Development [OECD] /United Nations Development Programme [UNDP] Sustainable Development Strategies Resource Book (Dalal-Clayton & Bass, 2002).

[11] The first 'official' use of the term "sustainable" is usually traced to the International Union for the Conservation of Nature/United Nations Environment Programme/World Wildlife Fund [IUCN/UNEP/WWF] 1980 publication 'World Conservation Strategy" (Bramwell, 1994, p. 141; van Dieren, 1995, p. 88). It seems to have only achieved widespread use around 1989. Martinez-Alier's (1987) otherwise excellent index does not contain the word, nor does Peter Bartelmus's (1986) *Environment and Development*

was to be "a new holistic ethic in which economic growth and environmental protection go hand-in-hand around the world" (Engel, 1990, p. 1). It has been hailed as the "moral attitude to the future" (Barry, 1996, p. 118); no time should be lost, suggested another author, in "elevating sustainable development to a global ethic" (Swaminathan, in Engel & Engel, 1990, p. xii) for dealing with the environmental crisis. The new morality appears in the Millennium Development Goals as "conservation and stewardship", discussed in more detail in section 7.3.

The "sustainability ethic" of the WCED (Brundtland) Report, is however, no matter how holistically presented, an anthropocentric ethic (Achterberg, 1993, p. 86; Elliot[12], 1994, Hattingh, 2002, p. 9), to the extent that it sees nature only as a resource for human well-being. As explained by Brundtland herself: "Our message is, above all, directed towards people, whose well-being is the ultimate goal of all environment and development policies" (WCED report, 1987, p. xiv, in Achterberg, 1993, p. 86). On Hattingh's view (2002, pp. 10-12, his italics), "the Earth Summit of 1992 and its attendant documents (the *Rio Declaration* and *Agenda 21*) represent a step backwards to a strong anthropocentric interpretation of sustainable development" (Hattingh, 2002, p. 11). The clear anthropocentrism of UN-led sustainable development places it in my view, within the field of environment and development, rather than within "seeing green". It provides the context for an environmental economics view of nature, and the human-nature relationship. I turn next to some key assumptions in the field of economic theory, of which environmental economics is a part.

3. Economic theory

Economic theory is a key constituent of environment and development thought, in that development economics, or development studies, emerged from the field of economics. Economic reasoning is often portrayed as neutral and rational. This section deals with some key concepts in mainstream economic theory which are value-laden, but rarely say so. Broadly, the section covers (3.1) a brief introduction to mainstream economic theories, (3.2) the early [nineteenth century] ecological economists' radical critique of mainstream economics, and their proto-green egalitarian concerns, (3.3) the re-emergence of some of its elements in environmental economics, (3.4) several key economic concepts in the context of natural resource accounting, and (3.5) a brief critique of environmental economics' androcentrism.

3.1 Mainstream economics

Economics is concerned with the production, distribution, exchange, and consumption of goods and services, and particularly with the most efficient possible human allocation of scarce resources, including both renewable and non-renewable natural resources, to different and often competing, human needs or ends. It involves both macroeconomics, which is more concerned with national patterns of income and expenditure, and micro-economics, more concerned with supply, demand, and pricing of goods and services in competitive markets (Martinez-Alier, 1987).

Until the emergence of the ecological economic critique in the nineteenth century, prominent schools of thought in economic theory[13] were those of Mercantilism and the Physiocrat School [16th to 18th

[12] For example, in Elliott's useful book on sustainable development in developing countries, references to morality are anthropocentric: "The call for sustainable development in the future stems from the fact that such inequalities [of access to the natural resource base] not only are morally wrong but also threaten the environmental basis for livelihoods and development aspirations across the globe" (Elliott, 1994, p. 19). Another example: [in the context that "…it is unrealistic to expect poor people to conserve resources for the future when they are struggling for survival" (p. 39)]

[13] Martinussen (1997, pp. 18-31) provides a brief overview of development theory's economic theory heritage. The classical economic school is associated with the names of Scottish philosopher and economist Adam Smith, Thomas Malthus, and David Ricardo, who put forward a labour theory of value: the amount of labour a worker used to produce an article, determined its price. Price was also explained on the assumption of scarcity – fears of limitation of supplies derived from the law of diminishing returns, and Malthusian fears of population exceeding available material resources. Smith, Malthus and Ricardo typify the laissez-faire economic approach, while John Stuart Mill [*Principles of political economy* (1848)] represents a bridge between laissez-faire and welfare economics. Marx was an articulate critic of capitalism's exploitation of the worker, who had nothing but his labour to bring to the market

centuries], the classical economic school, and marginal utility theory. In this section, I introduce briefly (3.1.1) Adam Smith's concept of enlightened self-interest, (3.1.2) the individual preference satisfaction of utility theory, and (3.1.3) the concept of (instrumental) economic rationality, all three at odds with "seeing green".

3.1.1 Rational self-interest, and its "further enlightenment"

Adam Smith (1723-1790)'s classical economic theory assumes rationalism as epistemology, individualism as social ontology, and within the latter, a view of the human being as acquisitive, greedy, self-centred, and competitive[14] (van Dieren, 1995, p. 162). In his Wealth of Nations, published 1776, Smith applied the philosophy of rational self-interest – a combination of these ideas – to the economy. According to his *laissez faire* theory, government interference in business and commerce must be reduced to a minimum, and businessmen left to pursue their own best interests in a market of free competition, where supply and demand would ensure the efficient production of those goods society wanted most. The discipline of such open competition between self-interested businessmen would not only ensure maximum profit to the individual, but as if "led by an invisible hand[15]", the self-interested businessman would be ensuring maximum profit for society too.

van Dieren (1995) argues that Smith's "invisible hand" metaphor was intended to signify that the free market, open to uncontrolled supply and demand forces, also obeyed a 'law of nature', just as science was discovering that nature did, and social philosopher August Comte thought he discerned in the development of society. This natural economic 'law' would regulate prices and wages (Velasquez, 1991, p. 514), and free trade would provide the answer to all society's scarcity[16] problems, provided that it was not interfered with. According to van Dieren, Smith intentionally used the 'invisible hand' metaphor to convey the sense of a continued metaphysical guidance of human economic destiny [i.e., unlimited growth]. He felt this to be necessary because Enlightenment thinking, which exalted "science, technology and mechanization" (van Dieren, 1995, p. 4), had replaced the former role of Divine Providence in guiding human affairs. The "invisible hand" of free market trade became the economy's guidance instead.

Finally, Smith's rational self-interest approach also accorded with the principle of *utility,* in which the good is held to be the greatest happiness [progress as individual pleasure, provided it did not directly harm another] for the greatest number of people (Velasquez, 1991, pp. 513-514). More recently, given

[14] Collins and Barkdull (1995) reject the view that Smith "was an ardent defender of a narrow conception of egoism" (p. 231), a common misrepresentation by those who criticize neoclassical economic theory. "Contrary to the view that he advocated unrestrained greed, Smith actually argued that the pursuit of self-interest in economic matters, appropriately conditioned by moral principles, would result in general welfare benefits, albeit unintentional" (p. 231). Wenz (1997, p. 215), writes that Smith had more balanced views than the "unrealistically egoist account" of Hobbes or Bentham, and that he was concerned that economic rationality should not be applied to all areas of life. Still, there seems to be consensus that greedy, competitive, possessive, and self-interested individualism is the view of the human being assumed in market societies (Davidson, 2000, p. 27, p. 28, p. 34)

[15] The well-known 'invisible hand' metaphor appears in a passage where Smith is arguing that the individual engaging in market place activity is more interested in domestic industry than foreign industry, and motivated by self-interest rather than by any public interest: "…By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it…" (Bullock, 1909, p. 379, cited in Velasquez, 1991, p. 514)

[16] According to Hans Achterhuis, Professor of Eco-philosophy, the discourse of scarcity, begun already in the 17th century writings of Hobbes and Locke, was more fully elaborated by Smith a century later. Smith believed that "scarcity" is the original condition of all humanity; human beings must wrestle with it first simply to survive and then later, to achieve comfort. It is nature's hostility which generates this scarcity, but if humanity could conquer nature through labour, then peace and abundance would be achieved (Achterhuis in van Dieren, 1995, p. 21). The suggestion of *limits* to the mastery of nature in order to deliver economic abundance via free trade in the marketplace, therefore encounters stiff resistance, as for example, the vociferous opposition to the "Limits to Growth" report presented to the Club of Rome in 1972 (van Dieren, 1995, p. 4). "Scarcity" and "limits" are thus critiqued in some ecological environmental literature as ideological elements in economic theory, for example, van Dieren (1995, pp. 21-28), and also in social ecology, for example, the "post-scarcity" society advocated by Murray Bookchin (Clark, 1993, p. 349)

the increasing ecological damage caused by industrialization, it has been argued by some (Hayward, 1995, p. 54ff), and rejected by others (Hayward, 1995, pp. 61-62), that a "further enlightenment" (p. 61) of rational self-interest which "entails recognizing how it is in the human interest to adopt principles of environmental concern" comprises an ethic for the environment sufficient to avert ecological disaster, without abandoning the enlightenment-humanist idea that the human being is *apart from*, not part of nature, and "the prime, and perhaps only, locus of intrinsic value in the world [anthropocentrism] (Hayward, 1995, p. 54, p. 62).

3.1.2 Utility theory

From the late 1870s, marginal utility theory emerged as an alternative explanation of price and of consumer behaviour. Marginal utility theory proposes that the value of a thing is its utility or subjective value, so its consequent subjective exchange value. On this view, the price of an article is not so much determined by the quantity of human labour it contains [the labour theory of value], but by how much the consumer would be *willing to pay* to obtain the utility or satisfaction contained in the last or "marginal unit" purchased, either for self, or for its consequent subjective exchange value in the market. Individual [psychological] consumer preference for one more unit of any given commodity rather than labour invested, sets the market price; market price is the decisive element in explaining how resources are eventually allocated (Martinez-Alier, 1987, p. 16, p. 6). The consumer is assumed to act *rationally*, i.e. to maximize their utility, their welfare, in spending their income (Martinez-Alier, 1987, p. 92; "Economics", "Jevons", and "William Stanley" in Microsoft Corporation Encarta; Sagoff, 1986, p. 131).

3.1.3 Economic rationality

The phrase "economic rationality" or "economically rational" appears frequently in texts on natural resources.

Rationality is a complex philosophical concept (Bartlett, 1986, p. 222, p.228). Not only are several forms of rationality[17] distinguished, but distinctions are drawn between procedural and substantive rationality as well (Bartlett, 1986, pp. 223-227). Substantive rationality refers to the choices (or decisions) and actions " '...appropriate to the achievement of given goals within the limits imposed by given conditions and constraints'" (1986, p. 224[18], p. 239), and is on Bartlett's (1986, pp. 223-224) view, the predominant understanding of rationality in economics[19](p. 223). *How* rational economic substantive rationality is, is dependent only on how successful the choices and actions are, in attaining the actor's goals (p. 224, 226), usually understood as maximizing utility, or satisfying personal preferences. It is thus an instrumental rationality (p. 226), based on the criterion or standard of efficiency (p. 227) in means (p. 228).

Other than efficiency as value, another key value of economic rationality is maximization of behaviour (Bartlett, 1986, pp. 224-225, and footnote 11 on p. 225), for example, of self-interest. This is Homo *economicus*[20]. Maximizing[21] is not an ecological value: "organisms in nature tend to *satisfice* rather

[17] For example, besides economic rationality, Bartlett also identifies technical, legal, social, and political rationality (Bartlett, 1986, p. 229); Drysek (1987, in Ferris, 1993, p. 147) identifies ecological, legal, social, economic and political rationality

[18] Bartlett is here citing from Simon, 1964, p. 573

[19] "Classical economics has always been based on the assumptions of substantive rationality and an optimizing goal – a theory of best solutions" (Bartlett, 1986, p. 224)

[20] An abstract concept meaning a human being concerned with maximising utility, defined as want-satisfaction. Any normative evaluation of a person's definition of "want" is usually avoided in mainstream economic theory. That is, personal preferences are normative, and want-satisfaction is judged in terms of the Pareto-efficiency criterion only: " ... an action is considered economically efficient if no one is harmed while at least one person benefits. Whether an individual benefits is left to the sole judgment of that individual. The source of value is found in subjective individual wants, not in the needs of other human beings or other species" (Botzler & Armstrong, 1998, p. 517). Nature is seen instrumentally only

[21] "Maximizing" is an economic value, which on ecological economist Daly's view, contains "no notion of optimal scale" (Daly, 1985, in Gowdy & Olsen, 1994, p. 169). Evolutionary biology suggests that organisms tend to "satisfice" rather than "maximize". They "tend to find

than *maximize*...", notes Davidson (2000, p. 34, her italics), referring to Simon's (1983, p. 85) understanding of satisficing behaviour as behaviour "which does not strive for 'optimal' solutions, but rather tolerable or 'good enough' solutions" (Davidson, 2000, p. 34, footnote 29). The normative implication of ecology here is preference for the relational and symbiotic, rather than the competitive behaviour which economic rationality assumes.

Economic rationality, which Bartlett (1986, pp. 236-237) describes as "anthropocentric, utilitarian, and materialistic", has become "pre-eminent" in the modern world, to the point where it is practically equated with rationality (Bartlett, 1986, p. 236).

3.2 Early ecological economics: its radicalism

Recall Bramwell's thesis (1989, p. xi) that seeing green was born inter alia, of a fusion between holistic biology [which later developed into ecology], and the nineteenth century ecological economic critique. Several authors on green thought (Bramwell, 1989; Hayward, 1995; Martinez-Alier, 1987) note the early ecological economists' radical demand that economy be subsumed under ecology, and their contribution to green/ecological thought.

The early ecological economists were motivated not so much "by the emotional identification of nature and beauty found in the biologists discussed earlier, nor by the Romantic or sensuous response to landscape found in the United States and England" (Bramwell, 1989, p. 65). But what the early holistic biologists and early ecological economists did share in common, is acceptance of the concept of entropy[22] in the 2nd law of thermodynamics. Like the holistic biologists, some early ecological economists did not hesitate to draw metaphysical and normative conclusions from the principles of thermodynamics (Martinez-Alier, 1987, p. 119, p. 135, p. 149).

The early ecological economists had "a science-based fear for the future of human survival" (Bramwell, 1989, p. 65), fear of land shortage and consequent failure to produce enough food to feed everyone (p. 66), and "a sense of injustice over what they saw as inequitable distribution of energy resources" (p. 65). Many of their radical proto-green concerns (Martinez-Alier, 1987; Bramwell, 1989) have been taken up in the seeing green worldview. Some are:

> (1) agricultural energetics, which in the green perspective, is linked to such diverse themes as support for ruralism ["back to the land"], land reform, living in communes, self-sufficiency, moral criticisms of trade, support for anarchism and peasant ideology, and, instead of a labour or utility theory of economic value, an energy theory of value[23]. This latter aspect is beginning to appear in mainstream environment and development environmental reporting as carbon emission levels;

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niches which protect them from competition, and ... many organisms establish symbiotic relationships to further their chances of survival" (Davidson, 2000, p. 34). Competition is avoided in favour of the relational community

[22] In science, heat is referred to by two functions: energy and entropy. Although the energy in the universe is a constant, there is a tendency towards the dissipation of energy, that is, there is a tendency for entropy to reach a maximum. Entropy refers to the quantity of energy which can no longer be transformed into other forms of energy (Martinez-Alier, 1987, p. 47). Practically speaking, "any use of heat to produce work is accompanied by an irrecoverable loss of energy, to be seen as an increase in entropy" (Martinez-Alier, 1987, p. 79). So, entropy is *irreversible* energy loss. Dissipated heat cannot do work again (Martinez-Alier, 1987, p. 79, p. 112). Though recycling can slow down the growth of entropy, it cannot reverse it (Martinez-Alier, 1987, p. 79)

[23] Energetics is the study of the flow of energy and the cycles of materials. Between 1880-1883, Podolinsky sought to reconcile his energy theory of value with the Marxist labour theory of value (Martinez-Alier, 1987, p. 5, p. 51) Although Podolinsky's agricultural energetics [and Ostwald's "energetische Imperativ"] provided an opportunity for Marx and Lenin to amend their labour theory of value, the opportunity was missed (Martinez-Alier, 1987), contributing to what was later to become a troublesome gap between Marxism and ecologism. There was tension for example, between left-Greens and ecological greens in the early Die Grünen; authors such as Lee (1980, pp. 3-16; 1982, pp. 339-343), Routley (1981, pp. 237-244), and Tolman (1981, pp. 63-74), published papers in *Environmental Ethics* in the 1980s, either portraying, or rejecting, Marx as an "environmental hero". The Marxism-ecologism divide is not insignificant in Namibian context, given the ruling party SWAPO's pre-Independence Marxist-Leninist socialist ideology

(2) the concept "Raubwirtschaft[24]" which is evident in seeing green's critique of the North-South divide, and its demand for ethical trade and aid;
(3) population growth vis-a-vis the earth's carrying capacity;
(4) economic growth in relation to poverty;
(5) the proper role of science, technology, and planning in society.

Other concerns, such as Otto Neurath's "Naturalrechnung[25]", which I understand as the genesis of green ecological economics' emergence in the 1970s, appear in more domesticated form in environment-development discourse as natural resource economics. What primarily distinguishes early ecological economics from mainstream natural resource economics, I think, is its explicit normativity - its radical egalitarianism[26] and accompanying redistributionism, its ecologically-based critique of the rapidly industrializing European society of the time.

3.3 The emergence of environmental economics

Though ecological economics seemed to appear suddenly on the political scene in the 1970s (Martinez-Alier, 1987, p. viii), with books such as Boulding's (1970) *Beyond economics: essays on society, religion and ethics*, and the 1972 Massachusetts Institute of Technology's report (Meadows et al.'s *The limits to Growth*[27],) for the Club of Rome, its roots can be traced to the nineteenth century egalitarian ecological economics heritage (Martinez-Alier, 1987), and Martinez-Alier (1991) himself. Bramwell credits the 1970s emergence of ecological economics as a primary reason for the metamorphosis of discredited right-wing conservative environmentalism, which had partly emerged from nineteenth century holistic biology, into a broad-based, Left-inclined, radical ecologism[28] or green perspective (Bramwell, 1989, p. 4; 1994, p. 8, p. 15).

Today there are two broad streams of thought on accounting for the natural environment in economics – a more mainstream, reformist, environmental economics, represented best perhaps by Pearce, Markandya, and Barbier's (1989) *Blueprint for a green economy* (Hayward, 1995, p. 104), and a more "ecological" school of thought, represented inter alia by Georgescu-Roegen's (1971) *The entropy law and the economic process* (Hayward, 1995, "Ecology into economics won't go", pp. 104-113). There are differences of opinion between the two streams, some of which should become clearer in section 3.4 next, on natural resource accounting.

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[24] A concept developed by geographer Jean Brunhes from an earlier idea by German geographer Ernst Friedrich (1867- ?), who observed that the grave devastation which accompanied civilization was not seen amongst "primitive folk" (Martinez-Alier, 1987, p. xvii). Capitalism's development was to be understood in terms of increased Raubwirtschaft "in order to support the living standards of the rich" (p. xix). Martinez-Alier (1987) makes the interesting allegation that in the 1980s, there was "a political attempt by the wealthy to move the ecological agenda away from the issue of Raubwirtschaft. Thus, in the wake of the Brundtland Report [1987], the study of poverty has become more fashionable (and richly funded) than the study of wealth as the main threat to the environment" (p. xi). He *almost* [but does not] suggests that the wealthy nations' focus on poverty as the major threat to sustainability is deliberately designed to distract attention from wealth as a threat. The north, with its power and wealth, has, right from the United Nations conference on Environment and Development in Rio in 1992, set the world's environmental agenda

[25] Martinez-Alier (1987) draws on Neurath for a critique of classical economy's methodological individualism, a topic which links with themes such as discounting, the mechanism which informs inter-generational allocation of exhaustible resources, and externalities. All these issues are under discussion in modern natural resource accounting literature, and literature on integrated environmental and economic accounting in national accounting (van Dieren, 1995; United Nations, 2000). They are also discussed in this chapter

[26] Martinez-Alier (1987) calls the ideological version of egalitarian ecological economics "ecological neo-narodism… an ideology for the dispossessed of the earth" (1987, p. 234). Neo-narodism is "pro-peasant" and pro-"energy-efficient traditional models of [agricultural] production" (Martinez-Alier, 1987, p. 235, p. 236), and opposed to an economic growth which helps preserve inequality (p. 236). It could be combined "without excessive difficulty" with some varieties of anarchism and of Marxism (p. 247). Martinussen (1997) also mentions narodism in his discussion of development theory

[27] Martinez-Alier (1987) in his review of early ecological economics literature does not mention "Limits". Nevertheless it caused a considerable stir, with its insistence that human beings were recklessly consuming non-renewable natural resources (van Dieren, 1995, pp. 1-5; Schumacher, 1973 [1986], pp. 99-101). Schumacher was critical though, of the report's failure to concentrate attention "on the one material factor the availability of which is the precondition of all others and *which cannot be* recycled – energy" (1974, p. 101)

[28] "I argue that today's Greens, in Britain, Europe and North America, have emerged from a ... shift from mechanistic to vitalistic thought in the late nineteenth century. It was the fusion of resource-scarcity economics with holistic biology that gave force and coherence to ecological ideas [that is, the ecological perspective]" (Bramwell, 1989, p. xi)

3.4 Natural resource accounting (NRA)

Sustainable development has been argued to represent a compromise in the early 1970s economic growth vs. the environment debate (Hayward, 1995, p. 96), to be achieved partly through the inclusion of natural resource accounting in the economy. The 1992 Earth Summit recommended that governments implement a System of integrated Environmental and Economic Accounting [SEEA[29]] to account for the stocks and flows of their environmental resources in "satellite accounts" parallel to their country's System of National Accounting [SNA] (UN 2000, p. 4, par. 4, p. 162, par. 431). Briefly, environmental accounting seeks to factor the economic costs of natural asset depletion and degradation into a country's economic policies (UN 2000, p. 149, par. 395). Its use indicates a country's commitment to conserving the natural assets of its economy (UN 2000, p. 148, par. 393).

Integrated environmental and economic accounting adopts an anthropocentric utilitarian view of nature: "The environment is ... an important contributor to both production and human welfare, through three broad sets of environmental functions: (a) Resource functions: the provision of resources, including space for human activity; (b) Waste absorption functions: the neutralization, dispersion or recycling of wastes from human activity; (c) Environmental service functions: the maintenance of a habitable biosphere, including the stratospheric ozone layer, climate stability and genetic diversity; and the provision of services for human amenity, recreation and aesthetic appreciation." (UN 2000, p. 5, par. 15).

In this section, the point is not to convey exactly how Natural Resource Accounting "works", but to highlight the usually implicit assumptions and ethical implications of some of its key concepts: (3.4.1) "sustainability" and "environmental sustainability", (3.4.2) Gross Domestic Product, (3.4.3) the valuing of natural resources in the marketplace. Section (3.4.4) presents a brief green critique of environmental economics.

3.4.1 "Sustainability", and "environmental sustainability"

In this section, I deal with environmental sustainability: its different versions (3.4.1.1 – 3.4.1.5), and the difficulty of attaining even weak sustainability (3.4.1.6).

"Perhaps" write Gowdy and Olsen (1994, p. 170, my italics) "the most important contribution of *ecological* economics is the notion of environmental sustainability as a binding criterion". Sustainability is an economic term, meaning the maintenance of "capital", in the sense that the Middle Ages merchant traders meant "capital", that is, human-made capital (van Dieren, 1995, p. 100). But the concept "sustainability of capital" is now broadly applied. One finds references to social, economic, institutional/organisational, as well as environmental sustainability (Neefjes, 2000, p. 5), each of which requires something different to be sustained. So economists want utility to be sustained, social scientists "want institutions to be reproduced and sustained", and social capital [i.e. general social cohesion, social networks, civic participation, networks of trust (Neefjes, 2000, p. 49)] improved; health professionals want human health improved, and "ecologists want species and ecosystems to be conserved" (Neefjes, 2000, p. 48).

My focus is on the notion of environmental sustainability. Its name was changed in the 1987 WCED (Brundtland) Report to "sustainable development" (Martinussen, 1995, p. 150). This is hardly an insignificant change. It focuses the attention away from the natural environment, and towards human

[29] In 1993, the UN Statistics Division set out an SEEA framework (Commission of the European Communities, IMF, OECD, UN, World Bank, 1993; United Nations, 1993). Thereafter, parts of the SEEA were tested in different countries (UN 2000, Preface, p. 1), and the results of the trials brought together in the interim UN (2000) "Integrated environmental and economic accounting. An operational manual". (UN 2000 p. 4, par. 13). The Government of the Republic of Namibia Ministry of Environment and Tourism's NRA programme uses the handbook as guideline. One of the persons contributing to the UN 2000 operational manual was Glen-Marie Lange (UN 2000 p. iv), who authored/co-authored a series of Namibian natural resource accounting papers published by the Ministry of Environment and Tourism

development. It is for me, yet another marker of the taming of "seeing green"s wide, long-range ecological sustainability (Chapter 8: 5, and 5.5) to the "grey-green" of sustainable development.

van Dieren (1995, Figure 7.1, p. 101) provides a nutshell description of environmental sustainability ["ES" as opposed to "social sustainability" and "economic sustainability"] as

> Although environmental sustainability is needed by humans and originated because of social concerns, ES itself seeks to improve human welfare by protecting the sources of raw materials used for human needs and ensuring that the sinks for human wastes are not exceeded, in order to prevent harm to humans. Humanity must learn to live within the limitations of the physical environment, both as provider of inputs ("sources") and as a "sink" for wastes (Serageldin, 1993). This translates into holding waste emissions within the assimilative capacity of the environment without impairing it and by keeping harvest rates of renewables within regeneration rates. Quasi-ES can be approached for non-renewables by holding depletion rates equal to the rate at which renewable substitutes can be created (El Serafy, 1991).

With a more practised eye, one can recognize this as an anthropocentric, and "weaker" environmental sustainability approach. Various theories of environmental sustainability have been proposed, ranging from "stronger" to "weaker" versions. Some authors consider the debate between supporters of either end of the spectrum as similar to debates between the "stronger" and "weaker" forms of sustainable development (Attfield, 2003, p. 132), discussed in section 7 of this chapter.

3.4.1.1 Kinds of environmental sustainability

Various typologies of environmental sustainability have been constructed. Pearce et al. (1989, in Neefjes, 2000, p. 28) offer two kinds of environmental sustainability – "strong" and "weak". Dobson (1998 in Neefjes, 2000, p. 49) discusses three types – "natural value", "irreversible nature" and "critical natural capital"; and van Dieren (1995, pp. 103-104), four – "absurdly strong", "strong", "sensible", and "weak". Achterberg (1993, pp. 84-85) identifies sustainability as occupying a range from "ecologist"/ecocentric to "environmental"/anthropocentric.

The critical variables differentiating these differing versions are (a) *what* is to be sustained? Within this question, *to what extent* is the substitution of "natural capital" by human-made capital [such as technology, machines, infrastructure], and human-social capital [individual skills, capacities; social cohesion, institutional and support networks] considered acceptable? (b) *for whom* is the natural environment to be sustained?, and (c) on the question of inter-generational equity, *for how long*? I shall try to assimilate all these models to van Dieren's integrated environmental and economic accounting approach, highlighting the position of each model on the critical questions of What? For whom?, and How long?

3.4.1.2 "Absurdly strong sustainability"

This type - seemingly condemned from the start by its name! - appears in both van Dieren's and Dobson's typology (as the 'natural value' type), and their descriptions of it are much the same. Its objective is the sustaining of natural value. Non-renewable resources can not be used up at all; and "for renewables, only net annual growth rates could be harvested...." (van Dieren, 1995, p. 104). No substitutability between human-made and natural capital is allowed in the "absurd" version, nor the compensation for the loss of some natural aspect by another (Neefjes, 2000, on Dobson, p. 49). Nature is preserved not only for human beings, but also, because of its intrinsic value, for its own sake. Many deep ecology supporters are found in this group (Neefjes, 2000, on Dobson, p. 49), indicating that it represents a "seeing green" position. van Dieren does not answer the "how long" question, nor, on Neefjes' description (2000, p. 49) does Dobson.

3.4.1.3 "Strong sustainability"

Somewhere between "absurdly strong", and the "strong" sustainability discussed here, is Dobson's 'irreversible nature' type of environmental sustainability (Neefjes, 2000, p. 49), which does not appear in any other typology I have seen. "Degradation of some parts of nature cannot be reversed, and adherents of this type hold that those parts cannot be substituted, even though they may not necessarily be critical for human beings. Compensation for this irreversible loss is impossible, and protection is an important strategy". Human welfare is central, but parts of nature have an "intrinsic value that goes beyond human utility" (Neefjes, 2000, p. 49, describing Dobson's (1998) position. The *For how long?* question is not addressed in Neefjes (2000, p. 49) description of Dobson's "irreversible nature" type of sustainability. Even so, I think it clear that this type of sustainability would also fit into a seeing green perspective.

Strong sustainability appears in both van Dieren and Pearce et al.'s typology. *What* is to be sustained? The van Dieren "strong" version requires maintaining the different kinds of capital [thus natural assets too] intact, and separately. *Within* each form of capital, substitution is permissible. Thus, for natural capital, "receipts from depleting oil should be invested in ensuring that energy will be available to future generations at least as plentifully as enjoyed by the beneficiaries of today's oil consumption" (van Dieren, 1995, p. 104). Or, to give a "human capital" example, if there are investment reductions in one kind of education, these must be offset by investment in other kinds of education, *not* by improved infrastructure for example (van Dieren, 1995, p. 104).

Remaining with the What? question, Pearce et al.'s version requires that "the next generation [should] inherit... an equal or better stock of natural assets" (Neefjes, 2000, p. 28). But on my understanding of Neefjes (2000, pp. 29-30) description, even Pearce et al. (1989) followed a compromise position between strong and weak sustainability in sustainable development: they identify *some* environmental resources as "critical capital", which must be conserved in order to provide "a flow of services to the economic system" (Neefjes, 2000, p. 29). And in this compromise approach, Neefjes notes (p. 30), "they promote substitutability even for exhaustible resources", and reject an approach in which "environmental assets somehow lie outside the realm of money values" (Pearce et al., 1989, page not given in Neefjes but possibly near p.28, cited in Neefjes, 2000, p. 30).

For whom? van Dieren's "strong" description gives no indication of whether natural capital is to be sustained for its intrinsic value, or for its usefulness to humans value. Pearce et al., on Neefjes description (2000, p. 28), subscribe to a "sustainable utility" approach, meaning that the "well-being of a defined population should be at least constant over time and preferably increasing" (Pearce et al., 1989, -p. 32). This would mean that whatever is being preserved, is being preserved for people.

For how long? van Dieren (1995) does not address this question. Pearce et al. [again, on Neefjes description of it, 2000, p. 28] talk of "the next generation".

On Neefjes view, the "stronger" kinds of environmental sustainability are untenable. Leaving aside the unlikelihood that any government would for example forbid extractive mining in its economic policy, there is also the problem of poor people, who "have little capacity to forgo consumption... they cannot easily ... pass on similar natural wealth to the next generation and thus hand over an equal standard of consumption and survival potential" (Neefjes, 2000, p. 29). Strong sustainability is "impossible to achieve, locally or globally, without forgoing resource consumption by the better-off, i.e. the high-consumers..." (Neefjes, 2000, p. 56).

3.4.1.4 "Sensible sustainability"

"Sensible" sustainability, which seems to be another case of persuasive naming, appears only in van Dieren's (1995, p. 103) typology:

> Sensible sustainability would require that, in addition to maintaining the total level of capital intact, some concern should be given to the composition of that capital between natural, human-made, human, and social. Thus, oil may be depleted as long as the receipts are invested in other capital (e.g. human capital development) elsewhere; but, in addition, efforts should be made to define critical levels of each type of capital, beyond which concerns about substitutability could arise and these should be monitored to ensure that patterns of development do not promote a total decimation of one kind of capital no matter what is being accumulated in the other forms of capital. This assumes that while human-made and natural capital are substitutable over a sometimes significant but limited margin, they are complementary beyond that limited margin. The full functioning of the system requires at least a mix of the different kinds of capital. Since we do not know exactly where the boundaries of these critical limits for each type of capital lie, it would behoove the sensible person to err on the side of caution in depleting resources (especially natural capital) at too fast a rate (van Dieren, 1995, p. 103).

What can we extract from this? *What* is to be maintained? - the total capital, with some regard for its distribution between natural and non-natural. Natural capital may also be substituted by non-natural capital. Neither the *For whom?* nor the *For how long?* questions are addressed by van Dieren. The key point in this approach is, I think, that "...efforts should be made to define critical levels of each type of capital, beyond which concerns about substitutability could arise and these should be monitored ...".

3.4.1.5 "Weak sustainability"

Weak sustainability is listed in both Pearce et al.'s and van Dieren's typology, and seems partially equivalent to Dobson's "critical natural capital".

What is to be preserved? Pearce et al.'s version requires only that the next generation [the answer to the *For how long?* question] should inherit a total stock of wealth, whether in natural or human-made assets, that is equal to or better than the current one (Neefjes, 2000, p. 28). This is much the same as what van Dieren says (1995, p. 103); there is no regard for the exact mix of capitals, because the one is considered substitutable for the other. Recall here some oppositional seeing green views: ecofeminist Plumwood's view that such ideas of interchangeability and replaceability in nature are assumptions left over from the mechanistic worldview (Chapter Six: 5.1.1(c); and deep ecologist Naess's critique of what he called the supermarket view of nature (Chapter Four: 4.1).

Dobson (on Neefjes, 2000, p. 49 description) gives a more specific answer to the *What*? question. In his "critical natural capital" version, those natural resources are retained "that are 'critical to the production and reproduction of human life'. Critical capital can either be renewable or non-renewable; if it is non-renewable, it can still be substituted, such as fossil fuels that can be substituted with energy sources from already existing technology. Critical capital can also be non-substitutable and non-renewable, in which case protection remains the only option for sustaining it.".

The *For whom?* answer is for human beings. Neefjes (2000, p. 49) specifically notes that Dobson's "critical natural capital" description of environmental sustainability is "... entirely anthropocentric, that is, primarily concerned with human welfare and therefore fully consistent with most notions of sustainable development". The *For how long?* question is addressed only in the Pearce et al. version, the answer being "the next generation". (Neefjes, 2000, p. 28).

Now, according to my reading of Achterberg's discussion of sustainability (1993, pp. 84-86), this is the version of environmental sustainability which sustainable development espouses:

> The guideline or criterion for sustainable development that the Commission [i.e. the World Commission on Environment and Development] applies is the next generation's prospect of disposing of a stock resource that is at least as large as the one inherited by the present generation. The capital to be left behind not only comprises goods and the like, produced by man, but also natural resources or the total of these: the 'natural capital' (WCED 1987: 52ff, 57ff; and Annexe 1 under 2). Apparently, the WCED regards capital produced by man and natural capital as interchangeable, and to be valued in the same terms – namely, in terms of their usefulness to the quality of human life. This is a disputable perspective, quite apart from the extremely anthropocentric attitude which is expressed by such a view. ...

To cast that assessment of the sustainable development position in the terms of this discussion: The answers to the questions *What is to be preserved, For whom?* and *For how long?* are much as suggested by other authors cited in this section – a weak environmental sustainability position.

Achterberg (1993, pp. 84-86) calls this kind of sustainability, the "environmental" kind as opposed to the "ecological" kind of sustainability, which recognizes nature's value-for-itself:

> In the literature ... two visions of the nature and solution of environmental problems are traditionally distinguished. First, there is a 'superficial' or reformist vision ('environmentalism'). According to this vision, environmental problems are mainly management problems, soluble within the context of the dominant political and economic system, and without any rigorous change in our values and culture.
>
> Second, there is a profounder vision, aiming at more structural change ('ecologism': for example, 'deep ecology') according to which a radical change in our attitude towards nature, and therefore also in our political and social system, is necessary. ...
>
> The value perspective of environmentalism is anthropocentric, that of ecologism is fully ecocentric. Ecocentric in this sense does not mean subordination of human values to (those of) nature, but complete recognition of nature's intrinsic value. ..." (Achterberg, 1993, pp. 84 - 85).

On this view, then, one could then reasonably associate a weak environmental sustainability position with the right hand side of Wissenburg's heuristic which uses the same two descriptors – "ecologism" and "environmentalism" - to broadly distinguish green perspectives from "grue" [grey-green] perspectives respectively. As mainstream versions of sustainable development subscribe to weak environmental sustainability, this suggests clearly to me that sustainable development represents a grey-green, not green perspective, thus supporting its exclusion from the green sample. Weak environmental sustainability is also a far cry from seeing green's long-range, wide ecological sustainability (Chapter Eight: 5.5).

3.4.1.6 The difficulty of achieving even weak sustainability

Even though the weak environmental sustainability position allows substitution of natural capital by non-natural capital, Holland has "shown that the prospects of measuring natural capital are illusory" (Holland, 1999, pp. 46-68, cited in Attfield, 2003, p. 133). It would also be "... particularly important to discover what limits there may be to the substitution of technology for natural capital" (Attfield, 2003, p. 133). Neefjes (2000, p. 29) suggests that some kind of formal in-country accounting other than Gross Domestic Product [GDP] would surely be needed to keep track of any transformation of "natural" into "human" value. But such an exercise, he argues, would involve the "almost surreal endeavour" (Neefjes, 2000, p. 29) of seeking to quantify and compare in money terms, the value [price], for example, of a predatory animal species against the value of an animal husbandry industry, the value of a traditional self-sufficient local livelihood against the value of power for the national grid. Further complications would be, how to assess economically, any spiritual value inhering in nature? Or the market price of as yet unknown services which the natural environment might provide? (Neefjes, 2000, p. 29). On his view, it is an almost impossible task to ensure even weak sustainability.

3.4.1.6.1 Requisites for achieving at least weak sustainability

Even Norton's *weak* anthropocentrism ethic, that is, the most enlightened of all forms of anthropocentrism [discussed in section 6.3 below] requires, to maintain the resource base across generations, that there should be (a) for renewable resources, models which indicate what the maximum sustainable yield of a resource is, so that present generations do not harvest beyond this limit, (b) for non-renewable resources, "depletion schedules" in place, and steps identified and taken to ensure in the process of depletion, the provision of suitable substitutes (Norton, 1986, p. 200, footnote 22). So achieving even weak inter-generational environmental sustainability seems dependent, from both an environmental ethical, and environmental economic point of view, on at least some form of integrated economic and environmental accounting by the government of the day.

3.4.2 Gross Domestic Product [GDP] and its "greening"

A country's system of national accounts includes *stocks* of assets used in the production of goods and services, and *flows* of goods and services resulting from production (United Nations, 2000, p. 2, par. 3). The level of a country's Gross Domestic Product, its breakdown by economic sector, and its rate of growth "are still regarded as the most important indicators of national economic performance and structural change" (United Nations, 2000, p. 15, paragraph 47 of SEEA manual). GDP is often used to guide international development aid and investment opportunity decisions (United Nations, 2000 p. 148, par. 392).

While it is an indicator of production and consumption, GDP has several deficiencies[30], one of which is its failure to measure "the standing or 'asset' value of natural resource or other economic 'stocks'" (Goodland & Ledec, 1998, p. 556). Mineral resources, or forests, for example, only enter into GDP once they have been converted into "a measurable economic flow" (Goodland & Ledec, 1998, p. 556). It also fails to measure such "flows" as natural resource depletion and degradation. Though it is usually argued that depreciation of produced assets "is of a limited ... magnitude" (United Nations, 2000, p. 15, par. 48), which does not affect meaningful in-country interpretation, or cross-country income comparison, "Environmental deterioration, which may be viewed as a charge against gross income, ... may vary considerably from country to country and from year to year and cannot be presumed to be of a standard size for either temporal or geographical comparisons" (p. 15, par. 48). A national accounting system that does not account "for the private and social costs of the use of natural resources and the degradation of the environment, ... may send wrong signals of progress to decision makers who may then set [their] society on a non-sustainable development path. " (United Nations, 2000 p. 2, par. 2).

GDP cannot be an indicator of either environmental sustainability or human welfare/social progress until it shows the environmental impacts of economic activity (United Nations, 2000, p. 5, par. 14-15; p. 15, par 47, p. 159, note 1), and has been "pruned" to account for the costs of natural capital consumption (p. 15, par. 48), including depletion and degradation through pollution for example. Such a "pruned" GDP is called in the UN (2000) operational manual for integrated environmental and economic accounting "EDP" [environmentally adjusted net domestic product]. Producing such an EDP is dependent though, on the possibility of accounting for natural resources in the market, discussed next.

[30] As a complete measure of the wealth or welfare of a country, GNP [obtained from GDP by adding in net income from abroad (van Dieren, 1995, p. 67)] is "flawed" because "it does not measure income distribution, social wellbeing, or the value of nonutilized but available resources. The Gross National Product includes economic activity which is devoted to compensating for environmental damage, and it ignores natural resource depletion as well as production for subsistence, even though self-sufficient production may often be preferable to market-oriented production" (Botzler & Armstrong, 1998, p. 553). It makes no distinction between social or environmental goods and bads either: "If everyone who owns a car suddenly has an accident with it, GNP will go up; if everyone who owns a house installs a solar heater, GNP will ultimately go down!" (Goodland & Ledec, 1998, p. 556)

3.4.3 Natural resources and the market

In free market environmentalism[31], the key to effective natural resource management is to package as much of nature as possible as "goods" and "services", over which there are property rights, so that these can be priced, and exchanged in the market (Anderson & Leal, 1998, pp. 537-538). The assumption is then that market processes will determine optimum amounts of resource use (section 3.4.3.1) in social welfare, understood as preference satisfaction, or utility maximisation. There are however problems in the concept "preferences" (section 3.4.3.2). Market discipline over natural resource use breaks down (Anderson & Leal, 1998, p. 538) when "externalities[32] allow costs to be imposed on others without their consent" (p. 538). Section 3.4.3.3 addresses the problem of ecological externalities.

There is also the problem of future economic agents – how should their preferences be taken into account in market processes (section 3.4.3.4)? The practice of discounting in estimating future costs and benefits, while appearing rational and neutral, actually favours present rather than future economic agents ["future generations"] (section 3.4.3.5).

Sometimes though, it is simply not possible to own every possible natural resource, and allow the market to set its price. Where such pricing is not possible, economists resort to "shadow" pricing in cost-benefit analyses (Sagoff, 1986, p. 130), obtained through methodologies such as "willingness to pay" (section 3.4.3.6).

3.4.3.1 The relationship between market efficiency and ownership rights

> "The key ... to effective markets in general and free market environmentalism in particular is the establishment of well-specified and transferable property rights" (Anderson & Leal, 1998, p. 537)

Economic efficiency in free market economy is usually described in terms of "Pareto optimality[33]" (Goodland & Ledec[34], 1998, p. 554; Gowdy & Olsen, 1994, pp. 164-165). Sagoff (1986, p. 131) refers to efficient markets as those "in which all transactions are voluntary and costs are not 'externalized' to third parties". Elsewhere he describes an efficient market as "one in which all resources are fully owned and traded by informed individuals without transaction costs or bargaining problems". It is assumed that an efficient market, thus defined, will allocate natural resources "in an optimal way" (Sagoff, 1986, p. 130; also Anderson & Leal, 1998, pp. 537-538). Market prices will force both producers and consumers to weigh up the costs and benefits of any economic transaction. Price will "discipline consumers to allocate their scarce budgets among competing demands, and ... discipline producers to conserve on scarcer, higher-priced resources by finding substitutes that are less scarce." (Anderson & Leal, 1998, p. 538). And optimal or efficient allocation is assumed to be one which "maximizes the satisfaction of preferences over the long run. ... [This is assumed to be good because] the satisfaction of preferences ... increases 'welfare' or 'utility'" (Sagoff, 1986, p. 131). Allocatory efficiency is further assumed to promote macro-economic prosperity, though Sagoff doubts this (Sagoff, 1986, p. 131).

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[31] This section refers inter alia to the work of Sagoff (1986, 1998), and Anderson and Leal (1998), who disagree on whether or not free market environmentalism adequately protects natural resources

[32] Martinussen explains externalities as "costs (and benefits) not borne by agents engaged in economic activity" (Martinussen, 1997, p. 155)

[33] "Assume that two consumers are endowed with some initial amounts of goods X and Y. Given the neoclassical assumptions of perfect information, and no impediments to free exchange, it can be shown that these (utility maximizing) individuals will trade until they reach the point where no further trading can make one better off without making the other worse off. This situation is called Pareto optimality. When Pareto optimality is reached, the rates at which the consumers are willing to substitute one good for another are equal and no further trade will take place. Neoclassical policy analysis, for the most part, consists of searching for things that interfere with free exchange and the movement towards Pareto optimality. ... a Pareto optimal position ... [is] the most efficient allocation of goods (and inputs), given the initial conditions and the array of underlying assumptions" (Gowdy & Olsen, 1994, pp. 164-165)

[34] Goodland and Ledec describe the "Pareto optimum" as "a state of the economy in which all economic resources are allocated and used "efficiently", such that it is impossible to make anyone economically better off without making someone else economically worse off" (1998, p. 554)

From an environmental economics point of view, the lack of property rights over many natural resources is an impediment to efficient resource allocation, because this prevents their pricing and exchange in the market (Gowdy & Olsen, 1994, p. 165; Sagoff, 1986, p. pp. 129-130); there is said to be "market failure" or "absence of markets". The belief in market efficiency explains, I assume, the strong tendency in free market environmentalism to package as much of nature as possible as "goods" and "services" capable of being owned, and thus priced and exchanged in the market (Anderson & Leal, 1998, pp. 537-538). But even where the natural environment is owned and priced, the market tends not to take fully into account all the environmental costs - pollution, degradation, resource exhaustion, waste assimilation, for example - incurred in goods production, or service delivery (Martinez-Alier, 1987, p. 16, p. 6). Sagoff argues that radical environmentalists [who, roughly speaking, hold an ecologist or seeing green perspective] are more likely than reform environmentalists to reject resource economists' belief in market allocative efficiency (1998, p. 543, p. 545), and cost-benefit analyses (p. 545) to protect natural resources. They "look to politics[35] to keep markets, however efficient, from replacing our natural birthright" (Sagoff, 1998, pp. 541-542) with consumerism and pollution (p. 547).

Anderson and Leal (1998, p. 539) though have no great faith in the political process [via sustainable development] to provide the necessary discipline in natural resource use. Sustainable development requires "political regulation to discipline consumers and producers and limit economic growth. In the absence of growth, those at the bottom of the economic ladder can only improve their lot by taking from those at the top, so population must be controlled, consumption must be curtailed, risks must be limited, new environmental ethics must be developed, and wealth must be redistributed". The problem with this approach is that it, rather unrealistically, "depends on omniscient, benevolent experts[36]" (p. 539). Besides, government is just as likely to externalize costs as is the free market entrepreneur taking advantage of unowned natural resources (p. 538).

3.4.3.2 The problem of 'needs' vis-a-vis 'preferences'

The WCED (Brundtland) definition of sustainable development talks about meeting the *needs* of the present generation without compromising the ability of future generations to meet their needs.

In mainstream economy discourse, it is individual *preferences*, not basic needs, which influence market supply and demand. Early ecological economist Lancelot Hogben (1895-1975), professor of Biology and Society at the London School of Economics, had already suggested that classical economists' idea of the primacy of "individual preferences", as revealed by the transactions of economic agents in the market, was suspect, because capitalist propaganda had taught people to want the undesirable goods produced by capitalism, not the things they needed most. In his view, people's needs were to be understood in terms of, but not reduced to, "the calorific requirements of nutrition"; not capitalist market goods. But such attempts to educate people to reject social status consumerism in social behaviour are condemned in classical economic theory as infringement of economic agents' personal economic freedom (Martinez-Alier, 1987). The critique of consumerism and materialism, and support of production to meet needs, rather than wants and profit, are familiar "seeing green" themes (Chapter Eight: 6.3.3.2, and 6.5.6).

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[35] But one must keep in mind that this political process is for Sagoff, "libertarian environmentalism" which upholds "the separateness and inviolability of the individual" (p. 552) and the protection of property rights (p. 552), and which rejects "collective ends as dubious as economic efficiency" (1998, p. 550) or social welfare defined in terms of utility maximization [individual preference maximization] (Sagoff, 1998, p. 543)

[36] To attain appropriate technology, correct population level, and a proper environmental ethic, political managers must "possess technical knowledge about quantities and qualities of resources, both human and physical, and they must have knowledge about what constitutes the material needs of both present and future generations. Furthermore, they must set aside any self-interest to manage for the benefit of present and future generations" (Anderson & Leal, 1998, p. 539)

In modern ecological economist Martinez-Alier's (1987) view, orthodox economic theory avoids the question of objective needs, preferring instead the subjectivism of "mysterious' (p. 157) and "inscrutable" (p. 158) individual preferences and valuations, without ever querying their moral origin or content. Armstrong-Buck (1986, pp. 252-253) notes as "difficulty ... utilitarianism's insistence on equality of consideration of all individuals...". This "means that we have no way to discriminate between preferences other than to count how many individuals prefer what. ..... Is right action simply a matter of what most people prefer?" (Armstrong-Buck, 1986, pp. 252-253). Environmental ethicist Bryan Norton too, in his concept of "weak anthropocentrism" [section 6.3 below] also problematizes "felt preferences" of individuals as sole and suitable basis for an environmental ethic. Hayward (1995, p. 102) notes that *whose* preferences are to count, will remain those of the power-holders, until "all preferences have an equitable chance of being heard and being effective". And finally, because economic utilitarianism focuses attention on the preferences of individual *human* economic agents, "...objective interconnections in an ecosystem as well as nonsentient beings who feel no preferences at all are not directly considered ..." (Armstrong-Buck, 1986, pp. 252-253). Hayward (1995, p. 102) also poses the question of why only human interests should matter in economic decision-making.

3.4.3.2.1 "Comparative advantage"

A pragmatic problem in the wants versus needs debate, is the concept of "comparative advantage". This concept, in ecological "division of labour" terms, has "historically ... encouraged many developing nations to depend on a small number of agricultural export commodities, while attending less to domestic food production" (Goodland & Ledec, 1998, p. 558); there is a tendency for domestic per-capita food production to decline. There is thus "lively debate" (p. 558) on the proper balance for a developing country between export crops [overseas consumer preferences] and domestic food production [local basic needs].

Goodland and Ledec (1998, p. 558) add several environmental concerns:

> Agricultural commodity projects are usually sited on prime agricultural land in order to maximize the yields needed to support the investment. This can impair indigenous food production, which is often pushed to more marginal land as a result. Indigenous food production on marginal land often threatens ... protective cover. Overgrazing is also more difficult to avoid on marginal land. Agricultural commodity projects need modern highways, with all their environmental impacts, including unplanned settlement and inappropriate land use in ecologically fragile areas. Many cash crops are often grown as large-scale monocultures, while food grown for local consumption by small farmers is more readily adapted to polyculture and agro-forestry systems. Monocultures are less desirable from an environmental standpoint because of their vulnerability to pests and diseases, their often-heavy reliance on biocides and chemical fertilizers, and their suitability for using heavy machinery which often compacts or otherwise damages the soil.

3.4.3.3 The problem of ecological externalities

In classical and neo-classical economic theory, externalities are usually defined as "unintentional side effects of production and consumption that affect the levels of consumer utility and enterprise costs" (Bartelmus, 1986, p. 10). Botzler and Armstrong (1998, p. 517) call it the "... 'spillover effects of someone's production or consumption that affect the well-being of other producers and consumers'. These effects are not directly reflected in market transactions...". Externalities are sometimes referred to as the problem of "missing markets", or "market failure". Botzler and Armstrong note that the "free-market or neo-classical strategy for abating environmental problems ['externalities' such as pollution, soil erosion, losses or gains in wildlife habitat] is that of improving markets by figuring out ways to internalize externalities" (1998, p. 517). Ecological economist Martinez-Alier (1987, p. xxv) defines externalities more normatively as "… a word which describes the shifting of uncertain social costs, or possibly benefits, to other social groups, whether 'foreigners' or not, or to future generations".

Ecological economics critiques conventional economics' externality analysis, because it makes a series of debatable assumptions: (a) that it is possible to know the needs and preferences of future generations, as far as future natural resources are concerned, (b) that it is possible to know what technological advances there might be in the recovery of exhaustible resources, or what new resources might be discovered, (c) thus that it is possible through the practice of discounting, to assign future monetary values to present non-renewable resources. This last includes further assumptions about (i) the amount of reserves currently available, (ii) the possible demand of all future generations, (iii) what rate of discount, across what time-horizon [the how many generations? question already encountered] is appropriate, and (iv) the rationality of discounting at all (Martinez-Alier, 1987, p. 4).

Martinez-Alier argues that current mainstream economic analysis of ecological externalities is not rational (1987, p. xiii), or value-free, as often claimed. Actually, analysis of externalities cannot exist separately "from a society's moral evaluation of the rights of other social groups" (1987, p. xxv). Politics and ethics both play a role because human affairs cannot be decided by economic rationality alone (1987, p. xxv). He suggests that conventional resource economists are uncomfortable with ecological economics, because it threatens to swamp them "in a sea of externalities whose evaluation by conventional economic methods presents intractable problems" (p. xii).

3.4.3.4 The ethical problem of future economic agents

> "Cost-benefit analyses often discount future costs and benefits by a fixed percentage each year, thereby assigning less present worth to future [human beings] than to present human beings...." (Wenz, 2002, p. 396).

Neo-classical economists claim that the economy, including the allocation of scarce resources, can be explained *rationally*, in terms of *individual* needs and preferences. So how do economists rationally apply the concept of individual preferences to future economic agents, who have the "ontological" difficulty [as Martinez-Alier, (1987, p. 17) dryly remarks], of not being able to make their preferences, valuations, and willingness-to-pay known in the present-day market, when it comes to the inter-generational allocation of scarce, non-renewable resources?

The bottom line is that the market for exhaustible resources " simply … cannot operate unless agents have some estimates about present and future availability, and unless they attribute a certain present value to future demand" (Martinez-Alier, 1987, p. 44). So the market does give weight to future demands for exhaustible resources, for example, in the form of a present value. What is not made clear, is that the economic agents who do this in the present, are also people who hold particular views about the possibilities of scientific and technological progress, about the meaning of wealth and welfare, and who bring to the market place, their own individual preferences and values which are *subjective and psychological*, and not objective.

Here Martinez-Alier (1987, p. 156), argues that although "economic theory abhors moral principles", when it comes to making supposedly rational policy choices about the inter-generational distributive allocation of exhaustible resources, and wastes (p. x), resource economists *are* actually making moral choices, through the practice of 'discounting'.

3.4.3.5 Discounting: actual choices made on behalf of future generations

If sustainability is the new global ethic, then each present generation must find some political-moral-economic basis of sharing resources and wastes with future generations. Discounting - the practice of calculating the future costs and benefits of an asset into its current value – is assumed to provide this basis. The proper rate of discount is a favourite topic of disagreement between ecological and neoclassical environmental economists (Gowdy & Olsen, 1994, p. 166, and footnote 17).

The how-to of discounting assumes the appearance of a mathematical formula, but as the rate of discount within it represents moral/ethical assumptions; it is *not* ethically neutral. For example, if the discount rate is r percent per year then a payment of $A after n years is worth $A(1+r)^n$ in current dollars, after discounting (Grafton, Pendleton & Nelson, 2001)[37]. Grafton, Pendleton, and Nelson (2001, my italics) baldly note that a "discount rate", is, in "consumption analysis, a factor by which future welfare or utility is multiplied to indicate that *future consumption is less valuable in the present than current consumption*. See time preference." [my italics]. Turning to their definition of "time preference", we learn that it is "1. *a preference for consumption in the present rather than in the future*. ...." . Bartlett (1986, p. 237, footnote 54) makes this even clearer: "The future in economic reasoning is discounted at rates based on investment rates of return, making the present value of costs and benefits occurring more than forty years in the future [approximately one generation that is] practically zero."

Strict intergenerational equity in natural resource conservation would mean giving equal importance to future and present needs, that is, adopting a zero rate of discount (Gowdy & Olsen, 1994, p. 168; Martinez-Alier, 1987, p. 163). But the economically rational thing to do, is to discount the future environmental benefits and costs [including irreversible loss] of a project to net present value. So one finds that the discount rates commonly used in an analysis of a project's costs and benefits, are 10% and more, meaning, that the value of an environmental amenity "disappears after only a few years" (Gowdy & Olsen, 1994, p. 168), investments with long-term benefits are discouraged and those with long-term costs are promoted (Goodland & Ledec, 1998, p. 559; Gowdy & Olsen, 1994, p. 167). On Gowdy and Olsen's view (1994, p. 167) "The existence of a positive discount rate goes against the very notion of environmental sustainability.".

The rate of discount is then scarcely only an issue of rational economic efficiency:

> "A given rate of discount of the future implies a given ethical attitude towards future generations" (Martinez-Alier, 1987, p. 158).
>
> "The use of any particular discount rate r... [in calculations of costs and benefits] operationalizes a subjective judgment of the relative importance of the present and the future. It is a normative proposition expressed in mathematical terms, rather than a neutral or objective quantitative assessment" (Goodland & Ledec, 1998, p. 559).

3.4.3.6 Cost-benefit analysis [CBA], and "willingness to pay"

> " ...mainstream resource economists define 'social welfare' in terms of 'preference satisfaction' and measure 'preference' in terms of willingness to pay" (Sagoff, 1998, p. 543)

Cost-benefit analysis[38] [CBA] and "willingness to pay" are two concepts often encountered in resource economic approaches to natural resource issues, but they are not uncontentious, as they contain several assumptions, not always made clear:

(1) Economics is about "allocating the resources available to society in a way that maximizes social well-being" (Goodland & Ledec, 1998, p. 554). Mainstream resource economists define social welfare in terms of competing preference satisfaction, rather than need satisfaction (Sagoff, 1998, p. 543) [section 3.4.3.2 above]

(2) Often in specific projects, choices or trade offs between their various economic, social and environmental impacts [positive and negative] have to be made, and CBA is one way of making

[37] Gowdy and Olsen's simpler! explanation is: "For example, one hundred tons of coal, at a discount rate of ten percent, may be worth $1 000 if delivered today, $900 if delivered a year from now, approximately $800 in two years, and so on) (Gowdy & Olsen, 1994, p. 166)
[38] Which is suggested to be a "degraded" form of utilitarianism (Armstrong-Buck, 1986, p. 252).

such choices. Preferences are reduced to money terms, and an analysis of their costs and benefits is undertaken to identify the most efficient choice. In such CBA, tangible environmental goods and services[39] are often underestimated, or not taken into account [the ecological externalities problem in section 3.4.3.3 above], because they are public goods, and not priced in the marketplace. But intangible environmental goods and services may also possess spiritual, or represent ethical values which are beyond pricing (Goodland & Ledec, 1998, p. 555).

(3) Where such market pricing is not possible, resource economists resort to "shadow" pricing (Sagoff, 1986, p. 130) to obtain a "market" value for these tangible and intangible environmental goods and services. This is usually done through contingent valuation methodologies, such as establishing a consumer's "willingness to pay" (van Dieren, 1995, pp. 242-243; Sagoff, 1998, p. 543), including willingness to forgo consumption that negatively affects the environment (van Dieren, 1995, p. 243). The "willingness to pay" method is however critiqued on several grounds: it favours those with more money; it cannot account for the difference between what people say they are willing to pay and what they would actually pay; it doesn't eliminate the "free rider" problem [if enough other people are willing to pay then I can ride free]; it assumes almost perfect knowledge[40] by the consumer of all the negative and positive impacts involved [importantly, this in turn assumes accountability and transparency in the agency conducting the willingness to pay research], including the costs of short and long-term, perhaps irreversible, impacts on the natural environment (Goodland & Ledec, 1998, pp. 557-558; Gowdy & Olsen, 1994, pp. 169-170; van Dieren, 1995, pp. 242-243).

(4) In CBA, the preferences of future economic agents are usually discounted in favour of present economic agents' choices [3.4.3.4, 3.4.3.5 above]; and

(5) "preferences" of nonhuman living beings are ignored.

Shadow pricing methodologies are "incomplete" (Goodland & Ledec, 1998, p. 555), and "In practice, physical estimation of the environmental effects of a proposed project usually amounts to little more than educated guesswork" (Goodland & Ledec, 1998, p. 554). And perhaps even more significant, the observation in van Dieren (1995, p. 171, my bold emphasis) that "physical environmental accounting does **not** enable policy makers to make a tradeoff between economic and environmental gains and losses... The *U.N. Handbook on Integrated Environmental and Economic Accounting* acknowledges this."

3.4.4 How green is environmental economics?

It appears to me that environmental economics is nothing other than "economic anthropocentrism", to use Wenz's phrase (2002, pp. 395-396), quite obvious in descriptions of nature as "nonproduced natural assets" (van Dieren, 1995, p. 243). Hayward (1995, p. 90, p. 100, p. 102, p. 104, p. 107, p. 115) consistently describes environmental economics as a non-critical, reformist, anthropocentric enlightened self-interest position, i.e. it recognizes "no sources of value in nature other than those which assume the form of human preferences", and it retains "an instrumental attitude towards natural resources" (p. 104). Barrett and Grizzle (1999, pp. 33-34) also link natural resource economics with a strong or heavy anthropocentric position (section 6.1).

[39] "Environmental services are beneficial functions performed by natural ecosystems, such as maintenance of water flow patterns, protection of soil, biodegradation of pollutants, recycling of wastes, support of fisheries and other economically important living resources, and regulation of climate..." (Goodland & Ledec, 1998, p. 555)

[40] Recall that perfect or near perfect information is one of the assumptions underlying the possibility of reaching economic efficiency, or the Pareto optimum (Gowdy & Olsen, 1994, p. 164, and pp. 169-170)

Ecofeminist Janis Birkeland suggests that the anthropocentrism of environmental economics is just another expression of androcentrism. She argues that despite its increased attention to the natural environment, environmental economics has failed to address its inherent gender, ethnic, and colour blindness. It continues to depend on the neoclassical economics assumption "that the economic agent is none other than our Western male archetype – a self-interested and autonomous individual who makes rational choices by weighing costs and benefits to himself ..." (Birkeland, 1996, p. 335). Environmental economic theories and methods "which flow from androcentric[41] origins must be suspect, because they tend to abstract and naturalise instrumental relationships". Not only do they establish and maintain power in the social order, but they also "facilitate the exploitation of nature" (Birkeland, 1996, p. 334). In summary, natural resource economics conducted within a reformist, anthropocentric environmental economics perspective tends rather toward a grey-green than green perspective; inter alia, retaining a strong link between economic growth and development (Hayward, 1995, p. 104).

4. Development theory

Development economics, or development studies[42], began to emerge from the general field of economics at the beginning of the 1950s, concurrently with the political decolonization of Asia, the middle East, and later, Africa (Martinussen, 1997, p. 19).

Development "is a value word; it embodies ideals and aspirations and concepts of what constitutes the good society." (Hayward, 1995, p. 97). On Martinussen's (1997) view, three broad streams of thought can be distinguished within the development field. The first two should be understood within mainstream Western philosophy, with its emphasis on the world as profane, on rationalism as epistemology, on human superiority, and on domination over nature via science and technology as the highway to "progress". By contrast, many Third World philosophies contain fundamentally different conceptions of the human-nature relationship, and thus potentially differing understandings of development.

Under the combined influence of all these schools of thought, the notion of "development", originally understood as increased production and consumption [economic growth] through economic transformation/modernisation to deliver increased incomes, has gradually expanded to include sensitivity to wider cultural, political, and societal issues, such as national economic [not only political] independence, the elimination of poverty, increased human welfare, increased human capacity at all levels of society, including that of the poor/marginalized/deprived, to partake in, make, and implement development decisions (Martinussen, 1997, pp. 18-30, pp. 34-43) which respect environmental sustainability in cultural context. Development theory has moved from an economic growth interpretation, to a rights-based interpretation of development[43] understood broadly as reduction of poverty and an enhanced quality of life (Attfield, 2003, p. 127), on a sustainable basis.

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[41] Recall from Chapter Six: 5.1.1(a) ecofeminist Plumwood's suggestion that psychological egoism is a "remarkably persistent, widespread, and socially fostered fallacy" (Plumwood, 1997, p. 335), underpinned by *malestream* [androcentric] ontological views of the human being, inter alia, as self divided from the other

[42] I make no claim to have undertaken any in-depth study of the field of development, of its ethic, or its theories and strategies; instead I have consulted what seem to me to be a few excellent books, such as Martinussen (1997), mostly, but not only, on some of the theories informing mainstream and alternative models of development, and on agriculture and natural resources in economic development; Neefjes (2000), who elaborates on a household-based sustainable livelihoods understanding of environmental sustainability, which is used by some development agencies in Namibia; Martinez-Alier (1987) and van Dieren (1995), who articulate the ecological economics critique of mainstream economic accounting, and propose alternative strategies, mainly for the state and corporate economy sectors of society, and Coetzee, Graaff, Hendricks, and Wood (2001) who look at development theory, policy and practice in a southern African context

[43] The 1986 United Nations Declaration on the Right to Development defined it as "a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of the entire population and of all its inhabitants on the basis of their active, free and meaningful participation in development and in the fair distribution of the benefits resulting therefrom..." (Attfield, 2003, p. 127)

In this section, I sketch (4.1) early macroeconomic growth and development theories, (4.2) alternative streams of Western Enlightenment thought on development, (4.3) fundamentally different non-western conceptions of development, and (4.4) the late inclusion (1970s) of the natural environment in development theory.

4.1 Early macroeconomic growth and development theories

Mainstream economic development theory comprises two broad and divergent schools of thought (a) pro-capitalist/market theories which have their roots in classical political economy as it was articulated in the eighteenth and nineteenth centuries (section 3.1 above), and (b) theories with roots inter alia, in the sociological work of Emile Durkheim, Max Weber, and Karl Marx. Particularly the latter's critical work on the political economy of capitalism contributed to the capitalist-critical dependency, under-development, and socialist production theories of (Third World) development.

The earliest development theories tended towards macro-economic growth (Martinussen, 1997, p. 297), and paid little attention (i) to issues of social inequality such as economic poverty, with attendant problems of no education, poor housing, and undernourishment, (ii) to the linked *political* poverty, in the sense of being politically passive, poorly informed and poorly organized to take part in the political process (Martinussen, 1997, pp. 296-300), or (iii) to gender inequality (Martinussen, 1997, pp. 306-308). Alternative 1970s models which did centre on the "basic needs[44]" concept were pushed into the background during the 1980s Organisation for Economic Co-operation and Development [OECD] and World Bank focus on neo-classical economics and structural adjustment programmes (Martinussen, 1997, p. 301). However alternative approaches to development re-appeared, with focus on poverty reduction, social welfare, and 'sustainable human development'. I discuss next these alternative models of development - not their content (see for example, Martinussen, 1997, pp. 303-306), but their overall aims, and their theoretical/ "ideas" heritage.

4.2 Alternative Western models of development

Martinussen (1997) identifies two schools of thought within this "alternative" stream, the "re-definition of development goals" school of thought, and the "theories of civil society" approach. The "gender, environment, and development" approach could be considered a third alternative western development model.

4.2.1 The "Re-definition of development goals" school of thought

This school of thought traces its theoretical roots to John Stuart Mill[45] (1806-1873), and to the social liberalism of the nineteenth century (Martinussen, 1997, p. 293). Whereas mainstream economic development theories emphasize economic growth and industrialization as development goals (Martinussen, 1997, p. 278), this school of thought tends to emphasize "welfare and human development with increased personal choices as the higher-order objectives" (Martinussen, 1997, p. 291). Amartya Sen's (1985) "capabilities" work would fit here too. Martinussen (1997, p. 294) quotes what for him is a key thought in the "re-definition of development goals" approach:

> The questions to ask about a country's development are ... What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have become less severe, then beyond doubt there has been a period of development for the country concerned. If one or two of these central problems have been growing worse, and especially if all three have, it would be

[44] These include (1) individuals' and families' food, shelter, clothes, and other daily life necessities requirements (2) access to public services such as safe drinking water, sanitation , health, education (3) opportunity and ability to "participate in, and exert influence on, decision making both in the local community and in national politics" (Martinussen, 1997, pp. 298-299)

[45] Mill's defence of a stationary scenario for capitalist and population growth (Dobson, 2000, p. 77), and opposition to the mindless growth/progress of industrialism, is for example, approvingly cited by deep ecologist George Sessions (Sessions, 1995, p. 164)

strange to call the result 'development', even if per capita income had soared. (Seers[46], 1972)

4.2.2 The "theories of civil society" approach

This second alternative development model traces its theoretical roots variously to nineteenth century social liberalism, Gramsci's conception of civil society (Martinussen, 1997p. 294), and to Romanticism and utopianism. It thus shares ideas-links with "seeing green". I discuss two of what I see as its main ideas next, the idea of "community", and people-led development.

4.2.2.1 The idea of "community"

Martinussen notes that "conservative romanticism and utopian socialism, ... were both normative reactions against the emerging nineteenth century capitalist society and the accompanying centralisation and institutionalisation of state power. ... These two ideologies [i.e. conservative romanticism and utopian socialism] each in its particular way, promulgated ideas about a better society based on community in the sense referred to by the more precise German word *gemeinschaft*, not on society as *gesellschaft*. Conservative romanticism wanted to preserve what were seen as the more human-friendly local communities of the past. Utopian socialism wanted to introduce such communities to replace alienating capitalism. [new paragraph] This basic preoccupation with, and positive assessment of, small local communities – outside the reach of the state and the corporate, capitalist economy – can be identified in many of the contemporary alternative development conceptions and theories" (Martinussen, 1997, p. 294). This idea of genuine community, or living in solidarity ["conviviality" as it is sometimes called, for example, Illich (1973)], whether inside or outside "the system", is a prominent part of "seeing green" (Chapter Eight: 6.2.2).

4.2.2.2 People-led development

The "theories of civil society" approach focuses attention on both the *local community* and the *household* "as sufficient bases and frameworks for human welfare" (Martinussen, 1997, p. 291). The household is seen not just as a unit of consumption, but a unit of production too, such as household care activities, and informal economic activity outside the market economy (Martinussen, 1997, pp. 310-311). Within this more normative[47] stream of development thought (p. 289) for example, can be accommodated the ideas of civil society participation in environment-development discourse. These range from decentralized people-managed development (Martinussen, 1997, pp. 331-341), to less radical ideas such as the "public participation" advocated by *Namibia Vision 2030* in urban development for example (Vision 2030, p. 174), or the "public participation" process in environmental impact assessment, management and monitoring advocated by the Windhoek-based Southern Africa Institute for Environmental Assessment's Calabash programme.

4.2.3 The Gender, Environment and Development [the GAD or GED] approach

A third alternative area focuses on the role of women in development. Gender researchers can be divided into two main positions, the Women in Development [WID] approach, followed by many governments and international organizations including the World Bank and the United Nations Development Programme [UNDP], and the Gender and Development [GAD] approach. Martinussen discusses each briefly (1997, pp. 307-308).

The WID approach appears to follow liberal feminism's [Chapter Six, section 2.1.1] objective of demanding equal opportunities and rights for women, while the GAD approach [which Neefjes (2000, p. 26) refers to as the GED or Gender, Environment and Development approach] focuses on how

[46] No pages given in Martinussen's (1997) bibliography, p. 369
[47] In the sense that it problematizes economic growth by asking if other understandings of development are more preferable (Martinussen, 1997, p. 289)

gender structures women-environment relationships in real-world practice[48]. While according to Martinussen (1997, p. 306), the GAD/GED approach has not yet had any discernible impact upon mainstream development research, it is according to Neefjes (2000), part of the political ecology-informed[49] sustainable livelihoods approach, broadly followed by some development agencies at community level in Namibia.

Martinussen surprisingly makes no reference to ecofeminism which I believe *has* attempted to theorize the relationships between gender discrimination, development, and the natural environment. Though ecofeminism specifically critiques Western mainstream development models as paternalistic, neo-colonial, dismissive of indigenous women's intimate yet scientific knowledge of their environment, and insensitive to their land-dependent roles as providers and carers [Chapter Six: 6.3, 6.4], it does not escape critique by writers within the GAD/GED field.

According to Neefjes (2000, p. 25[50]), Agarwal (1998[51]) from the GAD/GED school, critiques ecofeminism on the grounds that it (a) fails to recognize that concepts of nature, culture and gender vary across cultures, (b) fails to differentiate women by class, ethnicity, and caste (c) fails to address power[52] and economic differences as sources of dominance, concentrating instead on ideological arguments, and also fails to show how ideological differences are constructed (d) fails to really address "the actual material relationship that women may have with nature" (e) limits itself to rural people and environments only.

By contrast, feminist political ecology informed GAD/GED emphasizes "material relations" and "their structuring by gender relationships", particularly as these are manifested in "gendered knowledges of environments, sciences, and technologies". Simply, negative environmental change, whether insidious or catastrophic, and attempts to reduce or mitigate environmental stress, will have differing impacts on men and women, and social castes and classes. GED writers suggest that in sustainable development in practice, attention should be paid to "(a) the gendered division of labour and responsibility which influences women's particular relation to environmental change; (b) gendered property rights, as a mediator in gender-environment relationships; (c) gendered positioning in households, communities, and other institutions; (d) the influence on gender relationships and gender –environment relations of the wider political economy; and (e) ecological characteristics that determine the processes of gender and environmental change" (Neefjes, 2000, p. 26). This feminist political ecology approach seems to represent a female-oriented homocentric move away from the more eco-centric ethic of care embraced in eco-feminism [Chapter Six].

4.3 Non-western conceptions of development

Non-western worldviews provide "countervailing and very fundamental alternatives to 'Western' thinking[53]" (Martinussen, 1997, p. 290) and so differing views on development too. These alternatives are often based on non-secular, spiritual or metaphysical understandings of the human-nature relationship, for example, those found in Islam, Hinduism, Buddhism, or Chinese yin/yang philosophy

[48] For example, "gender-determined division of labour, men's and women's knowledge of environmental resources, gendered control over technology, gendered property rights..." (Neefjes, 2000, p. 111)
[49] "Political ecology is an attempt to develop a theory of environmental change in its social, economic and political context. It has been developed from research and experience in diverse settings in the rural, developing world. It is rooted in social-political science and geography....." (Neefjes, 2000, p. 21). In this field, Blaikie and Brookfield's work (1987) is "important" (p. 21)
[50] Martinussen (1997, pp. 307-308) also comments on the content of the GAD critique
[51] Neefjes (2000, p. 248) does not give a page number
[52] Power issues are critical, Neefjes (2000, pp. 100-101) argues, because they sit at the heart of who participates in the process of social change. Power can be looked at as "power to" [individual empowerment: increased awareness, improved confidence, better negotiation skills, stronger social networks]; "power over"; and "decentered power" – this latter appearing similar to a poststructural understanding
[53] For this reason, they are discussed in some detail in environmental philosophical literature, for example, in Engel and Engel (1990), Tucker and Grim, (1994), or Botzler and Armstrong (1997). Neefjes (2000) also provides brief characterizations of these alternative spiritual/religious views of nature

(Martinussen, 1997, p. 290; Neefjes, 2000, pp. 11-12). Two non-western views on environment and development have been briefly discussed in this study: Dr Vandana Shiva's ecofeminist critique of western development in Chapter Six, and Ramachandra Guha's critique of the relevance of radical western environmental ideas [deep ecology] to development in non-western societies in Chapter Four.

4.4 The inclusion of the natural environment in development thought

The specific inclusion of the natural environment as a factor in development theory is recent. Up until the 1970s (Martinussen, 1997, p. 149), mainstream development economic theories took for granted that "the depletion of natural resources, increasing pollution and other environmental problems are of a temporary and surmountable nature. The basic assumption was that human innovativeness and technological development would provide solutions in the long term" (Martinussen, 1997, p. 143).

The natural environment appears in development theory today as a "problem". Marthinussen (1997, pp. 154-161) identifies, without "delving" too deeply into them, two main perspectives in social science research on the environment as a theoretical development problem. One, which is "broadly in line with neo-classical economics, does not regard capitalist development as the problem. Rather, capitalism and production under market conditions are seen as part of the solution to many environmental problems. When the market economy advances, and when the previously free goods – water, land, forests, etc. are assigned economic values, unrestrained exploitation will be significantly limited. The reasoning behind this assertion is that environmental deterioration to a large extent is the consequence of pervasive externalities[54] in the extraction, processing, transport, consumption and disposal of goods and services. ... By 'correcting' the distortions in the price/market system arising from such externalities – that is by assigning costs to environmental damage and forcing these costs upon the relevant actors – governments can assist in improving resource management without hindering continued capitalist development" (Martinussen, 1997, pp. 155-156). This approach would accord more with a grey-green perspective; a development perspective critical of capitalism, such as that discussed next, would tend to represent a greener position.

The second position on the environment as a "development problem" is "... in line with classical dependency [economic] theories" and claims that "most global environmental problems are the outcome of the unrestrained development of capitalism. Environmental problems faced by Third World countries ... are further aggravated because of global processes of economic exploitation. Transnational corporations, particularly the large agro-business firms, are the major actors in these processes. ... many resource-depleting and polluting firms are attracted to the poor countries as a result of the more lenient policies and regulations pertaining to their activities in poor, peripheral as opposed to affluent, centre countries. ... most poor countries have not dared to introduce ... restrictive policies for fear of scaring away foreign investors[55]." (Martinussen, 1997, p. 155). These differing approaches to the environment in development appear as different sustainable development models in the UN system (section 7.1).

[54] Martinussen explains externalities as "costs (and benefits) not borne by agents engaged in economic activity" (1997, p. 155)

[55] This does seem intuitively true of the "Ramatex" saga in Windhoek. Established without any publicly available environmental impact assessment, suspension of usual labour rights, and on astonishingly favourable economic conditions from the Windhoek Municipality, Ramatex is now in the process of withdrawing on the alleged grounds, *inter alia*, of hostility from local pro-environmental groups [though changes in international trade regulations seem the more likely ground]. It leaves behind it, possible significant environmental damage in the form of toxic waste (for example, *The Namibian*, Vol 21, No. 95, 26 May 2006, "Million-$ toxic question hangs over Ramatex"). The entire saga is I think, a worthy topic of research on how easily 'economic sustainability' might take precedence over 'environmental sustainability'. See also Shindondola and Jauch, (2003)

5. Ecology as science

In this section I introduce, within narrow confines, the idea that ecology as science[56] is not neutral. Drawing on environmental philosophical literature, I seek to show (5.1) that the term "ecosystem" is not value-free, but contains implicit ontological and epistemological assumptions, (5.2) the value assumptions present in differing conceptions of ecosystem "health", and (5.3), that *anthropocentric* normative understandings of ecosystem health inform real-world environmental policy. In (5.4), I introduce the idea of "the ecology of chaos" [or instability, or disequilibrium], a notion found in scientific ecology, and followed also by some development theorists.

5.1 The implicit values in the term "ecosystem"

> "Ecological science … was strongly influenced by a philosophy of holism, from which it cannot be divided. … Could Haeckel have given ecology its name without being familiar with his countryman Goethe's holism?" (Wall, 1994, p. 3)

One of scientific ecology's keywords, "ecosystem" was specifically promoted in order to rid the science of ecology of its holistic organicism - a seeing green idea (Chapter Eight: 4.1), and to re-establish a mechanistic view of nature.

The basic premise or assumption of organicism is that the relationship between the parts of a thing are not arbitrary and extrinsic, but are inherent – the relationship has not been imposed on the thing from outside; the relationships are a part of, not extra to, the thing itself. In the idea of organic unity is implied the concept of totality, wholeness, or "holism". The two conditions of this organic unity are (1) the parts are in keeping with each other and the whole (2) alteration of a part unavoidably means, alteration of the whole (Orsini, 2003; Wallach, 2004). The whole is also understood to have "emergent" properties – it can neither be reduced to the sum of its parts, nor understood completely in terms of them.

The key implication of organicism, unsettling to some, is that there is purpose in evolution. The idea is present in both the social and natural sciences. Early nineteenth century holistic biology understood nature as seeking balance, equilibrium, harmony (Callicott, 1986, pp. 306-307, Neefjes, 2000, p. 53). In the early twentieth century [approximately 1900 to 1930], American biologist Frederick Clements spoke of biotic "communities" in nature. Plant communities could be understood in terms of dynamic succession, from immature to mature, from pioneer to climax species (Callicott, 1986, pp. 306-307, Neefjes, 2000, p. 53). Zoologist Charles Elton, whose ideas influenced social ecologist Bookchin (Chapter Five, section 2.1.4.2), was also suggesting in the 1920s, that we conceive of ecological relationships as uniting plants, animals, soil, airs, waters, into "biotic communities" (Callicott, 1990, p. 122). Forester and proto-green Aldo Leopold (Chapter Two: 2.5.2(d)) likewise based his view of nature on the organic idea[57] of the "community", defined by him to include not just people, but also "soils, waters, plants, and animals, or collectively, the land" (Leopold [1949] 1966, p. 219), which he saw as an *ethical* community. French philosopher Henri Louis Bergson (1859-1941) contended that "biological evolution is not consistent with or even well served by a mechanistic philosophy…" (Audi, 1999); anthropologist Gregory Bateson (Chapter One: 2.1.3) proposed the concept of mind-in-nature as informing organic process, chemist James Lovelock in his 1979 Gaia theory hypothesized that life on Earth, its atmosphere, oceans, the biosphere, and its soils, are all part of a self-organizing organism (Neefjes, 2000, pp. 20-21; Steverson, 1994, p. 80; Weston, 1987, p. 217; Wissenburg, 1993, pp. 8-9). Modern biologists such as Maturana and Varela (Dell, 1985; Steverson, 1994, p. 87) speak of

[56] Scientific ecology, which apart from holistic biology, has roots in geography, soil science, hydrology and climate studies (Neefjes, 2000, p. 20), is variously defined, but essentially means the "Study of life and interactions between organisms, and between organisms and their biotic and abiotic environment" (Grafton, Pendleton & Nelson, 2001)

[57] But according to Callicott (1986, p. 308), Leopold also described nature in terms of [Tansley's] "physics-born ecosystem model"

"autopoiesis", a term which describes an organism's characteristic qualities of self-organization, self-renewal, and self-interest in survival[58].

The more mechanistic term "ecosystem" was deliberately coined in 1935 by British ecologist Arthur George Tansley to replace the concept "community" (Callicott, 1986, p. 307), "redolent of organicism" (Wallach, 2004). Tansley proposed instead a "quantitative, thermodynamic, biophysical model of nature" (Callicott, 1986, p. 308), based on physics, not holistic biology, as model, to transform ecology "into a value-free, exact quantitative science", with no "mystic overtones[59]" (Callicott, 1986, p. 307).

Tansley's "ecosystem" is a deliberate epistemological and ontological choice. Goldsmith (1995, p. 2, p. 18, p. 261) notes that on Tansley's view, a mature science

> must isolate the basic units of nature [and must] 'split up the story' into its individual parts. It must approach nature as a composite of strictly physical entities organized into a mechanical system. The scientist who knows all of the properties of the parts studied separately can accurately predict their combined results.

The concept "ecosystem" is also an anthropocentric choice, a value choice against the idea of purposive ecological succession to a climax, and its contribution to the idea of stability in nature as normative (Goldsmith, 1995, pp. 260-264). Clements considered that nature "did not move aimlessly but in a steady flow toward stability" (Goldsmith, 1995, p. 260). Tansley was keen to discredit this idea (Goldsmith, 1995, p. 261). He "insisted that man, with his great ingenuity, was capable of creating his own climax, an 'anthropogenic climax' as he called it, which he insisted could even be superior to the natural variety" (Goldsmith, 1995, p. 261).

Goldsmith (1995, p. 261) argues that rejecting the idea of ecological succession, paves the way for the acceptance of economic development's destruction of nature. Bruner and Oelschlaeger (1994, pp. 389-390) argue similarly that Tansley set the stage for the "mainstreaming" of ecology [sometimes called the "New Ecology" to signify its adherence to Tansley's quantifiable ecosystem model (Callicott, 1986, p. 302, footnote 2], for its co-option by the industrial state:

> ... consider that Arthur Tansley's subtle but overwhelming influence on mainstream ecology turned virtually on a single word: *ecosystem*. ... Tansley's "The Use and Abuse of Vegetational concepts and Terms" systematically dismantled the idea of 'the ecological *community* as a complex organism[60]' ... By substituting the word *ecosystem* ..., Tansley divorced himself as a person from the natural community of life and attempted to confine nature study to 'the purely material exchange of energy and of such chemical substances as water, phosphorus, nitrogen, and other nutrients.....[61]'. In this way, mainstream ecology perpetuates the paradigm of classical physics, especially in its denial of any connection between knowing subjects and known objects (since to claim any connection, as does deep ecology, is mysticism) and in its emphasis on 'scientific' measurement of ecosystem energetics. The result ... is that ... the voice of ecology is functionally constrained to serve the ends of the industrial state." (Bruner & Oelschlaeger 1994, pp. 389-390, their italics).

There are also traces of the non-anthropocentric normative organicism idea in the stability-diversity hypothesis of ecosystem health, and the environmental ethical implications of the ideas of preservation and conservation, to which I turn next.

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[58] "A system is autopoietic, when despite the fact that it undergoes substantial change over time, certain continuity and order persists throughout that change. ... Radical and sudden changes or alterations in a system serve to disrupt this continuity and, consequently, destroy the identity of the system" (Steverson, 1994, p. 87). Bateson had already in 1979, identified autonomy as a capacity of a phenomenon possessing "mind"

[59] I take the "mystic overtones" to be a reference to the nineteenth century vitalist thought in organicism (Chapter Seven, section 4.1)

[60] Kingsolver and Paine, 1991, p. 310

[61] Worster (1985), pp. 301-302

5.2 Implicit values in differing understandings of ecosystem "health"

> "Ecosystem health is a normative concept: a bottom line. It represents a desired endpoint of environmental management ..." (Costanza, in Botzler & Armstrong, 1998, p. 35)

McShane (2004), with reference to philosophical, ecological, and medical literature, considers inter alia, whether or not ecosystems exist at all, and if so, whether or not they can be considered organisms at all (pp. 228-230). If they are not organisms, can one speak of them at all as "bearers of health", in either a literal or metaphorical sense[62]? My interest is in the concept of a "healthy" ecosystem: "Talk of ecosystem health has experienced a dramatic rise in popularity over the last fifteen years or so to the point where the concept is now widely used in both popular and academic discussions of environmental problems ... [but] no consensus has developed about what the term ... is really supposed to mean...." (McShane, 2004, p. 227).

The point that McShane makes, on which I wish to build here, is that "health is an inherently normative concept, as it is by its very definition a good state. But what kind of goodness is it? That is to say, in what sense[63], and *for whom*, does health have normative import?" (p. 233, my italics).

5.3 Understandings of "health", and environmental policies

There seem to be broadly, within the "equilibrium ecology[64]" school of thought at least, two contrasting understandings of ecosystem "health", which proto-Green Leopold characterized as the A-B cleavage within conservation (Leopold [1949] 1966, pp. 236-241). The different understandings of "health" generate differing environmental policies, which environmental ethicist Bryan Norton (1986), no doubt harking back to the Muir-Pinchot philosophical divide in the early North American Conservation movement [Chapter Two, section 2.2.1.2], couples with the ideas of 'preservationism' vis-a-vis 'conservationism'.

5.3.1 The 'conservationist' version

In the "conservationist" version, Tansley's "quantitative, thermodynamic, biophysical model of nature ... was immediately turned to economic advantage as a powerful new weapon in mankind's age-old campaign to conquer nature. With the quantitative precision of which ... [his] energy circuit model was capable, ecosystems could be made more "productive" and "efficient" so as to "yield" a higher calorific "crop"" (Callicott, 1986, p. 308). 'Conservationists' tend to emphasize predictable "availability of resources for humans over time" (Norton, 1986, p. 214). Their objectives are "fairly straightforwardly, ... utilitarian [the greatest good for the greatest number... over the long run" (p. 216)] ... they emphasize a hedonistic, material sense of human good" (p. 210). 'Conservationists' obtain these objectives by careful human management of ecosystems to produce a steady flow of resources for human use (p. 215). Commercial criteria are applied to maximize resource outputs (p. 214). In such manipulated ecosystems, "the forces of ecological competition and evolutionary selection no longer operate" (Norton, 1986, p. 216), productivity for human ends is high, but diversity is low (de la Court, 1993, pp. 129-130, in Hayward, 1995, p. 109). But such a system is potentially unstable. Some manipulated ecosystems show stable resource production over a considerable period, but then break down, because the "reserves" of the biotic system have been simultaneously heavily taxed (Norton, 1986, p. 215). The breakdowns often occur "in conjunction with extreme climatic conditions, as in drought-related disasters occurring in sub-Saharan Africa, but their real cause is overexploitation,

[62] She concludes that although "what the world presents us with is a bunch of interacting stuff" (p. 242), the entities we call ecosystems are not "discovered" but are delineated by people with reference to their "research interests and theoretical predilections" (p. 236); whether or not they *are* organisms is a philosophical red herring, at least in relation to whether or not they can be considered healthy. It "makes just as much sense to call an ecosystem healthy as it does to call a person or plant healthy" (p. 228)

[63] She concludes that the kind of goodness implied in "health" is "the good for" kind, i.e. in the sense of health as part of something's well-being, welfare, or interests (McShane, 2004, pp. 233-235)

[64] There is also a "disequilibrium" school of thought, discussed at 5.4 below

which has destroyed the reserves inherent in a system that has functioned through equally severe conditions over past centuries" (p. 215). So, on the 'conservationist' view, a managed ecosystem is "healthy", if in its managed regimen, it shows *resource stability*, and *resilience,* that is, "the ability ... to return, quickly and reliably, to prior levels of functioning following a natural or induced disturbance" (Norton, 1986, p. 216) to deliver goods and services for people. Such ecosystems are often in the "pioneer" stage of ecological succession: "A pioneer ecosystem... is among other things highly productive, which of course endears it to our modern production-oriented society which can cream off the apparently surplus biomass" (Goldsmith, quoted in de la Court, 1993, p. 130, in Hayward, 1995, p. 108).

5.3.2 The preservationist version

The other, more holistic-organicist or "preservationist" version of ecosystem health is contained in the diversity-stability hypothesis[65], that is, that intra- and inter-species interactions – co-operation (symbiosis), competition, altruism[66] - contribute to an ecosystem's stability (Lemons, 1981, pp. 219-230). Biotic diversity has been noted to be higher in mature and undisturbed ecosystems (Sagoff, 1985, pp. 107-109); diversity is thus seen as contributing to stability. A stable system is one which has a higher resilience and greater recuperative capacity in the face of human perturbation, such as anthropogenic climate change, or natural perturbation, such as a tsunami or volcanic eruption. Stable systems are argued to be more predictable too (Lemons, 1981, pp. 219-230; Norton, 1986, p. 217; Neefjes, 2000, p. 53).

But, the "catch" in the stability-diversity thesis is that human beings do not yet understand enough, and perhaps never will, about the exact contribution of each of the intra- and interspecies relationships with their abiotic environment, to be able to predict confidently the consequences of any extensive human intervention (Lemons, 1981, p. 222). Lovelock also warned that "humanity needs to take great care, because of all the unknown factors that influence the Earth's sub-systems: the systems are too complex for the full results of any action to be predicted..." (Neefjes, 2000, p. 20). There is among 'preservationists', "a lack of confidence in our scientific ability to manipulate ecosystems without undermining ... [their] diversity" (Norton, 1986, p. 214). Particularly violent or pervasive alterations might have unforeseen effects (p. 215). By contrast, non-interference, or mild and gradual alterations, tend not to overwhelm the long-term dynamic diversity-stability of the ecosystem, which means it remains healthy, and predictable (pp. 212-213). Thus 'preservationists' advocate that wild species should be preserved from extinction, and ecosystems from alteration, by setting aside areas which "...must be exempted from human management, manipulation, and exploitation" (Norton, 1986, p. 214). This is of course, an element in seeing green's long-range, wide ecological understanding of sustainability (Chapter Eight: 6.4.6).

On Norton's (1986) view then, a 'preservationist' would argue that "A particular ecosystem is stable and healthy if it is operating according to the life processes that created and sustained it. Its mechanisms of competition and natural selection are functioning, and it is changing, maturing, but according to a natural interplay of abiotic and biotic forces." (Norton, 1986, p. 217). Such an ecosystem can also be thought of as approaching, or in, the climax stage of ecological succession, a stage which by comparison to the pioneer stage, "is very unproductive. 'This must be so ... because the

[65] Norton traces this hypothesis to Leopold, whose argument he presents as: "Premise 1: diversity is created and sustained by the ecological and evolutionary struggle of species to exist. Premise 2: intense human use (exploitation) of ecosystems requires management according to an unnatural regimen (the functioning of the system and the mix of species is regulated by the intention to maximize resource outputs, not by the forces of competition and natural selection). Premise 3: over the long term, such manipulation is compatible with protecting biological diversity only if human manipulators act with complete knowledge of ecological relationships (dependencies among species). Premise 4: we lack such knowledge now, and for the forseeable future. Therefore, Premise 5: human management, especially when it alters ecosystems abruptly through technological manipulation, causes loss of biological diversity and alteration of ecosystem functioning over time." (Norton, 1986, pp. 212-213)

[66] Steverson (1994, p. 78) lists the three major types of interaction as predation, competition, and symbiosis

climax is the most stable state possible in the local biotic, abiotic and climactic circumstances' ..." (Goldsmith, quoted in de la Court, 1993, p. 130, in Hayward, 1995, p. 108). Interruption or disruption of an ecosystem's progress towards the climax stage of ecological succession, such as that caused by industrial development, can be argued to be "an anti-evolutionary process" (Hayward, 1995, p. 109).

5.3.3 The "green" implications of differing environmental policies

But there is of course a fundamental opposition in the policies these differing understandings of ecosystem "health" generate: both cannot be applied to the same piece of land. "The progression of a pond into a marsh and eventually to a forest is a favourite example of [preservationist] dynamic stability. *Conservationists are unlikely to use this concept of stability [as "health"]* if, for example, they hope to sustain a fish population in the pond" (Norton, 1986, p. 217, my italics).

Can only 'preservation' environmental policies which are underpinned by non-anthropocentrism, be green? Ecocentrist Leopold seems to suggest so. On his view, those who hold a view of "land as a biota" rather than just land as soil for human commodities, "feel... the stirrings of an ecological conscience" ([1949] 1966, p. 237). "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (Leopold, [1949], 1966, p. 240; Lemons, 1981, pp. 219-230). From this much-interpreted statement, I understand Leopold to mean that a system is "healthy" if it is relatively undisturbed, or human disturbance of it has been slow, gentle, and local, rather than rapid, violent, and wide in scope (Leopold, [1949] 1966, pp. 232-233). Its biotic diversity is relatively high, and human beings guarantee continuance for members of the biotic community, whether or not they possess actual or potential economic value (Leopold, [1949] 1966, pp. 225-230).

But environmental ethicist Norton argues that weak anthropocentrists can just as well support 'preservationist' type environmental policies, *without* getting involved in ontologically questionable, ecocentric, intrinsic views on nature. Anthropocentrists could argue for 'preservationist' policies on grounds such as human interests narrowly conceived [basically, short to medium term; and/or short-term profit maximization], human interests widely conceived, such as preserving genetic diversity for the development of new products for human use, preserving ecosystem functioning for its goods and services, or untouched/nearly untouched nature for its aesthetic and transformative[67] values, and *possibly*, also on non-anthropocentric, intrinsic grounds. But the non-anthropocentric grounds are not *necessary* for 'preservation'-type policies (Norton, 1986, pp. 212-213). Norton's viewpoint is discussed in more detail in section 6.

5.4 "Deconstructive[68]" or "permissive[69]" ecology

Several writers note that earlier views of nature as purposefully tending towards an ecological climax stage of dynamic balance and stability are now "out of fashion"; or "under siege":

> Earlier views of holistic natural communities working in stable associations are being replaced by images of nature as fundamentally erratic, discontinuous, chaotic, and unpredictable. ... However, this perspective is being challenged by some environmental philosophers. (Botzler & Armstrong, 1998a, p. 11, drawing on Worster (1990) and Callicott's (1996) work).
>
> In the early twentieth century ... ecosystems [were interpreted] as teleological entities seeking ever higher stages of ecological succession, culminating in climax. Today this superorganismic view of ecosystems is out of fashion in academic ecology, which has become thoroughly reductionistic and stochastic. Whether

[67] See section 6.3.1 on the role of experience in nature in helping to clarify the value distinction between felt preferences and considered preferences. Norton (1986, p. 217) suggests here that preservationists suppose that "contact with nature builds character and tends to counteract the modern tendency toward materialism and greed"
[68] Callicott's (1996) phrase
[69] Neefjes' term, 2000, p. 54

> this epistemological commitment has more to do with academic ecology's desire for permission to worship in the temple of science than with the intrinsic superiority of the reductionist view remains an open question" (Dryzek, 1990, p. 206).

There is within ecology as science, a school of thought, according to environmental philosopher Callicott (1996), busy deconstructing in post-structural fashion, some of the former "master narratives" of ecology. The concepts "biotic community", and "ecosystem" are "under siege[70]"; the "hallowed 'law' of ecology" that ecosystems tend towards mature, equilibrium states, and that such stability depends on biological diversity, "has been all but repealed" (Callicott, 1996, p. 354, 355). As environmental ethicists – at least those who base their ethics on the insights of scientific ecology[71] – have, or ought to "acquire at least a rudimentary ecological literacy" (Callicott, 1996, p. 368), several authors[72] in *Environmental Ethics* address the basic contentions, environmental ethical, and environmental policy implications of the "equilibrium" vis-a-vis the "disequilibrium" models in scientific ecological thought. In the next paragraph I briefly sketch the fundamentals of the "ecology of instability", or "ecology of chaos" view.

On the "instability" or "chaos" view of nature, the concept of ecosystem [understood as stable biotic community] has become suspect. Biotic communities do not persist as integrated units of interdependent species which come and go as one, populations do not oscillate predictably but fluctuate irregularly, the high correlation between species diversity and stability is questioned [some stable ecosystems are not diverse, and in some cases, disturbance increases diversity]; disturbance, disequilibrium, and flux is nature's normal state; individualism rather than holism is emphasized (Callicott, 1996, pp. 354-355, and 360-361; Hettinger & Throop, 1999, pp. 7-10).

The disequilibrium school of thought is seen as either definitive (Callicott, 1996, p. 361 and footnote 36) or "far from achieving the status of a dominant paradigm" (Hettinger & Throop, 1999, p. 10), depending it seems, on the writer's commitment to the concept diversity-stability, and / or sociological factors (Hettinger & Throop, 1999, p. 10 and footnote 28) – the latter one way perhaps of morally justifying increasing human intervention in nature as population, industrialisation and technology pressures increase?

What implications might "deconstructive" ecology have for "seeing green"? First, the scientific credibility of concepts such as biotic community, integrity, equilibrium, balance, stability, and diversity[73], is crucially important for those philosophers basing their environmental ethic on scientific ecology, and for those seeking to derive environmental policies from them. Ecocentric environmental

[70] An image Callicott takes from Soulé (1995)

[71] Even so, there are widely differing opinions on whether or how scientific ecology can inform such environmental ethics. As examples: J. Baird Callicott has been steadily developing since the early 1980s, a holistic, ecocentric environmental ethic based on Leopold's "land ethic" (Warren & Cheney, 1993, pp. 90-116), and the organic interpretation which he sees can be given to the New Physics and the New Ecology (Callicott, 1986, pp. 301-316). Golley, (1987, pp. 45-55), ecologist, finds that the twin key intuitions of ecocentric deep ecology [Self-realization, and ecological egalitarianism] "coincide with [scientific] ecological understanding" (p. 52). By contrast, environmental philosopher Steverson (1994, pp. 71-88), argues that ecology as science provides only a weak foundation for ecocentrism. Warren and Cheney (1993) refute Callicott's (1986) understanding of ecology, and conclude that the "state of the art" model of ecology, that is, the "hierarchy theory" model is the appropriate one on which to base an environmental ethic. Zabinski (in Warren, 1997, pp. 314-324) refutes their understanding. McShane (2004) comes to the conclusion that while it makes sense to care for ecosystems, that "isn't the same as showing that we all *should* care for them, since on ... my ... analysis, all making sense comes to is not being mistaken. But, of course, not being mistaken in doing certain things isn't the same as being obliged to do them. So more work would have to be done to get the conclusions drawn here to yield anything approaching the kind of moral obligations towards ecosystems that some environmental ethicists would like to see" (McShane, 2004, p. 245)

[72] I found three papers useful to obtain an overview of the conflicting arguments: Steverson (1994), Callicott (1996), and Hettinger and Throop (1999)

[73] Hettinger and Throop (1999, pp. 5-7) provide useful "definitions" of some of these concepts

ethicists such as J. Baird Callicott[74], have for example, felt compelled to review, but not abandon, their ethic in the light of disequilibrium ecology (Mizzoni, 2004, pp. 48-52).

Second, the disequilibrium ecological model problematizes, even rejects, the seeing green normativity of ecology. If disharmony, disturbance and disruption are nature's normal state, then "anything goes". Ecologists Pickett and Ostfeld (cited in Callicott, 1996, p. 371-372), although subscribers in part at least to the new understanding (Callicott, 1996, p. 355, footnote 12; Hettinger & Throop, 1999, p. 8, footnote 16), note that "....the flux of nature is a dangerous metaphor. The metaphor and the underlying ecological paradigm may suggest to the thoughtless and greedy that since flux is a fundamental part of the natural world, any human-caused flux is justifiable..."

This is certainly suggested in Koos Neefjes Oxfam handbook (2000) on sustainable livelihoods, in which he notes that scientific ecology now increasingly describes local and global ecosystems in terms of dynamism, disequilibria, uncertainty, even chaos (Neefjes, 2000, p. 20). In this "permissive ecology" (Neefjes' term, 2000, p. 54, my italics), "...ecologists do not just accept that ecosystems are affected by human use, but assume that shaping them by *human interference is a right*, if not a need ....". He concludes from this that "... *nature no longer sets the standard for what is good*" Neefjes' interpretation does seem to accord with the suggestion that some subscribe to the "deconstructive ecology" view on anthropocentric grounds.

6. The contribution of environmental philosophy

Environmental philosophical/ethical theory represents a *far* less influential input into the environment-development field. Environmental philosophy/ethics began as a new field in philosophy in the 1970s (Chapter Two: 2.5), by which time, economic development/development theory was well–established (Chapter Nine: 4). Environmental ethicist Bryan Norton (1986) notes that "the burgeoning literature of environmental ethics is read mainly by other philosophers, and occasionally by environmental policy analysts, but seldom by environmental activists and managers" (1986, p. 202). This situation was still evident in 2004[75] (From the Editor, *Environmental Ethics*, Spring 2004, Vol 26, Nr 1, p. 4). It is fairly unlikely then, that formal environmental ethical theory forms part of either Namibian bureaucratic or party-political policy-making[76]. But sustainable development discourse does contain implicit value assumptions about the natural environment, which have ethical implications.

In Chapter Two: section 2.5.3, I briefly introduced biocentrism and ecocentrism as theories of value in environmental philosophy. Both recognize nature's value-for-itself as well as its instrumental value for humans. The overall purpose of this section is to equip the reader with an understanding of their theoretical "opposite", anthropocentrism, represented on the right hand of Wissenburg's heuristic, and to recognize its "strong", and "weak" or "moderate", versions when implicitly present in a text. Section

[74] Callicott went so far as to amend Leopold's dictum "A thing is right... etc" to "A thing is right when it tends to disturb the biotic community only at normal spatial and temporal scales. It is wrong when it tends otherwise" (Callicott, 1996, p. 372)

[75] Commenting on the early years of the journal, and the situation in 2004, the Editor wrote: "People in philosophy who were not sympathetic to the field often claimed that the papers were too applied to be considered philosophy ... People in environmental affairs who were unsympathetic argued, to the contrary, that the papers were so theoretical that they had no practical application at all. This controversy, of course, continues even today... Unfortunately, people in philosophy and environmental affairs still have not developed a relationship comparable to that between philosophers and the medical community..." (From the Editor, *Environmental Ethics*, Spring 2004, Vol 26, Nr 1, p. 4).

[76] "From the viewpoint of policy making, there are two obvious reasons why environmental ethics has not penetrated environmental policy formation. The first is that scientific, economic, and legal (and not ethical) discourses are the exclusive languages spoken in the temples of environmental policy making. Each of these technical languages rests on a set of unexamined norms that pretend to be ethically neutral but hide numerous controversial ethical issues ... Ethics simply never comes up in day-to-day environmental decision making. The only priests allowed into the temple of environmental decision making are scientists, engineers, economists, and lawyers... the second reason ... is that most environmental ethics literature is either much too abstract to engage real environmental decisions or completely irrelevant to the kinds of ethical issues that usually come up in environmental controversies ...." (Brown, D.A, 2004, p. 111)

(6.1) introduces varieties of anthropocentrism, before focusing on "strong" and "weak" anthropocentrism, (6.2) presents the main arguments for "weak" anthropocentrism, and (6.3) presents my understanding of environmental ethicist Bryan Norton's version of "weak" anthropocentrism. Section (6.4) considers whether his version of weak anthropocentrism could qualify as "seeing green" rather than merely grey-green.

6.1 Strong and weak anthropocentrism

In the synthesis of seeing green in Chapter Eight: 2.1.1, two formal definitions of anthropocentrism were presented, to which I now add a third, which makes the connection between environmental philosophy, and its real world implications explicit:

> (1) "A stance that limits moral standing to human beings, confines the scope of morality and moral concern to human interests, and regards nothing but human well-being as valuable intrinsically" (Attfield, 2003, p. 188).
>
> (2) "... the philosophical perspective asserting that ethical principles apply to humans only, and that human needs and interests are of highest, and even exclusive, value and importance. Thus, concern for nonhuman entities is limited to those entities having value to humans." (Botzler & Armstrong, 1998b, p. 309).
>
> (3) "By *anthropocentrism* ... [is meant] both the idea that human interests, human goods, and/or human values are the focal point of any *moral evaluation* of environmental *policy*, and the idea that these human interests, goods, and values are the basis of any *justification* of an environmental *ethic*" (Katz, 1999, pp. 377-378, his italics).

Several varieties of anthropocentrism appear in the literature. Wenz (2002) writes of "generic", "egocentric", "racist", "nationalist", "economic", "ethnocentric", and "multicultural" anthropocentrism. I limit this discussion to other authors' differentiations of anthropocentrism into "strong" and "weak" versions, and present two understandings of these: first, Barrett and Grizzle's version (1999, pp. 33-34), and then Botzler and Armstrong's (1998) explanation of Bryan Norton's version (1982, 1984, and 1986).

Barrett and Grizzle's version (1999, pp. 33-34) reads:

> 'Strong' (or 'heavy') anthropocentrists emphasize human dominion over nature and treat the nonhuman environment primarily as a bundle of natural resources to be managed and exploited for maximal human gain. This is the view that is captured in much of natural resource economics. In the strong anthropocentric tradition, the moral value of things is reducible without remainder to the value it creates for human beings, whether through the generation of monetary income through resource exploitation, or of pleasure through amenities use or simply knowledge of the existence of ecosystems in their natural state. In this view, environmental protection is purely a means to the ends of human utility maximization, and thus is not always worth pursuing. The ecosystem has only instrumental value, not intrinsic worth..... (Barrett & Grizzle, 1999, pp. 33-34)
>
> 'Weak' (or 'broad' or 'long-sighted') anthropocentrism, by contrast, focuses not on immediate human gratification so much as on the satisfaction of basic needs for the whole human community, present and future, and maintenance of the ecosystem of which we are a part. ... As in the 'basic human needs' literature in international development, the emphasis falls on ensuring all humans enjoy adequate standards of nutrition, health, shelter, water and sanitation, and education. Somewhat more generally, Sen[77]'s capabilities and freedoms approach captures the essence of this concern to try to provide all persons, across space and time, with the capabilities to choose to (not) satisfy basic human needs. ... Given uncertainty about dynamics and interactions, the weak anthropocentric approach often favours caution with respect to resource exploitation ... sometimes best expressed in the emerging field of ecological economics. Moreover, like ecocentrists and biocentrists, weak anthropocentrists often ascribe intrinsic value to nature. But, where

[77] Sen, 1985

> nonhuman species threaten the satisfaction of basic human needs (e.g. elephants that trample crops, malarial mosquitoes), weak anthropocentrists may oppose environmental protection..." (Barrett &Grizzle, 1999, pp. 33-34)
>
> "The weak anthropocentrist world view is distinct from the strong version in that social activists assert the moral imperative of care for marginalized communities – which might include unrepresented future generations. It also generally rejects the cost-benefit analysis – especially the sort that discounts future costs and benefits – that guides strong anthropocentrist decision-making, and they acknowledge nature's intrinsic value..." (Barrett &Grizzle, 1999, pp. 33-34).

Botzler and Armstrong (1998, pp. 309 - 310) describe Norton's explanation of strong and weak anthropocentrism as:

> Bryan G. Norton, ... argues that two types of anthropocentrism are prevalent in Western society. The first, strong anthropocentrism, is characterized by the notion that nonhuman species and natural objects have value only to the extent that they satisfy a "felt preference". A "felt preference" is any fulfillable human desire – whether or not it is based on thought and reflection. ...
>
> ... The second type, weak anthropocentrism, is distinguished by the affirmation that nonhumans and natural objects can satisfy "considered preferences" as well as "felt preferences". A "considered preference" is a human desire or need that is based on careful deliberation, and is compatible with a rationally adopted world view, incorporating sound metaphysics, scientific theories, aesthetic values, and moral ideals, Thus, weak anthropocentrists value nonhuman entities for more than their use in meeting unreflective human needs: They value them for enriching the human experience.

According to Botzler and Armstrong (1998, p. 310) strong and weak anthropocentrism are not always sharply distinguished; there is a range of positions between the two. As "strong" anthropocentrism is clearly not-green, I focus attention next on "weak" anthropocentrism which can be understood as a grey-green position, some might think, possibly even "pale green".

6.2 Arguments for "weak" or "enlightened" anthropocentrism

"Sophisticated", or "environmentally enlightened anthropocentrism" (Attfield, 2003, p. 43, p. 72) has "several vigorous champions" (Attfield, 2003, p. 42), who argue for it variously on the grounds[78] of (1) the constitutiveness theory or (2), the "motivation" theory, or (3) the "inevitability of anthropocentrism" claim, or (4) the "convergence claim".

6.2.1 The constitutiveness theory

> "The flourishing of many other living things ought to be promoted because they are constitutive of our own [human] flourishing" (John O'Neill's view, 1993, p. 24, in Attfield, 2003, p. 42).

This is an Aristotelian account of human flourishing (Attfield, 2003, p. 67; Davidson, 2000, pp. 32-35). It entails a much broader of view of human well-being than simply satisfying individual preferences. It also includes concern for the development of human capacities, the belief that the individual should be actively involved in collective or community life, and "... promoting the flourishing of other 'individual living things and biological collectives as an end in itself, simply because the flourishing of nonhuman nature is constitutive of human flourishing' ..." (Davidson, 2000, pp. 33-34, citing O'Neill, 1993, p. 24).

Janna Thompson (1990)[79] also argues that natural things and natural processes enhance our lives, in part at least, through the possibilities they provide for our own human spiritual enrichment (Attfield, 2003, p. 66). In David Cooper's view (1995, p. 146, in Attfield, 2003) of normative anthropocentrism,

[78] I take these grounds from Attfield (2003). He does not however list Grey's "inevitability" argument, which I include as background to its rejection by ecofemninist Plumwood (1997, in Warren, 1997, 327-355)
[79] Ecofeminist Val Plumwood (1991a) provides a critique of Thompson's viewpoint

nature's "otherness" provides the backdrop against which human beings can evolve differing cultures, and also the greater perspective that nature's processes "unfold heedless of our often petty concerns". It thus provides a sense of proportion and an antidote to human arrogance (Attfield, 2003, p. 67). This is not unlike Goodin's (1992) green theory of value, briefly introduced in Chapter Seven: 5.2.2. There is no need therefore to locate intrinsic value in nature's entities and processes (Attfield, 2003, p. 66; Thompson, 1990, p. 160); our obligations to other living things derive from our own living a flourishing life (Attfield, 2003, p. 68). Ecofeminist Plumwood (1991a, p. 148) calls this kind of approach, "broadened instrumentalism".

6.2.2 The motivation theory

The motivation theory is underpinned by the constitutiveness theory. It holds that "we should care for and promote natural goods simply because such care is constitutive of a flourishing human life (Attfield, 2003, pp. 197-198). It is suggested that together these anthropocentric theories provide a definition of what constitutes the good human life which is appealing, and also a theory of human motivation sufficient to stir people to environmental action (Attfield, 2003, pp. 65-68). Human flourishing is the only thing that can, and does, underlie human motivation (Attfield, 2003, p. 74).

6.2.3 The inevitability of anthropocentrism claim

Anthropocentrist Grey[80] (1993) critiques non-anthropocentric attempts to ground an environmental ethic in what he calls (1993, p. 463 and p. 464 as examples) "the grand evolutionary biology perspective of our environmental predicament" argument[81]. He suggests that this perspective - that millions of years of our Earth's evolutionary history have gone, and millions more are probably still to come - "provides a *reductio ad absurdum* of the cluster of non-anthropocentric ethics which can be found under the label 'deep ecology'" (p. 463), and other viewpoints. While it may be enriching for us to step out of our time and place-bound human skins and view our environmental dilemma from such a long-term perspective[82], "it is neither relevant nor helpful for human action" (p. 464).

What is wrong with "billion year timeframe[s]", and "galactic spatial perspectives" is that they are "the wrong scale for judgments about importance[83]; and one of the things wrong with them is that they are not recognizably human" (p. 467). And once the scale *is* recognizably human, the ascription or recognition of value to guide human conduct cannot be other than anthropocentric (p. 468). Nor is there any need to apologize for this: "Within the moral world we do occupy a privileged position" (p. 464).

To summarize some of Grey's (1993) arguments: He suggests that calls for a non-anthropocentric ethic are (1) doomed to failure because anthropocentrism is "natural and inevitable" (2) all proposed alternatives to an anthropocentric ethic contain covert anthropocentrism anyway, and (3) unnecessary, because anthropocentrism "turns out to be perfectly benign" (p. 469), provided it is "suitably enriched and enlightened" (p. 466), by which he means, that traditional anthropocentrism's "characteristically short-term, sectional, and self-regarding elements" should be rejected (p. 466). We can only meet non-anthropocentric concerns for the earth's living systems "if we assume a set of values (that is, preference rankings), based on human preferences" (Grey, 1993, p. 473), (4) incongenial. Once we "eschew all human values, interests and preferences" suggests Grey (1993, p. 473), we are confronted with too many alternative ethical possibilities, "not all of which are congenial to us. And that matters."

[80] I present this argument in more detail, because of its critique by ecofeminist Val Plumwood (1997, in Warren et al., 327-355)
[81] Plumwood (1997, in Warren et al., pp. 329-332) calls this the "cosmic" argument
[82] Deep ecologists do call for a long-range time perspective. They are concerned about "the fate of the planet" (Grey, 1993 p. 468) if we don't change our interfering ways. But as yet, I have not encountered a deep ecology demand for the kind of "expansive perspective of evolutionary biology" which Grey calls on to show that deep ecologists' and others' search for a non-anthropocentric ethic is "a hopeless quest" (p. 473)
[83] Grey however (1993, p. 467 and footnote 6) does not support Passmore's (1974) view that our concern for and obligations to the future need stretch no further than our immediate descendants, because "concern can be extended only to what we can recognize and love", a view which he later qualified according to Grey

(p. 473). Human flourishing is just as legitimate a part of rich, diverse, and vibrant biospherical flourishing as nonhuman flourishing (p. 473); (5) implausible. For example, recognizing autonomy, internal self-direction, self-organization, *telos* and the like, as properties in nature conferring intrinsic value[84], would bring with it the "implausible" notion that we have obligations "to respect the equilibrium states of inorganic systems [such as rocks, or mountains decomposing]. It also leaves us with definite conflict of interest problems [the favourite example being the HIV virus's "wish" to fulfil its *telos*, vis-a-vis the human interest to survive] which can only be solved anyway "by appeal to a value system which favours human interests" (p. 471). In short, a properly adjusted anthropocentric ethic provides "a satisfactory ethic of obligation and concern for the nonhuman world", without delivering the confusion (p. 466) which would ensue, were we to follow genuinely non-anthropocentric views.

6.2.4 The convergence claim

On environmental ethicist Bryan Norton's view,

> (i) there is a consensus[85] emerging amongst socio-economists and environmentalists, "on how to treat nature .... based on widespread acceptance of much ecological theory and a common desire to protect nature to some extent, if for different reasons" (Barrett & Grizzle, 1999, p. 23);
> (ii) ethics and policies which serve the interests of human beings, will also serve the interests of nature, as "no long-term human values can be protected without protecting the [evolutionary] context in which they evolved" (Attfield, 2003, p. 42, p. 112, citing Norton, 1991, p. 240), and
> (iii) "…our obligations to future humans generate and support the same policies as those advocated in approaches that recognize intrinsic value in non-human nature [for example, the seeing green nature ethic] and direct obligations towards it, since 'our culture's distant future' is at stake" (Attfield, 2003, p. 42, and pp. 112-115, citing Norton, 1991, p. 241).

Norton states his convergence hypothesis thus:

> The convergence hypothesis, which I have offered as an alternative to the traditionally divisive characterization of environmentalists as split between "shallow", anthropocentric, resource managers and "deep", nonanthropocentric, environmental radicals, states that *provided anthropocentrists consider the full breadth of human values as they unfold into the indefinite future, and provided nonanthropocentrists endorse a consistent and coherent version of the view that nature has intrinsic value, all sides may be able to endorse a common policy direction."* (Norton, 1997, p. 87, his italics).

Norton's convergence claim is based on a "weak" anthropocentric ethic, which is broadly equivalent to what Hayward (1995, p. 59-62, particularly footnote 11) calls an environmental ethic based on an enlightened self-interest [section 3.1.1 above]. I discuss Norton's environmental ethic next.

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[84] Grey lists here, John Rodman (1983, in Sessions, 1995, pp. 121-130), Val Plumwood (1991a, pp. 139-149), and J. Baird Callicott (1989)

[85] Norton's convergence claim is both supported and rejected. Some support is provided by some environmental psychology research. For example, Bjerke and Kaltenborn (1999) note that "...Two philosophical views of the human-environment relation are relevant here. One of them is the ... ecocentric (or biospheric) view, which includes concern for nonhuman objects and ecosystems even if conservation of them involves human sacrifice (Stern & Dietz, 1994; Oksanen, 1997). The second is the anthropocentric view, which holds human needs above other values, and which implies a support for protection of the environment if it satisfies human needs (Gardner & Stern, 1996, Chap. 3). Both views will often be activated in support of the same environmental policy, for example efforts to reduce air pollution, but for very different reasons" (Bjerke & Kaltenborn, 1999, p. 416). But there is also evidence from environmental psychology research to support the hypothesis that "economic beliefs are more fundamental than environmental beliefs and are thus overriding in decisions that involve trade-offs" between the economy and the environment (Hodgkinson & Innes, 2000, p. 293). Axelrod (1994 in Axelrod and Suedfeld, 1995, p. 188) also notes that "Preservation will be paramount only if those charged with harvesting a resource believe that preservation is in their best economic interest. Research suggests that economically-oriented people, when placed in situations of economic-ecological conflict, are likely to pursue immediate economic gain even when it means that significant ecological loss will occur". Environmental ethicist Mikael Stenmark (2002) rejects Norton's convergence theory and shows how anthropocentrism and nonanthropocentrism generate differing environmental policies relating to, as examples, population growth, wilderness preservation, and wildlife management. Many technical-environmental philosophical arguments for and against Norton's viewpoint are also made in the series of papers representing the Norton-Callicott debate in *Environmental Ethics*

6.3 Norton's weak anthropocentric ethic

I concentrate on Bryan G. Norton's version of weak anthropocentrism for several reasons. It is rooted in pragmatism (Katz, 1999, p. 379), an approach often attractive to environmental policy and political decision-makers; it links with the critique of "Homo *economicus*" encountered in seeing green; it calls for strong environmental protection, because it argues that much in non-human nature contributes to human welfare construed widely; and it shares with "seeing green", the view that there must be transformation in human values. However, Norton's weak anthropocentrism does *not* accord intrinsic value to nature, as does Barrett and Grizzle's weak anthropocentrism.

Based on Norton's 1982, 1984, and 1986 papers, I discuss next my understanding of his theory of value (6.3.1), and his ethic (6.3.2).

6.3.1 The theory of value

"Felt preferences" and "considered preferences" are key concepts in Norton's distinction between "strong" and "weak" anthropocentrism. The idea of Homo *economicus* and its related personal ["felt"] preferences as want-satisfaction in mainstream economic theory was introduced briefly in Chapter Eight: 4.3.3.1 and sections 3.1.3 and 3.4.3.2 of this chapter. Norton explains that: "A value theory is strongly anthropocentric if all value countenanced by it is explained by reference to satisfactions of felt preferences of human individuals" (Norton, 1984, p. 134), that is, if nonhuman species and natural objects have value only to the extent that they satisfy *any* fulfillable human desire or need, whether or not it is based on thought and reflection (Botzler & Armstrong, 1998, p. 310). Or phrased the other way around, strong anthropocentrism "takes unquestioned felt preferences of human individuals [such as high consumptive lifestyles, based on an exploitative and extractive use of nature as "a storehouse of raw materials" (Norton, 1984, p. 135)] as determining value" (Norton, 1984, p. 135). Economists often construct "interests" from people's "felt preferences" because these contain no value judgments; are not part of a considered worldview – "decision makers need only ask people what they want, ... compute the preferences satisfied by the various possible courses of action, and let the resulting ordinal ranking imply a decision" (Norton, 1984, p. 134).

Weak anthropocentrism affirms that nonhumans and natural objects can satisfy both "felt preferences", and "considered preferences" [which Norton also calls "ideals" (1984, p. 138)]. "A considered preference is any desire or need that a human individual would express after careful deliberation, including a judgment that the desire or need is consistent with a rationally adopted world view [or worldview adopted on religious grounds, or grounds of spiritual development (1984, p. 136] – a world view which includes fully supported scientific theories and a metaphysical framework interpreting those theories, as well as a set of rationally supported aesthetic and moral ideals." (Norton, 1984, p. 134). Weak anthropocentrists "deny that preference satisfaction is the only measure of human value" (p. 138). They argue that considered preferences act as a limit upon felt preferences (p. 138).

Norton argues that the weak anthropocentric approach provides two crucial resources for environmentalists (1) If the considered worldview "emphasizes the close relationship between the human species and other living species", then environmentalists "can also make a case for ideals of human behavior extolling [maximum] harmony with nature". Such ideals would be critical of purely exploitative relationships with nature (Norton, 1984, p. 135, and pp. 146-147). (2) It makes place for valuing human experiences "that provide the basis for value formation". That is, it recognizes the value formation that is implicit in comparing one's felt preferences with one's considered worldview, and realizing that some of the felt preferences need to be adjusted towards "considered preferences" if they are to be consonant with a rationally-considered worldview. For example, the "... current, largely consumptive attitudes towards nature... do not fit into a rationally defensible worldview" (Hayward, 1995, p. 61, discussing Norton's environmental ethic). Norton gives an example: "To the extent that

environmentalists can show that values are formed and informed by contact with nature [a favourite deep ecology theme, for example], nature takes on value as a teacher of human values. Nature need no longer be seen as a mere satisfier of fixed and often consumptive values – it also becomes an important source of inspiration in value formation" (Norton, 1984, p. 135).

On Norton's view, weak anthropocentrism is an attractive position for environmentalists, and political decision-makers, because it provides a framework within which to develop "powerful" and rationally defensible reasons "for protecting nature" (Norton, 1984, p. 135), without having to adopt "radical, difficult-to-justify claims" of (p. 138), or making "questionable ontological commitments" (p. 148) to, intrinsic value in nature's nonhumans and natural objects.

6.3.2 The "ethic of resource allocation"

Within his weak anthropocentrism, Norton introduces his proposed "ethic of resource allocation" (1984, p. 145), the principles and corresponding moral obligations of which I understand to be:

(a) It is a two-tiered system, comprising an individualist, and a non-individualistic level. This latter is necessary, because on Norton's argument, an individualistic ethic is unsuitable for application to nonhuman nature.

(b) At the individualistic level in present generation time, should conflicts of interest arise over resource allocation, they should be dealt with via the usual rules of distributive fairness, "derived from the principle of no harm [to others]" (1984, pp. 139-140). While Norton does not mention the notion of 'distributive social justice' in the present generation, I assume that he would accommodate it here. **The theory of value at the individual level is "the prima facie equality of felt preferences of individual humans"** (p. 146).

(c) But the weakly anthropocentric environmental ethic cannot be only individualistically-based, that is, it cannot restrict environmental value only to the satisfaction of felt preferences of human individuals (Norton, 1984, p. 141). It must also protect a stable flow of goods and services from the resource base "through indefinite time" (p. 143), to ensure the continuance of "human consciousness" in the universe (p. 143) ["a good thing because a universe containing human consciousness is preferable to one without it" (p. 143)]. This is not at all the same thing as satisfying the felt or considered preferences of present individuals. **At this non-individual level, "the value of ongoing human life and consciousness ... [is the] central value principle** (p. 146).

(d) **"An ethic of resource allocation should apply to nonrenewable resources as well as to renewable ones and should also imply a population policy**" (Norton, 1984, p. 145). I describe Norton's resource allocation ethic in (e) and (f), and consider here his population policy, which he describes as

> ...the level of population in any given generation should be determined by the requirements for the stability of the resource flow. Such a determination would be based on an assessment of (a) how many people are consistent with the maximal sustainable yield of renewable resources and (b) how many people are consistent with a level of use for nonrenewable resources which does not outstrip the ability of the existing technology to produce sustainable substitutes. A population principle follows, in turn, from this stability principle. One need not identify future individuals or worry about utilities of possible individuals on this approach. The obligation is to maintain maximum sustainable yield consistent with the stability of the resource flow. The population principle sets a population policy for a generation as a whole based on the carrying capacity of the environment. Questions about who, in a given generation, should have children and how many each individual can have, may be treated as questions of interpersonal equity among the existing individuals of any

given generation (Norton, 1984, pp. 145-146).

(e) **"[Maintaining the stability of the resource base across generations] implies that, with respect to renewable, or interest-bearing resources, present generations should not harvest more than the maximum sustainable yield of the resource."** (Norton, 1984, p. 145)

Norton's notion of 'stability' here is not the same thing as the normative value ascribed to ecological stability in seeing green: "It is an open (and controversial) question as to what stability of ecosystems means" (Norton, 1984, p. 144). Further, there are controversies concerning the extent to which there are scientifically supportable generalizations about what is necessary to protect ecological stability. For example, he argues that it is highly controversial whether diversity, in general, promotes and/or is necessary for ecological stability. These controversies are too complex to enter into here, but they are relevant. [Norton discusses the concept of ecosystem stability in more detail in his 1986 article, and relates it to ideas of resilience vis-a-vis predictability of ecosystems, which I briefly introduced in section 5.3.1 above.]

To ensure that present generations do not harvest more than the maximum sustainable yield of any renewable resource, requires that (1) models for sustaining maximal yield of productive systems as well as management regimes are in place (Norton, 1986, footnote 22, p. 200), and (2) **"To the extent that scientists know what is necessary to protect the resource base, there is an obligation to act upon it. Further, there is an obligation, where knowledge is lacking, to seek that knowledge in order to avoid unintentional destruction...."** (Norton, 1984, pp. 144-145).

(f) What does 'stability' imply with respect to nonrenewable resources? It does not imply in Norton's view, no utilization. Maintaining the possibility of human consciousness in the universe requires resource use; so there must also be "a constant supply of resources available for utilization by succeeding generations" (Norton, 1984, p. 145); a stable resource base must be maintained "through indefinite time" (1984, p. 146). The relevant ethical principle and obligation is: **"Present humans may use up nonrenewable resources, provided they take steps to provide suitable substitutes"** (Norton, 1984, p. 145), utilizing science and technology. "If, for example, the present generation uses up a major portion of the accumulated fossil fuels available, they will have done nothing wrong if they leave the next generation with a technology capable of deriving energy from renewable resources such as the sun, wind, or ocean currents. There are significant trade-offs available back and forth between renewable and non-renewable resources." (Norton, 1984, p. 145).

Depletion schedules for nonrenewable resources would need to be drawn up, and management regimes put into place (Norton, 1986, p. 200, footnote 22).

(g) Norton (1984) recognizes that the ethical obligations constituting his "ethic of allocation", other than requiring "actions necessary to retain a stable resource base through indefinite time" (p. 146) do not specifically state what to do. But in principle, as suggested in (e) above, scientific evidence and knowledge[86] can indicate the actions necessary to fulfil the obligation. Where scientific knowledge "is insufficient to decide whether and how certain practices are destructive ... **the obligation is to be cautious and to proceed to obtain the information necessary."** (Norton, 1984, p. 146).

[86] But he notes that even what scientists already know, for example, that clearcutting tropical forests on steep slopes causes disastrous erosion or that "intense tilling monocultures" causes loss of topsoil, is "systematically ignored" in environmental policy (Norton, 1984, p. 145)

6.4 Could weak anthropocentrism at all qualify as "seeing green"?

Many of the values of weak anthropocentrism, as described at least by Barrett and Grizzle, are green-sounding (section 6.1). Yet a practically universal theme in the sample elements of seeing green is a critique of anthropocentrism [or hierarchy, or androcentrism, Chapter Eight: 2.1.1]. Even the weak anthropocentrism based on the constitutiveness approach, ecofeminist Plumwood (1991a, p. 148) has called, "broadened instrumentalism", and instrumental-only positions towards nature are categorically rejected in seeing green (Chapter Eight: 6.3.3.4).

Norton's position does seem different from an entirely grey-green perspective. But is it "green"? Yes and no, but ultimately no, I suggest. Yes, many of its values are "green", and its environmental policies are far more protective than those normally associated with instrumental anthropocentrism. But based on the kind of critique already encountered in seeing green, there are some other aspects of Norton's weak anthropocentric view which I would like to problematize:

a. What Norton's weak anthropocentrism values above all in the universe, is "ongoing human consciousness". This value enables Norton to advocate strong environmental protection without "questionable ontological commitments" (1984, p. 148), referring to the nonanthropocentrist belief in nature's having its own interests and autonomy in achieving them, thus, having value-for-itself [Chapter Eight: 5.3]. While Norton's sidestepping of the intrinsic value question might be a pragmatic approach as far as environmental policy is concerned, part of the green critique of anthropocentrism is just its critique of dominant western cultural ontological assumptions on nature, and the human-nature relationship [Chapter Eight: 5.2.1]. But Norton remains committed to anthropocentrism, with its ontological assumptions of a human-nature divide, an assumption rejected in seeing green (Chapter Eight: 4.2.1), and particularly in the sample element deep ecology, with its insistence on biological egalitarianism. Even Arne Naess, ultra-tolerant of a diversity of ultimate premises to guide ecologically-sensitive policies and practices, requires some kind of "wide identification" with nature (Glasser, 1997, pp. 82-84), presumably as a move towards dissolving the human-nature divide which Norton's weak anthropocentrism appears to keep intact.
b. Nor does the green critique of homocentric ontology centre only around its failure to recognize nature's value-for-itself; it also problematizes the standard western view of the human being. For example, ecofeminist Plumwood suggests that even the kind of broadened instrumentalism which Norton's ethic represents [it could encompass spiritual values, for example], "... should be rejected ... [because] such an approach misses out on the challenge to the framework of human domination *and the revision of the concept of the human self*. Instrumentalism is part of the account of the self as disconnected and egoistic, having no non-accidental or defining relations to others and treating others – whether human or nonhuman – as no more than means to its independently conceived ends. The strategy of accommodating environmental concerns through a broadening of instrumentalism results from a failure to critique these framework conceptions of self and human identity." (Plumwood, 1991a, p. 148, my italics). Green thought characteristically provides such a critique (Chapter Eight: 4.2 and 4.3).
c. Norton refers to nature in material, economic metaphors: resources, goods, services, flows.... devoid of any spiritual principle, or principle of purposive self-organization. This does sound rather like Regan's (1981) identification of a management ethic, an ethic *for the use* of the environment, and not a genuine environmental ethic: an ethic *of* the environment (Regan, 1981). One cannot help but note that Norton's resource allocation ethic tends to support western liberal capitalist reform environmentalism, consistently critiqued in the green perspective. No arguments are presented for a fundamental restructuring of society along normative ecological lines, as is the case in seeing green. In support of my view here, Hayward (1995, p. 62, my italics) writes that "Moderately anthropocentric environmentalism *would issue in a gradualist, or*

reformist, strategy whose aim is to heighten awareness that it serves no one's interest to (over-) exploit natural resources or treat other beings cruelly or inhumanely...".

d. Norton argues that Leopold [Chapter Two: 2.5.2(d)] was a nonanthropocentrist but used anthropocentric arguments to advance his case. Should modern intrinsic value environmentalists wish to follow the same pragmatic route in order to advance the protection of more nature through environmental policy, they could, Norton suggests. This is a theme that others examine too (for example, Nees, Green, Treadway, et al., 2003, p. 295; Stenmark, 2002, p. 135). However, this approach while possibly pragmatic, is non-green, in that [dark] greens advocate that means must match ends. As example, Petra Kelly's insistence on the unacceptability of violent protest to achieve peace (Chapter Eight: 6.4, 6.4.3.1).
e. Norton's weak anthropocentrism, as set out in his 1982, 1984, and 1986 papers at least, fails to address the issue of animal welfare. The anthropocentric-instrumental mechanization of animals in industrial agriculture, or their instrumental use in scientific experimentation and product-testing is not problematized, as it is in seeing green.

There is no objective way, I suppose, to determine whether or not Norton's weak anthropocentrism should be categorically excluded from seeing green. Its proposed environmental *policies* sound green. But, I would argue, its *ultimate premise* that ecological processes should be preserved to ensure "ongoing human consciousness" does not. On a green view, other "consciousnesses" also have [to varying degrees, depending on which green sample element one selects] a legitimate interest in the preservation of their own ongoing consciousness, independent of that of human beings. A personal final decision would depend on one's acceptance or rejection of two of seeing green's ultimate premises, that is, that nature has value-for-itself, and that it is our wrong human-nature relationship which is the root cause of the environmental crisis.

By contrast, classifying the anthropocentrism of mainstream sustainable development as mostly grey-green does appear easier. Achterberg (1993, pp. 84-86, cited in section 3.4.1.5 of this chapter) considers the WECD's perspective that human-produced capital and natural capital are interchangeable as a "disputable perspective, quite apart from the extremely anthropocentric attitude which is expressed by such a view...". Dobson (1999, Ch.2, in Attfield, 2003, p. 136) argues that The World Commission on Environment and Development [WECD] construes nature anthropocentrically as a stock of goods and services indispensable for human survival. Attfield (2003, p. 136, and footnote 38 on p. 155) however, considers this view controversial. He notes that on p. 57 of the WECD report, there is an explicit recognition of the intrinsic value of nature. Despite this example of green thought, I have suggested in section 3.4.1.5 of this chapter, that the WECD could be considered to follow the weakest possible version of environmental sustainability. I also suggest (section 7.3 of this chapter) that its conservation and stewardship ethic appear largely anthropocentric. Various interpretations of sustainable development are available, which can be broadly grouped into more conservative, or more radical versions. These are discussed next.

7. Sustainable development

Though the WECD (Brundtland) report spelt out "core issues" in sustainable development, and necessary conditions[87] for achieving it, the precise meaning of sustainable development remains unclear, debated, and contested – dozens, hundreds, of interpretations exist (Achterberg, 1993, pp. 84-

[87] The WCED identified as "core issues" for sustainable development, "Population and development; Food security; Species and ecosystems; Energy; Industry; The urban challenge." "Necessary conditions for sustainable development are "A political system that secures effective citizen participation in decision-making; An economic system that provides for solutions for the tensions arising from disharmonious development; A production system that respects the obligation to preserve the ecological base for development; A technological system that fosters sustainable patterns of trade and finance; An international system that fosters sustainable patterns of trade and finance; An administrative system that is flexible and has the capacity for self-correction" (Elliott, 1994, Figure 1.2 "Core issues and necessary conditions for sustainable development as identified by the World Commission on Environment and Development, p. 4, citing from WECD (1987))

87; Bramwell, 1994, p. 141, Hayward, 1995, p. 97, Neefjes, 2000, p. 44). There appears to be agreement that it is concerned with both aggregative [what is the good life, the good society?] and distributive [who gets what[88], when, and how?] issues, and revolves around the concepts of environmental protection, equitable access to current resources, and intergenerational allocation of resources: "environment, equity and futurity" (Hayward, 1995, p. 97). But sustainable development represents "a conceptual compromise" in the environment-development debate (Achterberg, 1996, p. 171; this chapter, section 2.2). It is an ideological issue (Hattingh, 2002, p. 5, pp. 14-15), and therefore a politically-contestable issue (Davidson, 2000, p. 28). Any particular version presented in a text should be assessed to determine whether or not it tends towards economic growth/market-based versions (7.1), or perhaps "stronger" or "weaker" versions (7.2). In section (7.3), the "new ethic of conservation and stewardship" is presented.

7.1 Ecology-based, and free-market based development paradigms

Elliott (1994, pp. 107-112), writing about development paradigms after the effects of the Ecological Revolution, notes three contrasting approaches to environment and development in the sustainable development debate: the "market-based", the "neo-Marxist" [not discussed here], and the "ecology-centered" paradigms, which she traces back to the differing histories and theories of development and of "environmentalism".

On her view –

> The starting point for proponents of the ecology-centered approach is that economic growth and environmental conservation are contradictory. They are anti-growth and advocate a steady-state economy and the distribution of resources more equitably. This approach therefore has a conception of sustainable development which is in opposition to that of the WECD which believes that technical solutions to environmental degradation can be found through economic growth. The two are, however, in agreement concerning the role of local participation and action as the practical basis for tackling many environment and development problems in the developing world.

Two examples of this seeing-green, ecology-based type of sustainable development would be Goldsmith's (1972) *A Blueprint for survival,* and Porritt's (1984) green paradigm society, both discussed in Chapter Four: 6.1.

By contrast,

> The market-based approach to development and the environment starts from the principle that growth and technical advancement in a free-market economy are the keys to sustainable development in the future. Success is seen to depend on sufficient political will and the ability to place a market value on the environment and the economic functions that it enables. Proponents of this approach therefore tend to show greater support for the recommendations of the WCED than those of the ecology-centered approach. It is suggested that, through modification of established economic formulae and techniques such as cost-benefit analysis, it is possible to put a correct value on the environment and ensure that the next generations inherit environmental assets which are not less than (although perhaps different from[89]) those which the current population enjoys.

Collins and Barkdull (1995, p. 227) also suggest that free-market development and increased concern for environmental protection are in conflict. Free market advocates might no longer be supporters of unchecked industrialism, but "they still rely on such stratagems as rephrasing environmental problems as economic opportunities (recycling), emphasizing the need to clarify property rights[90], encouraging

[88] The "what" Hayward (1995, pp. 98-100) more or less equates with the question of environmental sustainability, discussed in section 3.4.1
[89] This appears to be a reference to whether or not one subscribes to the "weaker" or "stronger" version of sustainability as ethic
[90] "The Brundtland Report calls for securing property rights (in particular land rights) as a key issue on the road to sustainable development,

voluntary improvements in personal and corporate behavior, and tinkering with economic incentive systems (such as trading pollution credits)" (1995, p. 228). The best way to address the tension, they suggest, is for government to intervene via stakeholder "mediating structures" which are "(1) funded by government rather than private sources, (2) independent of government, (3) democratically controlled, (4) accountable, (5) impartial, and (6) authorized to impose just and fair decisions on affected parties" (p. 240).

There are also stronger/radical and weaker/conservative versions of sustainable development.

7.2 "Stronger/radical" and "weaker/conservative" sustainable development models

When the Brundtland Report definition of sustainable development – "... development that meets the needs of the present without limiting the ability of future generations to meet their own needs" (WCED, 1987, p. 43, cited in Bramwell, 1994, pp. 141-142) - is presented unproblematically as it so often is, it not only masks (i) the many inexplicit assumptions in the key concepts of the disciplinary fields which are its academic home, (ii) the differing ideologies represented by differing versions – Hattingh (2002) for example, discerns four ideologically differing versions - but also, (iii) the existence of more, or less, radical versions (Attfield, 2003, pp. 129-130, p. 137). Three examples will suffice to substantiate this.

7.2.1 Jacob's (1995) conservative to radical model

Jacobs' conservative to radical model features in several discussions of sustainable development (Attfield, 2003, pp. 126-132; Davidson, 2000, pp. 28-31; Hattingh, 2002, pp. 14 to 15 and footnote 16 on p. 16). Jacobs' argument is that while "the objective of sustainability has been generally accepted by radical greens, technocrats, and capitalists alike" (Davidson, 2000, p. 28), there is debate about how it should be interpreted, and implemented. He has identified four "faultlines of contestation". Davidson (2000, p. 29, Table 1) has usefully adapted his discussion (Jacobs, 1995, pp. 4-5) to table form, shown next.

Figure 7: Conservative and radical understanding of sustainable development.

Fault Lines of Contestation	Conservative Sustainable Development	Radical Sustainable Development
Degree of Environmental Protection	"Weak" Permits trade-offs between economic growth and protection	"Strong" Acknowledges intrinsic values in natural environment
Equity (intragenerational and intergenerational)	Nonegalitarian Accepts limited global redistribtuion	Egalitarian Recognizes global maldistribution of wealth and responsibilities to future generations
Participation	"Top-down" Participation is limited to implementation stage Of instrumental value only	"Bottom-up" Directed to both objective-setting and policy-implementation Of intrinsic value
Breadth of Subject Area	Narrow interpretation Restricted to the maintenance of the resource base	Broad interpretation Includes both the maintenance of environmental integrity and sound human development—"quality of life issues"

TABLE 1. Sustainable Development: Alternative Interpretations.

which is possibly one of the least criticized recommendations it made" (Neefjes, 2000, p. 53)

Between them, Attfield (2003, pp. 126-132), Davidson (2000, pp. 28-31), and Hattingh (2002, pp. 14-15), explain Jacobs' (1995) models as meaning:

> (a) Differing degrees of environmental protection. Hattingh (2002, pp. 14-15) suggests that this 'faultline' represents an ideological answer to the fundamental value question "What is so important that we should strive to maintain it forever? Is it expansion in material growth; consumption; survival; needs satisfaction; quality of life; the flourishing of life on earth; the diversity and abundance of life on earth; or the ecological basis of life in general?" Differing answers lead to differing degrees of environmental protection. These can vary from the 'weak' ... position that the benefits of environmental protection have to be balanced or traded off against those of economic growth, that is, *environmental conservation*, while the 'strong' version holds that economic activity is subject to *environmental limits*. The latter is based on the notions of "carrying capacity[91]" and "maximum sustainable yield" (Attfield, 2003). The degree of environmental protection itself can vary from notions such as the precautionary principle [itself available in stronger and weaker forms; the 1992 Earth Summit Rio Declaration containing the weaker version (Attfield, 2003, pp. 144-146)], to the carrying capacity of ecosystems, or to the idea of intrinsic value in nature.
>
> (b) Differing interpretations of equity. Hattingh (2002, pp. 14-15) sees this 'faultline' as ideologically differing answers to the fundamental value question "With a view to whom or what should we pursue the sustainability of this valuable something? Do we do it for the sake of nature, or the sake of people; do we do it for the sake of the rich or that of the poor; or for the sake of the whole of the community of life?" Davidson (2000, p. 30) explains equity more narrowly as involving "a commitment to ensure the basic needs of those living now and in the future". She notes a tension between North and South interpretations of equity, the South emphasizing egalitarian redistribution of global resources, and the North tending to resist this interpretation "because of ... [its] fundamental challenge to levels of production and consumption and established patterns of global economic relations" (p. 30). The North is accused of adopting more "environmental" than "developmental" interpretations of sustainable development, and failing to confront the fundamental limits and contradictions of the "growth paradigm" (p. 30).
>
> (c) Differing versions of participation. Again, Hattingh (2002, p. 15) provides a useful fundamental value context for the answers to this question: "How should we pursue sustainability? From a centralised position in a top-down manner with experts and science and technology; from a participative position in a bottom-up manner in which consensus, as well as indigenous and cultural knowledge systems, plays a large role; or with a combination of these approaches as circumstances and context dictate?"
>
> On Davidson's view,
>
> > The "top-down" version ... is that favored by most governments, because, by limiting participation to major stakeholders, including business, local government, interest groups and other nongovernment organizations, they can retain control of the sustainable development agenda. It is a technocratic strategy in that objectives are set by governments using experts, with public participation limited to the implementation stage of policy formulation ... reform strategies are more likely to be concerned with issues such as waste reduction, recycling, and energy conservation. By contrast, the 'bottom-up' approach involves public participation in both the setting of objectives and implementation, since participation is held to be a good in itself – that is, it has intrinsic value. For managerialists,

[91] Goodland and Ledec (1998, footnote 2, pp. 561-562) define carrying capacity as "the maximum number of a given species that can be supported indefinitely by a particular habitat, allowing for seasonal and random change, without any degradation of the natural resource base that would diminish the maximum population in the future. Carrying capacity is analogous to the sustainable rate of harvest and is in turn dependent on the size of the resource stock"

participation has extrinsic value; it is a means to implement sustainable development. (Davidson, 2000, pp. 30-31)

(d) Differing interpretations of the subject area covered by the concept of sustainable development. Here Hattingh's (2002, p. 15) fundamental value question to which differing answers may be provided, is: "How would we know that we have moved nearer to or further away from sustainable development? Do we make use of financial indicators alone; do we use wider and more comprehensive economic indicators to assess costs and benefits; do we use indicators from social and political life...; do we use indicators from nature - for example the behaviour of indicator species ...; or do we combine all of the above? And exactly how do we determine the threshold values that should apply to any set of indicators..., and whether they are exceeded or not?"

On Davidson's view, the "broader understanding [of sustainable development] flows from the notion that environmental protection is not possible without sound human development, a development which is not synonymous with income growth." (Davidson, 2000, p. 31). Quality of life criteria are extended to include "not just environmental quality but also basic human needs for self-fulfilment, equal opportunity, and access to education and information, participation, protection of local and indigenous culture, and human-scale development..." (p. 31). The broader understanding includes social restructuring, if needed, to address poverty, and improvement in quality of life (Attfield, 2003, p. 131).

Davidson (2000) devotes much of her paper on sustainable development to arriving at a fuller understanding of "sound human development", during which she inter alia, embraces O'Neill's (1993) re-interpretation of Aristotelian human well-being in an ecological light, and Goulet's (1991) ecological wisdom in development ethics. She concludes that "sustainable development must ensure sound human flourishing, by furnishing those goods which ensure human autonomy (survival, opportunities for participation, and a good life); second, it must preserve and foster forms of community well-being, which ensure connection with past and future time perspectives; and third, it must preserve and foster ecosystem viability. Sound human development consistent with ecosystem viability *is really only possible with the radical interpretation of sustainable development*" (Davidson, 2000, p. 40, my italics).

7.2.2 Goodland and Ledec's (1998) five principles model

While Goodland and Ledec (1998) are clear that a "... primary goal of sustainable development is to achieve a reasonable (however defined) and equitably distributed level of economic well-being that can be perpetuated continually for many generations" (1998, p. 559), they present what I see as a "stronger[92]" version of sustainable development. Their version depends on an understanding of sustainability which "implies a transition away from economic growth based on depletion of non-renewable resource stocks and toward progress (i.e. improvement in the quality of life) based more on renewable resources over the long run" (p. 559). Their sustainable development model is based on five principles:

1. Sustainable development should seek to optimize between, and not maximize any one of the three categories of human well-being (a) economic efficiency (b) equitable distribution of economic resources [several future generations can be implied in this too, based on their discussions of "Irreversibility and preservation of future options" and "Discount rate" (pp. 557-559)], and (c) non-economic values such as human dignity and pride, civil liberties, aesthetics, religious and spiritual concerns (p. 559)

[92] Based on their strong support of intergenerational equity in allocation of natural resources

2. It is prudent to assume that future generations' need for natural resources (soil, air, water, forests, fisheries, plant and animal species, energy, minerals) "will not be markedly less than ours" (p. 560). Therefore, sustainable development implies using renewable natural resources in a way which does not deplete them [they must be harvested on a sustained yield basis], degrade them, "or otherwise diminish their usefulness for future generations" (p. 560)

3. Non-renewable resources must also be used in a way which "does not unnecessarily preclude easy access to them by future generations" (p. 560). That is, used natural resources must be systematically recycled, not dumped as waste "in a dispersed manner" (p. 560)

4. Sustainable development implies depleting non-renewable energy resources "at a slow enough rate so as to ensure the high probability of an orderly societal transition to renewable energy sources" (p. 560)

5. In the case of agricultural "or other biologically-based projects", even if the crop pays for the costs of imported inputs such as energy and nutrients (e.g. diesel, biocides, fertilizers), "sustainability implies the permanent maintenance of biological productivity on the site", it should not be damaged for example, by soil compaction or decrease in organic matter (p. 560).

7.2.3 Barrett and Grizzle's (1999) holistic model

Barrett and Grizzle, (1999, p. 25), in their holistic approach to sustainability, also tend toward what I see[93] as a "stronger" version of sustainable development:

> The common denominator beneath any serious definition of sustainable development includes (1) the maintenance of ecological conditions necessary to maintain an ecosystem supportive of human life, and (2) some notion of intergenerational equity, i.e. that current generations cannot expend so much natural capital as to leave future generations predictably worse off than contemporary folk. For many people, including us, sustainable development is somewhat more expansive, also depending upon (3) achievement and maintenance of social cohesion among humans, based on mutual respect, care and justice, to maintain a social system supportive of human life, and (4) safeguards to protect the intrinsic value and associated collective biotic rights of extrahuman creation. (1999, p. 25).

Based on just these three examples, it appears that some indicators of a "stronger" version of sustainable development would be (1) sensible or even strong environmental sustainability (sections 3.4.1.4, 3.4.1.3). There should at least be recognition to some degree, of nature as possessing intrinsic value (Chapter Two: 2.5.3), (2) intra-generational egalitarianism in environmental goods and bads (section 3.4.3.4, 3.4.3.5). There should be, if not deep ecology-type egalitarianism for the whole community of life, concern at least, for nature's future interests (3) valuing of the notion of "community", and a bottom-up community participation approach in development planning (section 4.2.2), (4) social restructuring (not dealt with in this chapter, but see Chapter Eight: 6.2).

The new vision of morality/the good life in sustainable development discourse as sustainability, is matched by a "new ethic of conservation and stewardship", discussed next.

7.3 " ...a new ethic of conservation and stewardship"

As example, the Millennium Declaration, under section IV **Protecting our common environment,** contains the following three clauses:

21. We must spare no effort to free all of humanity, and above all our children and grandchildren, from the

[93] Based on their allocation of intrinsic value to nature

threat of living on a planet irredeemably spoilt by human activities, and whose resources would no longer be sufficient for their needs.

22. We reaffirm our support for the principles of sustainable development, including those set out in Agenda 21, [footnote 7] agreed upon at the United Nations Conference on Environment and Development.

23. We resolve therefore to adopt in all our environmental actions **a new ethic of conservation and stewardship** and, as first steps, we resolve:

- To ...[94] (United Nations General Assembly A/Res/55/2 18 September 2000).

7.3.1 Conservation

Conservation as ethic is symbolized by influential USA forester Gifford Pinchot (Chapter Two: 2.2.1.2, and 2.5.1.4), whose understanding of it was "the best use of all we have for the greatest good of the greatest number for the longest time" (Pinchot, 1914, pp. 23-25, cited in Desjardins, 1993, pp. 47-48). Its philosophical context is utilitarianism: "Pinchot's conservation movement fits squarely within the utilitarian tradition" (Desjardins, 1993, p. 48), that is, of maximizing public utility by maximally satisfying individual preferences (wants) (p. 51), motivated by rational self-interest (p. 52). Profit is the evidence that market processes are satisfying individual preference demand (p. 52). However, Pinchot's resource conservation approach specifically included future generations.

In Rodman's view, the "resource conservation" form of ecological consciousness, also called the "RCD [resource conservation and development] scientific management of Nature" approach (Devall & Sessions, 1984, p. 301), is not a suitable starting point for "a general environmental ethic" for at least three reasons. First, because its "ethic of 'wise use' remained within the worldview of anthropocentric utilitarianism", which assumes that the value of the non-human biotic/abiotic world is limited to its instrumental value to humans. Second, its assumption that only the human world possesses intrinsic value, and that the non-human world possesses only instrumental value, is arbitrary because (a) it is not necessary[95] - not all world cultures have made this assumption and (b) it is not justified, because no one has yet succeeded in identifying that "essence" or "observable, morally relevant quality" which at the same time categorically includes humans yet excludes non-humans (Rodman, 1983, in Sessions, 1995, p. 122). Lastly, implementing fully its viewpoint that most things natural have some human use, implies a potential "total-use scenario" which would leave little in its natural [un-used and therefore wasted] condition. "Given the arbitrariness of the first principle, the second amounts to an unjustifiable species imperialism" (Rodman, 1983, in Sessions, 1995, p. 123).

7.3.2 Stewardship

"The logic of the term *steward*' says Gunn (1983, p. 152, his italics) "is three-place: X is steward for Y over Z...". This logic comes in two versions: the religious version (7.3.2.1), in which human beings are stewards for God or a higher Being/Beings over the planet, and the secular version (7.3.2.2) in which human beings are steward for future human generations over the planet. In both versions of environmental stewardship as new human-nature relationship, the key ideas are (1) humans do not own the Earth, they hold it as a trust, a "common heritage" (2) they are responsible for its care, and (3) they are also answerable as to how they perform their role as stewards and trustees (Attfield, 2003, p. 21, p. 169).

Both versions of environmental stewardship are unavoidably hierarchical and arguably anthropocentric. Stewards are not equal beings among equal beings, but beings who, while answerable

[94] This clause goes on to refer to the full implementation of the Kyoto Protocol, the sustainable development of forests, the Convention on Biological Diversity, the Convention to Combat Desertification, the unsustainable exploitation of water resources, ameliorating the effects of natural and manmade disaster, and the human genome sequence

[95] A lay interpretation of the philosophical concept "necessary" would be that the second thing *must* flow from the first thing – reaching a final in a sporting event is necessary but not sufficient for wining the final…

elsewhere, are nevertheless *superior* to those over whom they have stewardship (Gunn, 1983, pp. 149-151). Think by contrast of the notions of "biological egalitarianism", "complementarity" and "partnership" encountered in "seeing green"'s human-nature relationship.

7.3.2.1 Western Christianity religious versions

In the western Christian understanding of stewardship, "God has entrusted the care of the nonhuman world to humans, and has given us the power to control it and the ability to make moral choices" (Gunn, 1983, p. 152). Gunn does not mean though, the "dominion[99]" interpretation of stewardship based on "teleological anthropocentrism[100]", and controversially condemned[101] by White (1967) as the root cause of the ecological crisis. Attfield argues that Christian stewardship rejects teleological anthropocentrism, and is a "coherent … interpretation" of the Bible's central beliefs, which place a "high value" on the natural world with which humans are entrusted, a trust which calls for "human responsibility and answerability" (2003, p. 36). On his view (1991, chapter 3; 1999, chapter 3; and 2003, opening section of chapter 2), to call Christian environmental stewardship anthropocentric, is controversial.

McDaniel (1994) argues that as Christians, we must confess that we *do* tend to feel separated from the rest of creation, that we "partake of 'anthropocentric consciousness'" (p. 80). And we must accept that as human beings, "we are doomed to dominion" – there is simply no way that six billion humans – projected by United Nations estimates to be 11 billion by the end of the 21st century – can live on earth "without exercising inordinate rule over other creatures and their habitats, if only to meet basic needs for food and shelter. To meet these needs, much manipulation will be required, for good or ill" (McDaniel, 1994, p. 75, p. 74). He suggests that in exercising our inevitable dominion, we need an image of "right dominion[102]" (p. 75), and he sees this in terms of dominion-as-stewardship. Stewardship remains potentially problematic though, because "The idea easily lends itself to attitudes of separation from the rest of creation. If dominion-as-stewardship is to be affirmed, emphasis must be placed on the fact that the stewards themselves are creatures among creatures, human nodes in the broader web of life" (McDaniel, 1994, p. 74). Stewardship must be exercised with a "compassion that mirrors God's own" (p. 74). "Right dominion" - compassionate stewardship - implies "kindly use in a spirit of respect", "minimum abuse of domesticated animals and minimum impact on wildlife and habitats". It invites us to maximise the quality, not quantity, of human life, and to develop societies which are both just and ecologically sustainable (p. 75).

Where White (1967) argued for St Francis's "reverential egalitarianism[103]," (Attfield, 2003, p. 33) as alternative to the "dominion" model, scientist Rene Dubos[104] (Sessions, 1995g, p. 298) called in the 1970s for a modern-day version of stewardship located in the Benedictine stewardship tradition. On his interpretation, this tradition sought not only to protect nature against human misbehaviour, but also to

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[96] A "low profile life style ... seems appropriate to one who is charged with taking care of God's good world. The Bible is not very specific about this, but certainly the deliberate (or careless) extermination of species, the poisoning of lakes, rivers, and air, the destruction of soil fertility and land stability seem *quite incompatible* with a recognition of our stewardship over God's creation" (Gunn, 1983, p. 152, his italics)
[97] "the belief that the whole of creation exists for the sake of humanity" (Attfield, 2003, p. 31)
[98] The controversy around the Western Christian dominion interpretation of the human-nature relationship, is mentioned briefly in Chapter Two: 2.3.1(c)
[99] A "low profile life style ... seems appropriate to one who is charged with taking care of God's good world. The Bible is not very specific about this, but certainly the deliberate (or careless) extermination of species, the poisoning of lakes, rivers, and air, the destruction of soil fertility and land stability seem *quite incompatible* with a recognition of our stewardship over God's creation" (Gunn, 1983, p. 152, his italics)
[100] "the belief that the whole of creation exists for the sake of humanity" (Attfield, 2003, p. 31)
[101] The controversy around the Western Christian dominion interpretation of the human-nature relationship, is mentioned briefly in Chapter Two: 2.3.1(c)
[102] He suggests that the Christian peace traditions' lifestyles [Mennonites, Hutterites, Quakers] provide examples of authentic human rule – non-violence towards people, the animals, and the earth (footnote 9, on pp. 81-82)
[103] Favoured by deep ecologists. Fundi Green Rudolf Bahro also considered the Franciscan-Christian human-nature ethic as an 'alternative' to the Christian dominion tradition (Bramwell, 1989, p. 25).
[104] Who coined the slogan "Think globally, act locally" (Attfield, 2003, p. 5 and note 9, p. 26)

develop human activities "which favour a creative and harmonious relationship between man and nature" (Attfield 2003, pp. 33-34, citing Dubos, 1974, pp. 130-131). Reverence for nature is not enough, Dubos argued, because humanity will always make impacts on nature; there needs to be an accompanying "willingness to accept responsibility for a creative stewardship of the earth" (Attfield, 2003, pp. 33-34, citing Dubos, 1974, pp. 130-131). Still, it is worth remembering that Dubos was a supporter of enlightened anthropocentrism, which, on his interpretation, "... acknowledges that, in the long run, the world's good always co-incides with man's own most meaningful good." (Dubos, cited in Rolston, 1975, p. 104, in Hayward, 1995, p. 60).

Dubos co-authored in 1972 with Barbara Ward, *Only one earth: The care and maintenance of a small planet*, the commissioned report of the UN Stockholm Conference on the human environment (Bramwell, 1994, p. 115; Sessions, 1995g, p. 298). This report aimed to alert the western world to impending ecological disaster if we did not review our "philosophical, theological, and technological perspectives on nature" (Moore, 1990, p. 104). Ward too, believed in the Christian stewardship tradition, and her challenge was:

> When we confront the ethical and the natural context of our daily living, are we not brought back to what is absolutely basic in our religious faith? On the one hand, we are faced with the stewardship of this beautiful, subtle, incredibly delicate, and fragile planet. On the other, we confront the destiny of our fellow man, our brothers. How can we say that we are followers of Christ if this dual responsibility does not seem to us the essence and heart of our religion?" (Ward, 1973, cited in Moore, 1990, p. 104).

Their report helped to establish the 'stewardship' tradition within the UN's sustainability approach (Sessions, 1995g, p. 298).

7.3.2.2 Secular versions

> "... talk of 'stewardship' readily suggests a God in the background; can atheists accept it? They surely can if it is pointed out that we are stewards for our posterity..." (Midgley, 1997, p. 100)

In a secular version of Gunn's (1983, p. 152) logic of stewardship "X is steward for Y over Z...", human beings are stewards for future human generations over the planet. The secular version is really better understood[105] as a form of trusteeship over "the common heritage of humankind" for its beneficiaries (Attfield, 2003, pp. 169-172, discussing and generalizing Pardo's (1975), and Agius's (1998) views on oceans, and biotechnology respectively). On this kind of view, the common heritage is "*resources* to which all present and future human beings have or will have a right of access. Every generation has obligations to humanity to conserve and transmit this heritage." (Attfield, 2003, p. 169, my italics)

7.3.2.3 Stewardship and anthropocentrism

It is just so, that human beings "are the only responsible agents capable of planning for the future (whether human or non-human), and the responsibilities of preserving the planetary biosphere and providing for forseeable future needs are theirs." (Attfield, 2003, p. 171).

Stewardship though is critiqued as a homocentric, anthropocentric attitude. Humans are called upon to "... manage nature for the benefit of the human species, not for the intrinsic benefit of other species." (Merchant, 1990b, p. 55). This is quite clear from the *The Millennium Ecosystem Assessment* which assessed the consequences of ecosystem change for *human* well-being (http://www.maweb.org/en/index.aspx retrieved 7 April 2007). Sylvan is critical of the stewardship position, seeing it as "inconsistent with an environmental ethic" (Sylvan, 1973, in Zimmerman, 1993, p. 14). His objection to stewardship essentially hinges on its tolerance of "complete interference" with,

[105] This idea is from Gunn (1983, p. 152) "The trustee's duty is to the beneficiaries, typically future generations"

and total use of, the earth's land, whereas an environmental ethic would insist that some parts of the earth's surface at least should be protected from such scenarios: "… in the present situation of expanding populations confined to finite natural areas[106], they [i.e. both the more dominant "dominion" and lesser "co-operative" traditions introduced in section 7.3.2.1] will lead to, and enjoin, the perfecting, farming and utilizing of all natural areas. Indeed these lesser traditions lead to, what a thoroughgoing environmental ethic would reject, a principle of total use, implying that every natural area should be cultivated or otherwise used for human ends, 'humanized'" [and here Sylvan notes that the total use principle is tied to a resource view of nature (Sylvan, in Zimmerman et al., 1993, p. 14 and footnote 6 on p. 21)]. According to deep ecologist George Sessions, "the year after his book appeared, Passmore withdrew his endorsement of the anthropocentrism of both the "stewardship" and the "man perfecting Nature" positions [these positions were briefly introduced in Chapter Two, section 2.5.1], claiming, "We do need a 'new metaphysics' which is genuinely not anthropocentric …The working out of such a metaphysics is, in my judgment, the most important task which lies ahead of philosophy …This is the only adequate foundation for effective ecological concern" (Passmore, 1974, in Sessions, 1995g, p. 300, and footnote 37, p. 308, which refers to p. 260 of Passmore's 1975 paper, "Attitudes towards Nature").

Attfield (2003) on the other hand, argues that the passage which Sessions cites from Passmore "was almost certainly not a withdrawal of support for stewardship, and was certainly not said to be so. It was a recognition of the shortcomings of anthropocentrism." (Comment by Attfield as thesis external examiner, 7 April 2008). Attfield believes that most adherents of stewardship do reject anthropocentrism (2003, p. 23). Leaving aside just what Passmore meant, I do think Attfield takes a rosy view of the concept "stewardship", in that it might be optimistic to think that any ruling political party would share it. His version of humanity's care-taking of nature involves respecting it (Attfield, 2003, p. 23), is "incompatible with the instrumental approach of managerialism" (p. 23), opposed to "the perpetual pursuit of interference[109]" in nature, and in favour of "letting be[110]" (p. 23), recognizes interests other than human interests, and takes "... non-human interests seriously enough for them sometimes to outweigh human interests" (Attfield, 2003, p. 43).

"Answerability" is of course a key element in either religious or secular versions of stewardship. In either case, it is a hypothetical answerability, in this life at least. Perhaps one way to cut through the rhetoric of both, is to examine any text's stance on environmental sustainability (3.4.1), and discounting (3.4.3.5)?

7.3.3. How are we doing as environmental stewards?

Attfield is convinced that stewardship "remains a significant metaphysical belief, capable of inspiring more specific principles of environmental ethics…and also capable of motivating people to live responsibly" (Attfield, 2003, p. 36). So how are we doing as environmental stewards?

> The world has reached a critical stage in its efforts to exercise responsible environmental stewardship. Despite our best intentions and some admirable efforts to date, degradation of the global

[106] It is often said that the expanding third world population is not as great an environmental problem as the resource consumption and pollution of industrial societies. But it is quite clear in Namibia at least, that expanding population both forces human beings onto marginal lands encouraging desertification, and exiles wildlife from their natural habitat, turning them into "problem animals"
[107] See principle 3 of the Deep Ecology platform
[108] This notion of 'letting be" comes from the holistic philosophy of Martin Heidegger, sometimes seen as an early ecological philosopher (Attfield, 2003, footnote 58, p. 28; Bramwell, 1989 – see the many references to Heidegger in her index; Wall, 1994, p. 3). "Letting be" is also an important element in the concept of "place" , as so wonderfully interpreted by Relph, 1976. Attfield (2003, p. 23) thinks that stewardship includes the idea of "leaving creatures and their habitats alone" as part of "letting-be"
[109] See principle 3 of the Deep Ecology platform
[110] This notion of 'letting be" comes from the holistic philosophy of Martin Heidegger, sometimes seen as an early ecological philosopher (Attfield, 2003, footnote 58, p. 28; Bramwell, 1989 – see the many references to Heidegger in her index; Wall, 1994, p. 3). "Letting be" is also an important element in the concept of "place" , as so wonderfully interpreted by Relph, 1976. Attfield (2003, p. 23) thinks that stewardship includes the idea of "leaving creatures and their habitats alone" as part of "letting-be"

> environment continues unabated, and the world's natural resource base is being used in an unsustainable manner (Message of the UN Secretary-General Ban Ki-moon to the UNEP Governing Council/Global Ministerial Environment Forum, Nairobi, 5 February 2007).

This might partly be, because while "many greens, environmental activists, and ... some public sector bureaucrats, confined largely to environmental protection agencies" tend towards the radical understanding of sustainable development (Davidson, 2000, p. 31), Attfield (2003, p. 131) notes that central governments and business interests, tend to favour a weaker interpretation of sustainable development.

8. Summary

Much of the chapter was devoted to setting out the key implicit assumptions and values of the disciplinary fields contributing to the environment-development field, which is the home of sustainable development discourse: economic theory, development theory, ecology as science, and to a far lesser degree, environmental ethics.

A key task throughout the chapter was to re-justify the exclusion of the environment and development perspective [and with it, the UN WCED version of sustainable development], from the "seeing green" worldview or perspective presented in Chapters Three to Eight. The reasons were briefly, mainstream sustainable development's adherence to anthropocentrism as theory of value for nature, its adherence to a "weak" version of environmental sustainability, its advocacy of reform environmentalism – basically more efficient management of nature as a resource for humans through measures such as improved legislation and technology, rather than a complete re-think of the human-nature relationship, of what it is to be a human being, and its failure to take up the green challenge of a fundamental re-orientation of society's values and structures in accordance with a normative interpretation of ecology.

However, this does not mean to imply that there is *nothing* "green" in sustainable development; as Attfield's (2003, pp. 126-132), Davidson's (2000, pp. 28-31), and Hattingh's (2002, pp. 12-15) discussions of Jacob's (1995, pp. 4-5) models of radical and conservative sustainable development models show (section 7.2). For example, measures to curb natural resource use, and environmental degradation, or to increase decentralization, self-management, public participation, and self-realization are "green". But I believe it is the *ultimate premises* context from which these measures derive – ecology as normative for what it is to be a human being, for human-human, and for human-nature relationships - which colour these measures from dark to grey-green.

CHAPTER TEN: CRITERIA TO ASSESS THE GREEN-NESS OF A TEXT

1. Introduction

This chapter begins to address research question 2: **Using the "seeing green" worldview as criterion, how green is *Namibia Vision 2030*?** Four main issues are covered. Firstly, section 1 introduces briefly (1.1) the key documents reflecting Namibia's sustainable development policy vis-a-vis the natural environment, and (1.2) Namibia's national development planning process. The final purpose of both section 1.1 and 1.2 is not only to demonstrate Namibia's commitment to sustainable development, but also to motivate the choice of Vision 2030 as trial text in this study. Section 1.3 explains briefly the Vision 2030 process, and how it links with Namibia's natural environment policy, and the national planning process.

In section 2, I explain the interpretive methodology and method - critical qualitative content analysis – used to answer research question 2. In section 3, I derive a table of criteria and indicators of "seeing green", which is derived from Chapter Eight, as well as from some of the key ideas in the field of Environment and Development introduced in Chapter Nine. They will be used in Chapter Eleven, in a content analysis of *Namibia Vision 2030's* worldview, to assess its green-ness. In section 4, I address the problem of research criteria which are suitable for the study's qualitative approach.

1.1 Namibia's natural environment policy

Namibia has to date no National Sustainable Development Strategy, and accompanying National Environmental Action Plan (Blackie, 2000), to which governments attending the 1992 Earth Summit committed themselves (Dalal-Clayton & Bass, 2002, p. 13). It did however, at its birth as independent nation, commit itself to the principle of "sustainability' through its Constitution (Government of the Republic of Namibia [GRN], ca. 1990, pp. 51-52). This constitutional commitment is subsumed as a section of Article 95 which deals with "Promotion of the welfare of the people":

> *Principles of State Policy*
>
> **Article 95 Promotion of the Welfare of the People**
>
> The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:
> …..
> (l) maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; …

Thereafter Namibia's government published a series of key policy documents on the natural environment, of which I believe the more important are:

1.1.1 Namibia's Green Plan for the Earth Summit, 1992

The objective of Namibia's 1992 Green Plan (Environment and Development) was "to secure for present and future generations a safe and healthy environment and a prosperous economy" (GRN, 1992, cover page). It was compiled by the then Ministry of Wildlife, Conservation and Tourism under the guidance and editorship of its former Director, Dr Chris Brown, in consultation with a series of government and non-governmental bodies, for presentation to the United Nations Conference on Environment and Development, Rio de Janeiro, or "UNCED" or "Earth Summit', in 1992. It represented Namibia's first policy statement to the international environment/development community on its shift to the "new paradigm of sustainable development" (GRN, 2002a, p. ii). Namibia was also a

signatory to the Rio Declaration on Environment and Development, and to the three other important documents emerging from the Earth Summit: Agenda 21, the United Nations Framework Convention on Climate Change, and the Convention on Biological Diversity (retrieved from http://www.dea.met.gov.na/international/international.htm on 7 February 2003).

1.1.2 The "12-point plan", 1993

Following the Earth Summit, the then recently-established Directorate of Environmental Affairs within the Ministry of Wildlife, Conservation and Tourism, published *Namibia's 12 point plan for integrated and sustainable environmental management* in April 1993, again under the leadership of its Director, Dr Chris Brown. As its title suggests, the plan set out 12 points "aimed at promoting sustainable development and wise natural resource management throughout Namibia". The plan included (1) a confirmation of the constitutional framework for environmental protection and management in Namibia, (2) the development of environmental policies, (3) the review of existing/compilation of new environmental legislation, (4) the identification of Namibia's main environmental issues to guide an envisaged Environmental Action Plan, (5) a Biodiversity Information System to meet Namibia's international commitments in this regard, (6) the promotion of partnership as a key strategy to achieving sustainable development through programmes such as [eco-] tourism development, and the community-based natural resource management programme, (7) the development of regional environmental profiles to guide sustainable regional development, an initiative which later also included the National Atlas and the State of the Environment reports, (8) the maintenance and extension of Namibia's protected area network which underpins Namibia's biodiversity protection, and tourism promotion, (9) environmental education and training, (10) environmental protection largely based on commitment to the strategy of environmental assessment, and (11-12) national/international co-operation on special programmes such as the combating of desertification (GRN, 1993).

Within the framework of the 12 point plan can also be seen Namibia's commitment in principle to, and active support of several international treaties and conventions. Amongst the Multinational Environmental Agreements signed by Namibia are the Vienna Convention and Montreal Protocol for the protection of the ozone layer, the Ramsar Convention on wetlands, the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal, the United Nations Framework Convention on climate change and associated Kyoto Protocol, the United Nations Convention to combat desertification, the Convention on Biological Diversity, and as early as 1991, the Convention on international trade in endangered species of wild fauna and flora (CITES) (GRN, 2002c, p. 118).

1.1.3 The environmental assessment policy, 1995

Namibia's environmental assessment policy for sustainable development and environmental conservation was published in 1995 (GRN, 1995). It was the product of a preparatory workshop held in September 1992, and the contributions of people experienced in environmental management from both government and non-government bodies, inside and outside Namibia. Once again, Dr Chris Brown provided "constant support and leadership" (GRN, 1995, p. 17).

1.1.4 The Environmental Management Act

The 1995 environmental assessment policy envisaged an Environmental Commissioner and Environmental Board, each of which would derive their powers and duties from an 'Environmental Assessment Act' (GRN, 1995, p. 5). In subsequent draft legislative thinking, these two legal entities and their legitimating Act became the Sustainable Development Commissioner and the Sustainable Development Board. While not wishing to provide here an analysis of the history of draft legislation around this topic [which at a stage included, then excluded, pollution and waste management], or

speculate on the reasons for the delay, the "forthcoming" (Blackie, 2000) Environmental Management Act has not been passed to date [2007[1]].

1.1.5 Commitment to the Millennium Development Goals

Perhaps the next milestone in Namibia's policy commitment to sustainable development came with Namibia's pledge, as one of the United Nations member states, to meet the Millennium Development Goals (MDG). One could consider Namibia particularly committed to the MDG process, given that its Prime Minister of the time, Theo-Ben Gurirab, oversaw its drafting, and the then President of Namibia, Dr Sam Nujoma, co-chaired the Millennium Summit (GRN/UN System in Namibia, 2004c, p. i).

Namibia's Government understands the MDG process to link closely with *Namibia Vision 2030* (GRN, 2004b, p.1):

> The Government of the Republic of Namibia is implementing the Millennium Declaration and systematically monitoring the MDGs within the context of national and sectoral development frameworks. The MDG campaign forms part of the national process of strengthening policies that can mobilise all Namibians and the international community behind the grand Vision for the year 2030, through which Namibia will enjoy "Prosperity, Harmony, Peace and Political Stability".

The first MDG progress report was published in 2004 (GRN, 2004b).

1.1.6 National Assessment for WSSD, Johannesburg, 2002

The World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002 represented the ten-year follow-up to the Earth Summit, during which Namibia had entered the international environment/development community. Preparation for Namibia's WSSD report (GRN, 2002a) was practically co-temporaneous with the participatory development of National Development Plan II (NDP2) and its subsidiary Regional Development Plans, (section 1.2. next), as well as the initial stages of *Namibia Vision 2030's* compilation (section 1.3).

The primary purpose of the 2002 WSSD National Assessment was to report on Namibia's progress since the 1992 Rio Earth Summit, to list its challenges (for example, the social and environmental debts inherited from the Namibia's colonial history), and successes in 'implementing sustainable development options' (for example, the way in which NDP2 'attempts to incorporate the most important issues relating to environment and its sustainability into most of its objectives and strategies' (GRN, 2002a, p. 4), and to set out the way forward in addressing Namibia's local and global sustainable development issues.

In the National Assessment, Namibia listed its achievements in the face of a significant inherited colonial social and environmental debt as

- a full Ministry to deal with Namibia's shift to sustainable development
- new policies and legislation aimed at environmental management
- commitment to international agreements and instruments aimed at environmental conservation
- the devolution of rights and responsibilities over natural resources to local communities in an effort to link poverty eradication and environmental protection
- special programmes to combat desertification, and pollution, to protect biodiversity, promote sound woodland management, and land use planning
- the establishment of an environmental information system to inform environmental management planning and including projects such as regional profiles, the National Atlas and the State of the Environment reports

[1] This was written in September 2007. The Act was promulgated in December 2007 (Government Gazette of the Republic of Namibia, No. 3966, 27 December 2007. It has not yet (September 2008) come into operation

- raising awareness of, and gearing environmental education to, Namibia's particular sustainable development issues,
- the steady transformation of national development plans from development plans to sustainable development plans.

Namibia's WSSD National Assessment also characterized the launching of the Vision 2030 initiative [section 1.3], as a "process of great significance for sustainable development in Namibia" (GRN, 2002a, pp. ii-iii).

1.2 Namibia's national development planning (NDP) process

Despite the existence of article 95 of the 1990 constitution, the 1992 *Green Plan*, and the 1993 *12 point plan for integrated and sustainable environmental management,* the natural environment was not at the heart of Namibia's first full-scale development plan, i.e. National Development Plan 1, which covered the period 1995/1996 – 1999/2000. NDP1 identified its key target areas as "stimulating and sustaining economic growth; creating employment; reducing inequalities in income distribution; and reducing poverty". However, one of the six strategies identified to achieve these targets was "Ensuring that development is sustainable" (GRN, 2001, p. 44, and Box 3.1 on page 47). This could be interpreted perhaps as an inexplicit commitment to environmental sustainability as part of national development planning.

National Development Plan 2 (2001/2002 to 2005/2006), called in Namibia's 2002 WSSD assessment, a "National Sustainable Development Plan" (GRN, 2002a, Foreword, p. iii) was based on an extensive review of both NDP 1 and the Green Plan (GRN, 2002a, Foreword, p. iii). The sustainability of the natural environment had by now become a central principle in development planning. Within Vision 2030s vision of "sustainable and equitable improvement in the quality of life of all people in Namibia" (GRN, ca 2001b, p. 50), one of NDP2's nine development objectives is "To enhance environmental and ecological sustainability" (GRN, ca 2001, p. 50, and p. 52). One of NDP2's six national strategies to achieve the NDP2 national development objectives is "Promoting sustainable use of natural resources and environmental management" (GRN, ca 2001, p. 53).

Again, of significance for the choice of Vision 2030 as trial text, the foreword to NDP2 notes that " .... (NDP2) is part of a longer-term development perspective (Vision 2030) for Namibia. ... NDP2 policies, therefore, are geared to achieve the medium-term objectives of the Vision." (GRN, ca 2001, Foreword, p. xiii).

1.3 *Namibia Vision 2030*

The Director-General of the National Planning Commission noted in his preface to *Namibia Vision 2030*, that "Namibia's 2030 Vision is one of the most important initiatives undertaken in the country since the drafting and acceptance of the National Constitution" (GRN, 2004a, p. 13).

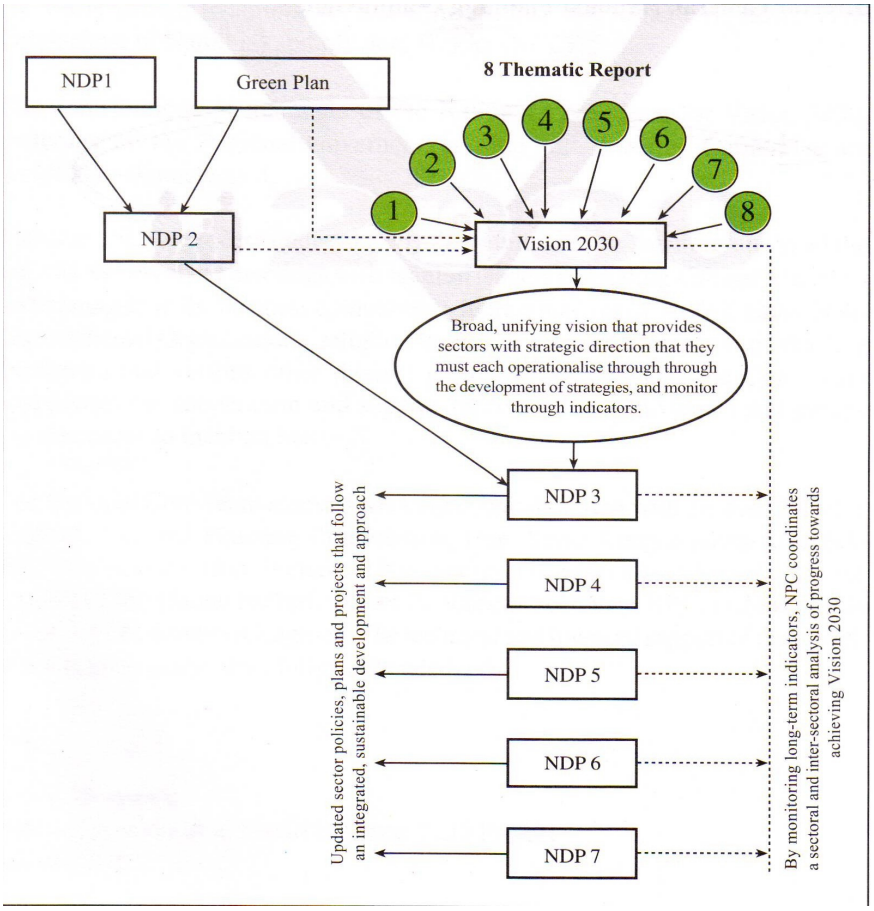
The first President of the Republic of Namibia, Dr Sam Nujoma, initiated the idea of Vision 2030 in 1998. The Vision itself, published in 2004 as *Namibia Vision 2030. Policy framework for long-term national development,* rests on an extensive consultation process: a survey of opinion leaders, regional sensitization and aspirations workshops, a National Aspirations conference, and preparatory workshops for the compilation of the Vision's eight supporting thematic reports:

1. Inequality and social welfare
2. Peace and political stability
3. Human resources development and institutional capacity building
4. Macroeconomic issues
5. Population, health and development

6. Namibia's natural resources sector
7. Knowledge, information and technology
8. Factors of the external environment.

Namibia Vision 2030 comprises a framework intended to set out clearly, "... where we are today as a nation, where we want to be by 2030 and how to get there" (GRN, 2004a, p. 9). Figure 8 illustrates how *Vision 2030* intends to link Namibia's short-term five-year development planning approach to this long-term perspective (GRN, 2004a, untitled and unnumbered table, p. 15).

Figure 8: How *Namibia Vision 2030* synthesizes Namibia's natural environmental policy and national planning process into an overarching development planning framework



A "vision" has been described as "the operational definition of values" (Thomas, 1998, p. 44). I feel confident that a worldview analysis of Vision 2030, as Namibia's premier policy and programme setting document, will provide a reliable indication of the philosophical and real-world "green-ness" of its values.

2. Methodology and method

In this section, I discuss the study's (2.1) interpretive methodology approach, and (2.2) use of critical qualitative content analysis as method.

2.1 Methodology: an interpretive approach

In what I see as "fitting in" with "seeing green", I have chosen an interpretive methodological approach. As opposed to entirely structural approaches to understanding social phenomena, an interpretive approach recognizes that individuals' meanings are socially and recursively informed. A further reason for choosing an interpretive methodology is my background training in psychology and environmental psychology. Not only do I not have the requisite training in sociology to undertake an analysis of the social structures involved in the production and implementation of *Namibia Vision 2030*, but an analysis of the assumptions of its implicit or explicit worldview is personally more appealing.

Some interpretive methodologies are (2.1.1) social action theories including those of Max Weber and Clifford Geertz, and (2.1.2) semiotic and semiology approaches. These I introduce briefly before focussing (2.1.3) on the semiotic critique of ideology in mass communication, as developed by the United Kingdom [UK] Centre for Contemporary Cultural Studies in Birmingham.

2.1.1 Social action theories

The basic assumption of social action theory, which began with the work of Max Weber, is that social action is informed by subjective, but socially informed, beliefs, meanings and values. Clifford Geertz's (ca. 1973) 'symbolic theory of action', which underpins his work on religion and on ideology as cultural symbolic systems, follows the social action perspective. Geertz assumes that (1) the culture of any society comprises patterns of meanings gathered up in symbol systems, such as religion, or science, or philosophy. Geertz calls this the culture's "ethos", and I have taken it as loosely equivalent to "worldview"; (2) these symbol systems or worldviews, or ideologies [which can be understood as a worldview applied in the interests of a social group either holding, or wishing to obtain or retain political power] both legitimate, and act as models *of* reality, and models *for* reality, for members of that society; (3) people's symbol systems exist in "private" thought but have both been constituted in, and continue to influence, the public domain [the social constitution of reality by human beings in interaction]; and (4) understanding social action requires understanding the meanings and values of the symbol systems/worldviews/ideologies informing it.

2.1.2 Semiotic and semiology approaches

These related approaches are also concerned with the meaning conveyed by symbols and signs; both have developed from de Saussure's structural approach to language. Semiology is the continental version which later developed into structuralism and post-structuralism. Within this latter version, Haralambos and Holborn (2000, p. 935) group [structural] neo-Marxist approaches and theories such as Gramsci's cultural hegemony, Lee Harvey's critical social research, and, also, Potter and Wetherell's (1987) and Norman Fairclough's "discourse analysis" approaches (1989, 1992, 1997). Semiotics is the Anglo-American continuation, and it is often found in mass media theory, which is discussed next.

2.1.3 Mass communication theory, and the semiotic critique of ideology in mass communication

Mass communication theory is interested in how the state apparatus disseminates and maintains a particular version of the ideal society, and a particular set of values [ideology], through mass communication, and the extent to which these messages are taken up by, and influence the behaviour of members of society. It seems not incorrect to me, to conceptualize *Namibia Vision 2030* as a mass communicative approach to the topic of the environment in development.

The ideology critique of mass communication theory comprises several approaches (Haralambos & Holborn, 2000, pp. 936-949; Morley, 1980), related both to the structure/content of the message, as well as its reception by readers/viewers [the "audience"]. I shall concentrate here on the ideology-in-communication critical work done by media researcher David Morley (1980), of the UK Centre for Contemporary Cultural Studies in Birmingham. Morley (1980) and his research team were interested in how the British Broadcasting Corporation television programme *Nationwide* "encoded" its "preferred" view of reality [a worldview, one could say] in its programme content, and how audiences "decoded" the programme content. Though the focus of their research was a television programme, Morley's neo-Marxist/Gramscian cultural hegemony approach to mass communication seems easily applicable to the content of a view of reality such as *Namibia Vision 2030*.

2.1.3.1 The neo-Marxist cultural hegemony encoding/decoding model

This approach to mass communication theory argues that the [official] media "make meanings and organize them into systems or codes which help to make the world comprehensible to viewers and readers: they provide order and help us link together what would otherwise appear to be separate events. However, only a relatively small number of codes – organized into an ideology [or worldview] – are used to interpret reality: these become taken-for-granted sets of ideas. They are so taken for granted that they are 'invisible' [because shared] to those who use them to interpret the world" (Haralambos & Holborn, 2000, pp. 940-941).

The "text" then, although it represents dominant interests in a society, appears as obvious, natural, unproblematic, just common sense really. But as Morley (1980, p. 139) notes, "…the point is that 'common sense' always has a particular historical formulation; it is always a particular combination constituted out of elements from various ideological fields and discourses".

Though the creators of a communication or "text" might present a hegemonic or "preferred" encoding of events – or a dominant framework of meanings, or what Morley calls, a preferred "ideological problematic" – the "text" cannot close off all possible meanings. Readers/viewers are assumed to actively 'decode', or re-interpret, re-define, or deconstruct (Morley, 1980, p. 143, 144) the framework of interpretation proposed in the communication. They might simply agree with the "preferred" reading, perhaps because the "ideological problematic" encoded in the communication is 'invisible' to them, or they "see" it and agree with it anyway; they might reject it outright in an oppositional reading of the text, or negotiate with it in some way. It is also possible that the discourse of a text is just so far removed from the reality of some readers that they fail to make any reading of it at all (Morley, 1980, p. 134).

2.1.3.2 Assessment of the encoding/decoding model for this study, and how it has been used

Morley's cultural hegemony mass communication encoding/decoding model is a personally attractive potential theoretical framework for the study for several reasons.

The first is its *semiotic* or meaning-making approach to worldview/ideology critique. It does not see ideology as totally structuring the individual, fixing him or her in 'subject' positions, but recognizes

the meaning-making that the reader brings to the text. It also avoids the overwhelming concentration of Foucauldian-type discourse-analytic approaches on analysis of power, struggle, conflict, control, oppression, repression and so on.

The encoding/decoding model accepts that there is a link between language, the social nature of thought and consciousness, the construction of social reality, and the limits/potentials which language holds for social and individual [political] action. Morley relies not only on Volosinov (1973), but also on Mills, who argued that: "It is only by utilising the symbols common to his group that a thinker can think and communicate. Language, socially built and maintained, embodies *implicit exhortations and social evaluations* … By acquiring the categories of a language, we acquire the structured 'ways' of a group, and along with language, the *value-implications* of those 'ways'. … along with language, we acquire a set of social norms and values. A vocabulary is not merely a string of words; immanent within it are societal textures – institutional and *political* co-ordinates." (Mills, 1939, p. 433, my italics, in Morley, 1980, p. 25).

What is the link between words and the potentials/limits of individual and social [political] action? Mills (1939, in Morley, 1980, pp. 24-25) phrases it thus: "The limits of what I can do intentionally are set by the limits of the descriptions available to me; and the descriptions available to me are those current in the social groups to which I belong. If the limits of action are the limits of description, then to analyse the ideas current in a society (or subgroup of it) is also to discern the limits within which rational, intended action necessarily moves in that society (or subgroup)". So Mills is proposing "a theory not only of the social and psychological, but also of the political, determinations of language and thought." (Morley, 1980, p. 25)

My interest in Morley's model for understanding mass media communication lies in its "encoding" half. I want to see what values are upheld or rejected in the silent assumptions of *Namibia Vision 2030's* encoding. My hope is that reading *Namibia Vision 2030* "through" the seeing green criteria list developed in section 3.4, will better enable readers to actively 'decode', or deconstruct the "framework of interpretation" proposed in it, enabling them in a reflected-upon way, to agree with the encoded 'preferred' reading, reject it outright in an oppositional reading of the text, or negotiate with it in some way. In other words, to "see", and agree or disagree with the "preferred" view of reality which *Namibia Vision 2030* offers, and take political action accordingly.

A final reason. The "decoding" half of Morley's model offers the possibility of future research into whether, and how readers do deconstruct *Namibia Vision 2030.*

To make explicit *Namibia Vision 2030s* "preferred" worldview, and to assess its green-ness, I chose content analysis, a time-honoured method in mass communication research.

2.2 Method: Critical qualitative content analysis

In this section, I address in (2.2.1), the often-encountered reservations about quantitative content analysis. In sub-section 2.2.2, Berelson's (1952) qualitative content analysis is introduced. How I have "updated" Berelson's method, is presented in sub-section 2.2.3. In sub-section 2.2.4, I explain how the seeing green criteria/indicators checklist developed in section 3.4 of this chapter, will be used to guide the actual content analysis of *Namibia Vision 2030* in Chapter Eleven.

2.2.1 The problem with quantitative content analysis

Content analysis originated in the field of mass communication theory as an attempt to gain a degree of quantitative control over message content to assist analysis of message effect (Morley, 1980, p. 4). Its basic method is to decide which themes are of interest, to count their presence, and then make

deductions as to the significance of the totals arrived at. Simplistically, for example, one could count and compare the number of times the natural environment is described as "resources", "sources" or "sinks", and compare that with how often the word "nature" is used in *Namibia Vision 2030.* Should 'resources', 'sources' and 'sinks' outnumber 'nature' as descriptor of the physical environment, one could possibly begin to hypothesize that its worldview tends towards the grey-green "industrial-economic" rather than the "ecological" or "green".

But I agree with Parker's view (1992, p. 2) that content analysis used quantitatively to analyze a text such as *Namibia Vision 2030* is "likely to come to grief because … [it makes] a fundamental mistake about the nature of meaning". The fundamental mistake is to believe that "Words and phrases … come ready packaged with a specific delimited meaning that a researcher can know as if they were fixed and self-contained" (Parker, 1992, p. 2). Rather the researcher must be able to appreciate that the words and phrases form patterns in a text, and "when we attempt to grasp patterns in a text [which is really what one is trying to do – what are the "patterns" which make up Vision 2030s worldview?] we always have to carry out that exercise against a cultural backdrop" (Parker, 1992,p. 2). Seeing green is essentially, a *cultural* critique. Western Enlightenment humanism, and western advanced industrial capitalism, for example, represent some of the cultural backdrop against which to make sense of seeing green's legitimating narratives.

2.2.2 Qualitative content analysis (Berelson, 1952) as alternative

But content analysts, for all their positivist talk, are not as insensitive to meaning as Parker suggests. For example, "class", and "family" as concepts and values have also been subjected to cultural critique via content analysis (Berelson, 1952, p. 116). Here is an extract from a research report, using content analysis as method: "Both the higher and lower literature of poetical realism after 1830 (in Germany) emphasize unceasingly the virtues of the middle-class family… The concentration of the middle-class periodical on the family meant in practice a specific selection in its contents. All its articles laid stress on the moral aspect of things; if social realities were not completely concealed, good care was taken not to probe them too thoroughly…" (Berelson, 1952, p. 117).

Berelson (1952), in one of the standard texts on content analysis, devotes an entire chapter (chapter 3, pp. 114-134) to qualitative content analysis. He discusses its extensive use "in literary criticism and intellectual and cultural history generally, as well as a sizeable amount of writings in political history, political and social philosophy, rhetoric, and indeed any field in which *the close reading of texts is followed by summary and interpretation* of what appears therein" (p. 114, my italics). Not the frequency of specific themes, but their presences and absences, and the *meaning* of these, is the approach of qualitative content analysis.

Berelson then goes on to note the ways in which qualitative content analysis differs from quantitative analysis. That is not my interest. My interest is rather in deciding whether or not his exposition of qualitative content analysis, used together with an informal understanding of the concept "worldview", has potential for "placing" a text such as *Namibia Vision 2030* somewhere along the green to grey-green to grey spectrum.

According to Berelson,

> (a) qualitative content analysis pays attention to presences and absences in the text: "In the political sphere, considerable power is assigned to this form of content analysis … on the ground that it can take account of both the communication and the historical contexts…" (Berelson, 1952, p. 120). This aligns easily enough with the seeing green criteria/indicators checklist presented in section 3.4 of this chapter. For example, a text either problematizes the use of nuclear energy ["green"], or it does not ["grey-green"].

(b) Berelson remarks that "…the interest of the qualitative analyst lies less often in the content as such and more often in other areas to which the content is a cue, i.e. which it 'reflects' or 'expresses' or which is 'latent' in the manifest content" (1952, p. 124). The text's content is also seen "... as a 'reflection' of 'deeper' phenomena" (p. 123), a "convenient indicator" for things going on in the text other than the expressed content. These other things might be ideology (p. 124), or an insight into the psychology of the person/ persons who created the text (p. 124), or the "intentions of a communicator" and the possible "effects upon the audience" (p. 122). In content analysis jargon, this is the "non-content" of a communication. "Non-content" is not the same as absences in a text, it is probably better understood as 'meta-content'. During the close reading, the researcher/analyst makes inferences about/interpretations of intentions, motivations, and effects (Berelson, 1952, p. 122).

(c) Qualitative analysis utilizes more complex themes than quantitative analysis, does not seek to reduce the complexity of themes to atomistic units, but to "take them in the large on the assumption that meanings preside in the totality of impression, the Gestalt, and not in the atomistic combination of measurable units" (Berelson, 1952, p. 126).

Through this brief discussion, I hope to have shown that the usual criticisms aimed at content analysis – its supposed lack of attention to culture, history, and the social context of meaning - are unfounded. There is no reason why a qualitative use of content analysis cannot be an appropriate way of analysing the green-ness of any text's implicit or explicit worldview, using a checklist such as that proposed in section 3.4.

2.2.3 Updating Berelson's (1952) qualitative content analysis

Given that Berelson's discussion of qualitative content analysis was written in the 1950s, some might feel that it needs postmodern updating. However, even social psychologists working within the discourse analysis school of social research at some stage employ content analysis to come to grips with their texts of interest, for example, Potter and Wetherell (1987, pp. 158-176), and Parker (1992, pp. 125-126).

I suggest that Berelson's qualitative content analysis approach can be "updated" through awareness of all the insights into "texts" and textual analysis provided, for example, by social constructionism[2], "discourse analysis", or "deconstruction", without either subscribing to the postmodern love of revealing relations of power and suppression in discourse, or applying any particular discourse analytic method to *Namibia Vision 2030* as text.

Let me illustrate. My start-up assumption is that *Namibia Vision 2030* is a written "text" which can be examined via qualitative content analysis to elicit a description of its explicit or implicit worldview. Any worldview is a "set of ideas replete with its key words …." (Lemon, 2003, p. 365), phrases, metaphors, images and so on. Historical philosopher Lemon uses Lyotard's postmodern critique of Marxism as metanarrative as example, and then, understanding "metanarrative" as a set of ideas, links it to the concept of worldview thus:

> … Lyotard came to reject Marxism because he saw it as just another version of the attempt to impose a universalistic ***set of ideas*** and ***values*** upon the world. Lyotard called such attempts '*metanarratives*' and the essence of his 'postmodernism' revolves around exposing and challenging them. By a 'metanarrative' he is referring to the ***suppositions*** he sees as interwoven in entire ways of thinking [worldviews]. The latter are articulated via their own kinds of discourse [phrases, metaphors, images and so on], and manifested in corresponding practices and institutions ….. (Lemon, 2003, p. 365; comments in brackets, as well as the

[2] Indeed, it is necessary to grasp these intellectual arguments, simply because "green" and "postmodern" do not always sit comfortably together

bold italics are mine).

Lemon (2003, p. 365, my bold emphasis) then writes: "This set of ideas, replete with its ***key words***, ***assumptions*** about the nature of 'society', ***and values***, served to legitimate a particular ***outlook*** which pervaded the approach to life shared by millions."

This approach is not much different from critical discourse analyst Norman Fairclough's (1989, pp. 109-168) understanding of keywords, key phrases, and metaphors as "traces of, and clues to" the implicit or explicit assumptions, and ideas, of a "metanarrative" or "discourse" [worldview]. Nor is it much different from Berelson's explanation of the nuances of qualitative content analysis in 2.2.2 above. It has simply focussed the attention of the content analyser on the presence or absence of key words, key ideas, key phrases, metaphors, or images which are used explicitly or implicitly in the text, in association with the various elements [epistemology, ontology, view of human being, nature ethic as examples] of a worldview.

The next step of a postmodern discourse analysis via content analysis, would be a critical examination of power relationships, via questions such as those that Hattingh (2002, p. 14) poses about sustainable development as discourse:

> Whose interests are served by adopting this or that agenda of sustainable development? Whose power is served and through which mechanisms? And who or what stands to win or lose in which ways from adopting this particular agenda of sustainable development, rather than that one? Are new forms of dependency created by adopting this or that interpretation of the agenda of sustainable development? Are new forms of domination and exploitation created...?

But the posing of such ideological questions to the worldview of *Namibia Vision 2030* which I hope to make more explicit in this study, and their answering, I leave to other researchers.

2.2.4 Some technical issues in qualitative content analysis

Content analysis, whether quantitative or qualitative, requires pre-decisions on some technical issues, such as (2.2.4.1) the units of analysis (Berelson, 1952, pp. 135-146), and (2.2.4.2), the categories of content analysis (pp. 147-168).

2.2.4.1 The units of analysis

Berelson makes three technical distinctions here:

(a) between the "recording unit" and "the context unit" (1952, pp. 135-142). The recording unit is the smallest body of content in which the focus of interest can occur. This may be a word, a sentence, a paragraph, a theme, or an entire unit, such as a chapter, or book. The focus could also be a character [person] in the text, or an item such as tables, or figures in a text, as opposed to the text itself, or a theme. The content analysis need not be limited to one recording unit only (Berelson, 1952, p. 143). In this study's qualitative approach, the focus is on the standard worldview themes identified in Chapter Two. Because the purpose of qualitative analysis is not to count the number of occurrences of the focus of interest in a pre-specified "recording unit", no distinction has been made in the study as to whether a theme [or its related keywords, phrases or "absences" or "meta-content"] appeared as a word, or in sentences, paragraphs, tables, and figures.

The "context unit" is "the largest body of content that may be examined in characterizing a recording unit". In this study, the "context unit" is primarily *Namibia Vision 2030,* which is taken to mean the "Main document" of 248 pages. Where I have felt it necessary to make *Namibia Vision 2030's* implicit or explicit standpoint on any worldview element clearer, for example, its views on population, or the

natural environment, the "context unit" also includes the eight thematic reports which informed *Namibia Vision 2030* (Figure 8 in section 1.3 of this chapter). The discussion in Chapter Eleven always makes this extension of the context unit clear.

Berleson's (1952, pp. 142-146) next two concerns are (b) a distinction between the unit of classification, and the unit of enumeration, and (c) the use of a prior analysis of a unit to characterize a larger unit for later analysis. As I understand both these technicalities to be related more to quantitative than qualitative analysis, and as neither have been used in this study, I do not discuss them further.

2.2.4.2 The hypotheses, categories and indicators of content analysis

"Content analysis stands or falls by its categories..." (Berelson, 1952, p. 147).

Content analysis which is not based on "a clearly formulated problem" and "fully-stated, dependent hypotheses and questions" (Berelson, 1952, p. 162), or which utilizes the "hit-or-miss method of analyzing 'everything' in a body of content in the hope that 'something will turn up'..." (p. 162), or is based on "vaguely drawn or poorly articulated categories" (p. 147), is, in Berelson's view, almost certain to be "of indifferent or low quality" (p. 147), unproductive, and uneconomic (p. 162). The key to successful content analysis lies in careful formulation of a hypothesis/hypotheses, analysis categories, and their indicators.

The to date unstated "problem" for this study has been the unsubstantiated idea that although Namibia has an impressive on-paper pro-environmental image (section 1.1 of this chapter), as an environmental psychology post-graduate, and former worker in the environmental management consultancy world, I experience a qualitative difference between what is *said,* i.e. *written as policy,* in Namibia*,* and what actually happens in practice. Some examples are the lengthy finalization of the Environmental Management Act (section 1.1.4), the contentious Epupa hydro-electric power scheme (Friedmann, in Miescher & Henrichsen, 2000, pp. 222-235), the Ramatex textile factory saga[3], the clubbing of seal pups despite international censure (former Wildlife Society of Namibia files now held by its successor body, the Namibian Environment and Wildlife Society (NEWS)), or the implementation of The Green Scheme in the north without an Environmental Impact Assessment as required by Namibian policy (pers. comm. Dr Peter Tarr, Southern Africa Institute for Environmental Assessment, 22 November 2007). There appears to be a "gap" somewhere. This became a tentative informal hypothesis: Namibia's natural environment policies aren't really, i.e. fundamentally, "green".

But what does "green" mean? It became clear from my reading, which culminated in Chapter Eight, that "seeing green" is a total worldview, a total western cultural critique, not only a viewpoint about the natural environment. The tentative hypothesis evolved into something like: "The worldview within which Namibia's natural environment policies are generated, is not really green; that might explain the 'gap' between policy and practice". The reasons for the choice of *Namibia Vision 2030* as test "worldview" for this hypothesis have already been set out in section 1 of this chapter.

To "test" this informal "hypothesis", "categories" of analysis were developed which largely approximate the themes which environmental philosopher Sylvan pursues in his research into deep ecology as worldview (Chapter Two: 1.3.1). The categories can also be understood as sub-

[3] Ramatex, a Windhoek-based textile factory, is Namibia's own example of the effects of a globalizing economy. Under Namibia's Foreign Direct Investment scheme, Ramatex was allowed to commence operations in 2002 under suspension of Namibia's Labour Act of 1992 , and without any publicly available Environmental Impact Assessment as well (Shindondola & Jauch, 2003, pp. 4-5, p. 39). This despite the Cabinet-approved Namibia Environmental Assessment Policy, and a commitment by the Windhoek City Council to environmental sustainability within its area of jurisdiction. Ramatex has remained contentious because of its labour record, its large-scale water use, and hazardous waste streams. Civil society/NGO criticism of both the Epupa and Ramatex projects has been met with considerable antagonism by the Government, which has characterized such criticism as environmental extremism (Friedmann, 2000, p. 230), propaganda charades, and paternalistic arrogance (Aloe, February 2002)

"hypotheses", for example, "*Namibia Vision 2030*s implicit or explicit ontology is unlikely to be a holistic, organismic, purposive view of reality/nature" [category 6, in section 3.4 of this chapter]. I have however preferred to pose the categories as questions: "Does *Namibia Vision 2030*s implicit or explicit ontology tend towards a holistic, organismic, purposive view of reality?"

As content analysis categories are "often quite generalized ... they require the designation of specific, concrete indicators which represent the categories yet refer directly to the particular content under analysis" (Berelson, 1952, p. 163). Berelson warns that "If the categories cannot be formulated in terms of analyzable indicators, then a content analysis cannot be done. On the other hand, if the indicators easily fit the content, but bear only a remote relation to the categories, then the content analysis is not worthwhile" (p. 164).

With this warning in mind, as well as his admonition (Berelson, 1952, pp. 164-165) that "the hypotheses should adequately express the problem, the categories adequately express the hypotheses, and the indicators adequately express the categories", the seeing green checklist was compiled. It is presented next.

3 Seeing green/grey-green: criteria and indicators

In this section, I explain (3.1) how the understanding of "green" in Chapter Eight has been reduced to categories, (3.2) how grey-green criteria derived from Chapter Nine have been added to them, and (3.3) how indicators have been provided for each criterion. In (3.4), I present the full checklist, which is assumed to cover the range of views indicated in Wissenburg's heuristic (Chapter One, Figure 2), that is, from dark and pale green on the left, to grey-green and grey on the right. In (3.5), I explain how the criteria will be tested.

3.1 The green categories or criteria

The understanding of "seeing green" presented in Chapter Eight, has been distilled into 18 categories, or criteria, or broad themes of analysis. They are arranged under the by-now familiar headings of legitimating narratives, epistemology, ontology, moral philosophy ["the good life"], ethics, as well as views on development, the natural environment, the economy, social cohesion, and the political process. Each category has an identifying number, from 1 to 18. They represent sub-hypotheses, or questions, that one might put to any text. Thus, in a "green" text, one would expect that:

LEGITIMATING NARRATIVES

1. The idea of androcentrism, including the ideas of anthropocentrism, hierarchy, and patriarchy, are critiqued [or, phrased as a question, Are the ideas of androcentrism, anthropocentrism, hierarchy, or patriarchy, critiqued in this text?]
2. Western capitalist techno-industrialism as definition of "the good life", is challenged
3. Ecology is seen as normative
4. Spirituality is recognized as necessary for personal and social transformation

EPISTEMOLOGY

5. Rationality/rationalism as sole way of knowing is critiqued, problematized

ONTOLOGY

6. A holistic, organismic, purposive view of reality/nature is proposed
7. There is philosophical concern for a reconceptualized human being/nature relationship
8. There is philosophical concern for a reconceptualized Self

ETHIC, WITH FOCUS ON AN ETHIC FOR NATURE

9. There is an account of the ethical generally, which differs from standard [or "masculine"] western accounts
10. The ethic for nature is ecological sustainability, understood as long-range, and "wide", and not as only human-instrumental environmental sustainability

REAL-WORLD SEEING GREEN POLITICS IN AN ECOLOGICAL SOCIETY

SOME VIEWS ON SOCIAL REFORM

11. Fundamental, ecologically-informed, post-patriarchal reformation of society's values and structures are proposed

SOME VIEWS ON THE NATURAL ENVIRONMENT

12. Long-range, wide, ecological sustainability is placed at least on a par with, if not ahead of social or economic sustainability
13. Animals are treated ethically

SOME VIEWS ON THE ECONOMY

14. The economy is ecologically re-oriented

SOME VIEWS ON LOCAL AND GLOBAL SOCIAL COHESION

15. Living in solidarity is advocated
16. Non-violence, and radical peace are advocated

SOME VIEWS ON THE POLITICAL PROCESS

17. Grassroots ["direct"] democracy is advocated
18. Living/enacting your personal moral beliefs in the public-political sphere is encouraged.

Hereafter, these criteria are presented in two-column tabular format. Column A contains the criterion's identifying number, and Column B, its description.

3.2 The grey-green criteria

"Sustainable development", and not "seeing green", is the discourse of environment and development. Its central ideas sometimes differ so widely from "seeing green", that I felt the provision of some grey-green criteria was justified, particularly to enable a reader to recognize whether a text is presenting "weaker" or "stronger" versions of anthropocentrism, environmental sustainability, or sustainable development (Chapter Nine). These criteria have been included in the checklist as counterpart to their "seeing green" versions, and given the same criterion number, only preceded by the letters GG ["grey-green"]. As examples:

A	B
1	The ideas of androcentrism, anthropocentrism, hierarchy, and patriarchy are critiqued
GG 1	There will be a tendency towards "weak" anthropocentrism [grey-green], or perhaps even "strong" anthropocentrism [practically grey]

Or,

A	B
10	Ecological sustainability is understood as long-range, and wide, not merely as human-instrumental-only environmental sustainability
GG 10	A grey-green text is more likely to tend towards "sensible" [more grey-green] or "weaker" [less grey-green] versions of environmental sustainability. Conceptual answers to the questions What is to be sustained of the natural environment, and to what extent?, For whom?, and For how long? are likely to tend toward: a. What is to be sustained? Substitutability between the various types of capital – natural (renewable and non-renewable), human-made, and human-social – is acceptable *up to a point*, after which it is not. b. For whom is the natural environment to be sustained? For people. c. For how long is the inter-generational equity to last? The next generation only.

3.3 Providing indicators for the criteria

(a) Indicators and sub-indicators are provided to help in applying the criteria. They too are numbered in accordance with their main criterion. Indicative, not exhaustive, supporting data is given for the criteria/indicators. As example:

A	B
8	**There is philosophical concern for a reconceptualized Self** (Ch 8: 4.3, 4.3.1)
8.1	Western atomist individualism problematized as a Self/Other relationship? (Ch 8: 4.3.2). For example,
8.1.1	Homo *economicus* implicitly or explicitly critiqued?
8.1.2	Aggression, competitiveness, and related adversarial values critiqued?
8.1.3	A 'male' disconnected sense of Self critiqued?
8.2	The new Self as liberated, re-integrated, embodied, connected? (Ch 8: 4.3.3)
8.2.1	Complete liberation and freedom, especially for women, from all forms of hierarchy, patriarchy, and any other form of domination, or coercion (Ch 8: 4.3.3.1)
8.2.2	Unrepressed re-admittance of the body into what it is to be a fully-functioning human being (Ch 8: 4.3.3. 2)

(b) The same indicator may be used for more than one criterion. Such use should be clear from the numbering in column A. For example, criterion 4 below also utilizes indicator 2.3 from criterion 2:

A	B
4	**Spirituality is recognized as necessary for personal and social transformation** (Ch 8: 2.3, 4.3.3.6)
4.1	▸ Solidarity lifestyles with have-nots advocated
4.2	▸ Living in authentic community with other human beings, and in a partnership ethic with nature advocated
2.3	▸ Materialism and consumerism critiqued as values (Ch 8: 6.3.3.2)

3.4 The "seeing green" criteria/indicators checklist

The seeing green criteria are presented next in tabular format:

SEEING GREEN CRITERIA IN TABULAR FORMAT	
N.B. The number in Column A is the reference number of the criterion or indicator. Column B describes the criteria/indicators. They should be understood within the context of ideas presented in Chapter 8 or Chapter 9	
LEGITIMATING NARRATIVES	
A	**B**
1	**The ideas of androcentrism, anthropocentrism, hierarchy and patriarchy [their value dualisms and logic of domination] are critiqued?** (Ch 8: 2, 2.1)
Androcentrism: A male, disconnected sense of Self; a patriarchal orientation, and a power-based morality (Gaard, 1993, p. 2, 3, 6; also Kheel, 1990, in Diamond & Orenstein, 1990, pp. 129-131). The (male) disconnected Self views everything else as "Other" to itself, and thus as a potential object of management, exploitation, domination, or oppression. It manifests itself structurally and systemically as hierarchy and patriarchy (Ch 6: 6.1.1)	
Hierarchy: "The cultural, traditional and psychological systems of obedience and command, not merely the economic and political systems to which the terms class and State most appropriately refer. ... I refer to the domination of the young by the old, of women by men, of one ethnic group by another, of 'masses' by bureaucrats who profess to speak of 'higher social interests', of countryside by town, and in a more subtle psychological sense, of body by mind, of spirit by a shallow instrumental rationality" (Bookchin, 1982, p. 4 in Ch 5: 4.2.2.2). The idea of hierarchy gives rise to domination (Ch 5: 2.3) and a "power-over" the Other mentality (Ch 6:6.1.1) **Antithesis: emancipation from value dualisms, understood within a logic of domination, or power-over thinking; egalitarianism; complementarity; self-management**	
Patriarchy: • "hierarchical dualism " is the "organizing principle" of patriarchal thought (Birkeland, 1993, Ch 6: 6.2) • "the male-dominated system of social relations and values" justified by the systematic devaluation of the feminine principle (Birkeland, 1993, Ch 6: 6.1.1, footnote 95) • "the structure of patriarchy" considered to rest on the "four interlocking pillars" of "racism, sexism, class exploitation, and ecological destruction" (Collins, 1973; in Warren's (1987) words, "sexism, racism, classism *and* naturism", both in Ch 6: 1, footnote 2) • "the manifestation and institutionalization of male dominance over women and children in the family and the extension of male dominance over women in society in general" (Birkeland, 1993, Ch 6: 6.1.1, footnote 95) **Antithesis: adoption of the "feminine principle"**	
Anthropocentrism: "... the philosophical perspective asserting that ethical principles apply to humans only, and that human needs and interests are of highest, and even exclusive, value and importance. Thus, concern for nonhuman entities is limited to those entities having value to humans." (Botzler & Armstrong, 1998b, p. 309). • "a reason/nature dualism underlies the conceptual framework of Western patriarchal cultures"; the "separation of humanity and nature" considered as "the lynch pin of patriarchal ideology" (Davion, 1996, and Salleh, 1993, respectively, in Ch 6: 1, footnote 2) • "the domination of human by human which has produced the very idea of dominating nature" (Bookchin, 1988, Ch 5: 2.1.4.2.1 read together with 4.2.2). **Antithesis: nature has value-for-itself**	
1.1	Anthropocentrism as lead value in the human-nature relationship critiqued either as theory of value in nature, and/or as contributing to the ecological crisis? (Ch 8: 2.1, 2.1.1)
GG 1.1	If the text tends towards anthropocentrism, is the tendency towards "weak" anthropocentrism [grey-green], or "strong" anthropocentrism [more or less grey] (Ch 9: 6.1)
GG 1.1.1	Strong anthropocentrism a. "nonhuman environment primarily as a bundle of natural resources to be managed and exploited for maximal human gain. This is the view that is captured in much of natural

	resource economics..." (Barrett & Grizzle, 1999, pp. 33-34, Ch 9: 6.1) b. "... The ecosystem has only instrumental value, not intrinsic worth....." (Barrett &Grizzle, 1999, pp. 33-34, Ch 9: 6.1) c. "...is characterized by the notion that nonhuman species and natural objects have value only to the extent that they satisfy a "felt preference". A "felt preference" is any fulfillable human desire – whether or not it is based on thought and reflection. ..." [i.e. a "considered preference"] (Botzler & Armstrong, 1998b, pp. 309 – 310, Ch 9: 6.1) d. "takes unquestioned felt preferences of human individuals [such as high consumptive lifestyles, based on an exploitative and extractive use of nature as "a storehouse of raw materials" (Norton, 1984, p. 135)] as determining value" (Norton, 1984, p. 135, Ch 9: 6.3.1)
GG 1.1.2	Weak [or sophisticated, or enlightened] anthropocentrism (Ch 9: 6.1), 6.3.2) a. " ...focuses not on immediate human gratification so much as on the satisfaction of basic needs for the whole human community, present and future ...," (Barrett &Grizzle, 1999, pp. 33-34, Ch 9: 6.1) b. "Given uncertainty about dynamics and interactions, the weak anthropocentric approach often favours caution with respect to resource exploitation ... " (Barrett &Grizzle, 1999, pp. 33-34, Ch 9: 6.1) c. "It also generally rejects the cost-benefit analysis – especially the sort that discounts future costs and benefits – that guides strong anthropocentrist decision-making..." (Barrett &Grizzle, 1999, pp. 33-34, Ch 9: 6.1) d. "and they acknowledge nature's intrinsic value[4]..." (Barrett &Grizzle, 1999, pp. 33-34, Ch 9: 6.1) e. denies "... that preference satisfaction is the only measure of human value" (Norton, 1984, p. 138); considered preferences within a reflected-upon worldview should act as " ... a limit upon felt preferences" (Norton, 1984 p. 138, Ch 9: 6.3.1) f. The environmental ethic of such a reflected-upon worldview would include at least the following resource allocation principles (Ch 9: 6.3.2): i. The theory of value at the individual level is "the prima facie equality of felt preferences of individual humans" (Norton, 1984, p. 146) ii. At the non-individual level, "the value of ongoing human life and consciousness ... [is the] central value principle (p. 146). iii. An ethic of resource allocation should apply to nonrenewable resources as well as to renewable ones (Norton, 1984, p. 145) [indicator 14.2.2], iv. and should also imply a population policy" (Norton, 1984, p. 145) [indicator 12.2]
1.2	Some or all of the following expressions of hierarchy and 'power over' vis-a-vis other human beings critiqued? • Nationalism, statism, parliamentarianism, militarism, classism, sexism, racism, authoritarian bureaucracy in human affairs (Ch 8: 2.1.1) • Instead, there is respect for difference, dialogue? (Ch 8: 6.6.3.3)
1.3	Is 'naturism' critiqued as expression of the idea of hierarchy and "power over" the Other, in this case, nature? (Ch 8: 2.1, 4.2.1, 6.3.3.4) ['naturism', any way of thinking about, or acting towards nonhuman nature "that reflects a logic, values, or attitude of domination" (Warren, 1990, p. 141 in Ch 6: 1.3); the instrumental exploitation, domination, management or destruction of nature]
1.4	Relational metaphors are welcomed, employed, and mechanistic metaphors employed negatively or rejected (Ch 8: 2.1.3)
1.5	The problematic role of language in Self/Other relationships (humans, women, nature, animals) highlighted? (Ch 8: 3.4) • Sexist, mechanistic, aggressive, hostile language in representing human-human relationships, or the human-nature relationship is problematized, avoided?

[4] Note that Norton's version of weak anthropocentrism does not accord intrinsic value to nature (Ch 9: 6.3)

1.6	Rhetoric employed is of liberation: (Ch 8: 2.1.4) a. liberation from oppression for all oppressed human groups [this would include liberation from racism, tribalism, colonialism] b. liberation for women from patriarchy c. liberation for animals from speciesism or inegalitarianism d. liberation for nature from human domination e. liberation for ourselves from our dominator role, amongst other human beings, and in nature.

2	**Western capitalist techno-industrialism as definition of "the good life", is challenged?** (Ch 8: 2.1.1, 6.3.1, 6.3.3, 6.3.3.1)
2.1	Some or all of the following characteristics of western ['North"] capitalist techno-industrialism as definition of 'the good life' are challenged:
2.1.1	Capitalism [e.g. its ecological destruction, alienation, war-propensity, inegalitarianism] problematized/rejected as cultural/socio-economic system? (Ch 8: 6.3.2, 6.3.3.5) a. Market system problematized b. The "economization of reality" critiqued? c. Advanced industrial capitalism on a global scale problematized [globalization]
2.1.2	Industrialism critiqued (Ch 8: 6.3.3.1)
2.1.3	Materialism and consumerism critiqued as end values (Ch 8: 6.3.3.2)
2.1.4	Instrumental science and technology problematized; if not rejected (Ch 8: 3.2, 6.3.3.3)
1.3	Is 'naturism' critiqued as expression of the idea of hierarchy and "power over" the Other, in this case, nature? (Ch 8: 2.1, 4.2.1, 6.3.3.4) ['naturism', any way of thinking about, or acting towards nonhuman nature "that reflects a logic, values, or attitude of domination" (Warren, 1990, p. 141 in Ch 6: 1.3); the instrumental exploitation, domination, management or destruction of nature]
2.2	Alternatives to "North" understandings of "the good life" (Ch 8: 6.3.4, 6.3.5), and conceptual models of development proposed, other than development as capitalist techno-industrialism [i.e. free-market models of sustainable development]? (Ch 8: 6.3.4, 6.3.5; Ch 9: 7.1). [For example, development embracing more radical environmentalism would be one in which "...economy and technology are ecologically sensitive, one whose values and attitudes are 'ecocentric', whose politics are 'ecologistic' and whose view of ecology itself is deep rather than shallow" (Hayward, 1995, p. 2)]
GG 2.2	A grey-green text is more likely to propose "sustainable development" as development model
GG 2.2.1	If the sustainable development model is embraced, does it tend more toward the "stronger" version? (Ch 9: 7.2) a. sensible or even strong environmental sustainability (Ch 9: 3.4.1.4, 3.4.1.3 respectively) b. intra-generational egalitarianism expressed in zero rate of discount for example for non-renewable resources (Ch 9: 3.4.3.4, 3.4.3.5), or "depletion schedules", and steps have been identified, and are being taken, to ensure in the process of depletion, the provision of suitable substitutes for non-renewable resources [indicator 14.2.2 b]. For renewable resources, models have been established which indicate what the maximum sustainable yield of a resource is, so that present generations do not harvest beyond this limit [indicator 14.2.2 a] c. a bottom-up local participation approach in development planning, which involves public participation in both the setting of objectives and their implementation, "since participation is held to be a good in itself – that is, it has intrinsic value. For managerialists, participation has extrinsic value; it is a means to implement sustainable development." (Davidson, 2000, pp. 30-31, in Ch 9: 7.2.1c; see also Ch 9: 4.2.2) d. social restructuring (Ch 8: 6.2) e. a view of nature as possessing intrinsic value and rights (Ch 2: 2.5.3), OR

GG 2.2.2	the "weaker" version? (Ch 9: 7.2) a. weak environmental sustainability (Ch 9: 3.4.1.5) b. a non-zero rate of discounting is adopted in economic decisions pertaining to future economic agents (Ch 9: 3.4.3.5) c. a more top-led, managerialist approach to development planning: (Ch 9: 7.2.1c): "The 'top-down' version ... is that favored by most governments, because, by limiting participation to major stakeholders, including business, local government, interest groups and other nongovernment organizations, they can retain control of the sustainable development agenda. It is a technocratic strategy in that objectives are set by governments using experts, with public participation limited to the implementation stage of policy formulation." (Davidson, 2000, pp. 30-31, in Ch 9: 7.2.1c) d. a reform environmentalism approach [indicator 11.3]

3	**Ecology seen as normative?** (Ch 8: 2.2, 4.1, 4.1.1-4.1.6, 5.3.2.2)
3.1	Specific values in nature are recognized as normative for personal and social values?: a. Self-organization, self-reliance b. Egalitarianism c. symbiosis [seen as contributing to diversity], mutualism, interdependence, co-operation, toleration, harmony rather than conflict d. Diversity, unity in diversity e. Complexity f. Richness (abundance) g. Spontaneity
3.2	Specific values in nature are recognized as normative for environmental sustainability? (also Ch 9: 5.3.2, 5.4) a. Purpose, directionality, self-organization b. Symbiosis [seen as contributing to diversity], mutualism, interdependence, co-operation, harmony rather than conflict c. diversity (complexity, richness understood as abundance) and stability (equilibrium, "balance")
GG 3	A grey-green text might espouse a "deconstructive" or "permissive" ecology (Ch 9: 5.4) a. Nature is described in terms of disequilibrium as normal state: unstable, erratic, discontinuous, chaotic, unpredictable b. The diversity-stability link is problematized, downplayed, or rejected

4	**Spirituality recognized as necessary for personal and social transformation?** (Ch 8: 2.3, 4.3.3.6)
4.1	Living in authentic *community* with other human beings, and in a partnership ethic with nature advocated?
2.1.3	Materialism and consumerism critiqued as end values (Ch 8: 6.3.3.2); lifestyles-of-enough proposed

EPISTEMOLOGY (Ch 8: 3, 3.1)	
A	**B**
5	**Rationality/rationalism as sole way of knowing critiqued, problematized?** (Ch 8: 3.2)
5.1	Instrumental rationality problematized? (Ch 8: 3.2)
GG 5.1	A grey-green inclined text is likely to embrace "economic rationality" (Ch 9: 3.1.3)

2.1.4	Instrumental, or "masculine" science and technology problematized, if not rejected? (Ch 8: 3.2, 6.3.3.3)
5.2	Holistic, relational, dialectical-process epistemologies advocated? (Ch 8: 3.3)

ONTOLOGY (Ch 8: 4)	
A	**B**
6	**A holistic, organismic, purposive view of reality/nature?** (Ch 8: 4.1, 4.1.1-4.1.6)
6.1	Nature as alive, organismic, holistic, non-hierarchical?
6.2	Nature as manifesting consciousness, subjectivity, "mind"?
6.3	Nature as manifesting directionality, and self-organization?
6.4	Nature as tending toward, and maintaining where achieved, greater complexity, diversity, dynamic balance and stability?
GG 6	A grey-green inclined text tends to describe nature in materialist, mechanistic, or economic terms: (Ch 9: 5.1, 5.2, 5.3.1) a. "natural environment" rather than "nature"; "ecosystem" rather than "ecocommunity" b. the economization of reality: nature as resources, environmental goods and services, sources and sinks, a "conservationist" understanding of ecosystem health

7	**Philosophical concern for a reconceptualized human being/nature relationship?** (Ch 8: 4.2, 4.2.1)
7.1	Sharp dichotomy between humans and nature problematized/rejected? (Ch 8: 4.2.2), and human continuity rather than discontinuity with nonhuman nature emphasized? (Ch 8: 4.2.3)
1.1	Anthropocentrism problematized/rejected? (Ch 8: 2.1, 2.1.1)

8	**Philosophical concern for a reconceptualized Self?** (Ch 8: 4.3, 4.3.1)
8.1	Western atomist individualism problematized as a Self/Other relationship? (Ch 8: 4.3.2). For example,
8.1.1	Homo *economicus* implicitly or explicitly critiqued?
8.1.2	Aggression, competitiveness, and related adversarial values critiqued?
8.1.3	A 'male' disconnected sense of Self critiqued?
8.2	The new Self as liberated, re-integrated, embodied, connected? (Ch 8: 4.3.3)
8.2.1	Complete liberation and freedom, especially for women, from all forms of hierarchy, patriarchy, and any other form of domination, or coercion (Ch 8: 4.3.3.1, 6.3.3.3)
8.2.2	Unrepressed re-admittance of the body into what it is to be a fully-functioning human being (Ch 8: 4.3.3.2)
8.2.3	The 'feminine principle': feminine values re-integrated into views of the better male or female person (Ch 8: 4.3.3.3)
8.2.4	An interconnected sense of Self, in which a non-dominating relationship with nature is *also* part of what it is to be an integrated, mature, human being (Ch 8: 4.3.3.5, 5.3.1)
8.2.5	The fully functioning person understood as the whole person: re-integrated, well-rounded (Ch 8: 4.3.3.4)
8.2.6	Real-world, integrated, holistic and ongoing education, geared to the development of the whole person, not merely Homo *economicus*, and including meaningful participation in political life (Ch 8: 6.6.1, 6.6.9, 6.7.1).

ETHIC, WITH FOCUS ON AN ETHIC FOR NATURE	
A	**B**
9	**An account of the ethical generally which differs from standard [or "masculine"] western accounts?** (Ch 8: 5.2)
9.1	A single ethic for people, and for nature (Ch 8: 5.1)

9.2	The epistemological and ontological assumptions underpinning rational-instrumentalism towards nature (women, animals) critiqued (Ch 8: 5.2. 1)
9.3	Emotion (empathy, identification, care, compassion) re-integrated into accounts of the ethical (Ch 8: 5.2.2)
9.4	Context [the particular, the personal, "place"] re-integrated into accounts of the ethical (Ch 8: 5.2.3)
9.5	The body re-admitted into accounts of the ethical (Ch 8: 5.2.4, 4.3.3.2)
9.6	The rights concept in human-human, and human-nonhuman relationships rejected, or problematized, even if employed (Ch 8: 5.2.5)

10	**An ethic for nature in which ecological sustainability is understood as long-range, and wide, not merely as human-instrumental-only environmental sustainability?** (Ch 8: 5.1, 5.5, 5.5.1) The nature ethic described approximates the following description: *An empathetic, caring, respectful partnership ethic, which extends beyond a humans-only focus, recognizing also nature's value-for-itself, now, and on a long-term basis*
10.1	"Long-range" means long-range, not short-term political-economical (Ch 8: 5.5.2) • Some more specific indicator than "future generations" is given, for example, the "seven generations" criterion?
10.2	"Wide" means,
10.2.1	nature's value-for-itself, not only as resources-for-humans, is recognized? (Ch 8: 5.3.1, 5.3.2, 5.3.2.1), In turn, this means that
10.2.2	the scope of the nature ethic is extended conceptually beyond human interests only? (Ch 8: 5.4, 5.4.1, 5.4.2) • To some or all of nature, whether animate, inanimate, individual, species, ecosystem, or ecosystemic process, *because of its value-in-itself*, not merely its resources-for-humans value? • Animal wellbeing (some, or all animals) admitted into the sphere of morality? [animal welfare/liberation]
10.3	Ecological sustainability is to be achieved through any of the following ethical approaches? (Ch 8: 5.5.3, 5.5.4, 6.6.1) a. Assigning legal standing to sue, thus rights, to some of nonhuman nature b. Biospherical egalitarianism – empathetically respecting every life form's equal or same right to "live and blossom" c. Actively employing human creativity to restore and maintain biological evolution towards mutuality, diversity, and increasing subjectivity d. Practising an ethic of care e. Practising a non-violent, partnership ethic with nature which protects the life basis for all living beings
GG 10.3	A grey-green text is more likely to emphasize the concepts "conservation" and "stewardship" (Ch 9: 7.3). [To establish whether these concepts are anthropocentrically or ecocentrically understood, ask the questions What? For whom, and For how long? For a quantitative indicator of the For how long? question, see indicator 14.14]
	Earlier relevant criteria/indicators which might be helpful in assessing a text's ethic for nature are – 1.1 Anthropocentrism rejected? 1.3 Naturism problematized? 3.2 Specific values in nature are recognized as normative for environmental sustainability? a. Purpose, directionality, self-organization b. Symbiosis [seen as contributing to diversity], mutualism, interdependence, co-operation, harmony rather than conflict c. Diversity (complexity, richness understood as abundance) and stability (equilibrium, "balance")

REAL-WORLD SEEING GREEN POLITICS IN AN ECOLOGICAL SOCIETY (Ch 8: 6, 6.1) [N.B. These are to be understood within the context of seeing green's legitimating narratives, epistemology, ontology and ethic, described above]	
	SOME VIEWS ON SOCIAL REFORM
A	**B**
11	**Fundamental, ecologically-informed, post-patriarchal reformation of society's values and structures proposed?** (Ch 8: 6.2, 6.2.1, 6.2.2, 6.3, 6.3.1, 6.3.4, 6.3.5, 6.5.5, 6.6.2)
11.1	**Values**: ecologically-informed values [indicator 3.1], and/or post-patriarchal social values advocated (Ch 8: 6.2.1, 6.6.2), for example, a. The 'feminine principle' recognized b. Egalitarianism c. Emphasis on the co-operative, not the competitive: interdependence, solidarity, mutual aid, complementarity, reciprocity, partnership valued d. Pluralism, diversity, difference as asset
11.2	**Structures:** ecologically-informed, and/or post-hierarchical forms of political and socio-economic organization advocated (Ch 8: 6.2.2)
11.2.1	More radical indicators: (Ch 8: 6.2.1) a. Rejection of statism, nationalism, patriotism, and bureaucracy as forms of hierarchy and patriarchy, in favour of ecologically-based regions, and radical self-management [direct or face to face democracy] in all spheres of our everyday lives b. A rejection of the city in favour of decentralized, well-rounded, ecologically-balanced communities c. A rejection of a capitalist, market, and centralized economy in favour of local, community-managed, regionally-appropriate, self-reliant, outside the market economies which utilize eco-technology d. A rejection of the patriarchal family in favour of "liberated sexuality" [understood as practised between equals] (Bookchin, 1967/1968, in Bookchin, 1974, p. 41, Ch 5: 4.3)
11.2.2	Less radical indicators (Ch 8: 6.2.2): Emphasis on a. human scale instead of gigantism b. unbundling and decentralization instead of concentration c. egalitarianism, local autonomy, self-management instead of hierarchy and bureaucracy d. re-integration instead of separation or marginalization
11.3	Reform environmentalism alone rejected as insufficient to resolve the ecological crisis? (Ch 8: 6.2.3)
GG 11.3	A grey-green text is more likely to espouse "reform environmentalism" (Ch 8: 6.2.3), which holds that there is no need for radical reform of those structures of society which embody anthropocentric attitudes [e.g. capitalism which views nature-as-resources-for-humans]. Instead, the following kinds of measures are advocated: "...enacting legislation, changing public policy, increasing education, altering tax laws, returning 'public lands' to private ownership, emphasizing moral obligations to future generations of humans, promoting wise 'stewardship' of nature, and otherwise encouraging more prudent use and more equitable allocation of natural resources" (Zimmerman, 1993, in Zimmerman et al., 1993, p. viii, in Ch 8: 6.2.3), OR "For some people, especially optimists and those with an interest in continuing 'business as usual', what is needed is to modify present practices – for example, by introducing lead-free petrol and ozone-friendly aerosols – but without questioning the need for the products, let alone the underlying values of the resultant green consumerism or green capitalism. ... Common to reformist positions in general, ...is the view that concern with the environment can appropriately and adequately be taken up within prevailing modes of thought and action. ..." (Hayward, 1995, p. 2)

SOME VIEWS ON THE NATURAL ENVIRONMENT	
A	**B**
12	**Policies place long-range, wide, ecological sustainability at least on a par with, if not ahead of social or economic sustainability?** (Ch 8: 6.4, 6.4.1, 6.4.2)
12.1	Policies tend to follow a 'stronger' environmental sustainability approach (Ch 9: 3.4.1.1 – 3.4.1.3)
GG 12.1	A grey-green text is more likely to tend towards "sensible" or "weaker" versions of environmental sustainability (Ch 9: 3.4.1.4, 3.4.1.5, 3.4.1.6, 3.4.1.6.1). Conceptual answers to the questions What is to be sustained of the natural environment, and to what extent?, For whom?, and For how long? are likely to tend toward: a. What is to be sustained? Substitutability between the various types of capital – natural (renewable and non-renewable), human-made, and human-social, is acceptable *up to a point*, after which it is not[5]. b. For whom is the natural environment to be sustained? For people c. For how long is the inter-generational equity to last? The next generation only These conceptual answers require that some kind of formal in-country accounting other than GDP is undertaken to keep track of any transformation of "natural" capital into "human" capital (Neefjes, 2000, p. 29 in Ch 9: 3.4.1.6). Indicators of such natural resource accounting are provided at indicator 14.2
12.2	Human population growth rate stabilized/reduced (Ch 8: 6.4.4, Ch 9: 6.3.2 (d)) a. a weak (enlightened) anthropocentrism position [indicator GG 1.1.2] would set a population policy for a generation as a whole based on the carrying capacity of the environment
12.3	Excessive [i.e. non-vital] intervention into natural processes reduced, or at least, precautionary principle applied (Ch 8: 6.4.5; Ch 9: 5.3.2, 5.3.3);
12.4	Biodiversity and its habitat protected (Ch 8: 6.4.6)
12.4.1	Large areas of "free nature[6]" set aside from human techno-industrial progress
12.4.2	Industrial activities which threaten wide ecological sustainability scaled down
12.4.3	Biotechnology/genetic modification problematized
12.5	Reduced resource consumption advocated: energy as example (Ch 8: 6.4.7)
12.5.1	Stabilized and reduced use of non-renewable energy advocated (Ch 8: 6.4.7.1)
12.5.2	Increased reliance on renewable energy advocated (Ch 8: 6.4.7.2)
12.5.3c	Research into alternative energies increased (Ch 8: 6.4.7.3)
12.5.4	Nuclear energy problematized/rejected (Ch 8: 6.4.7.4)
12.5.5	Energy provision and storage decentralized, democratized (Ch 8: 6.4.7.5)
12.5.6	Energy-saving transport systems advocated (Ch 8: 6.4.7.6)
12.6	Reciprocity in land use: agriculture as example (Ch 8: 6.4.8) a. Concern for the protection of human scale in farming b. Concern for animal welfare/rights in agriculture c. Preference for organic production methods which protect soil fertility d. Preference for organic, non-genetically modified foods
12.7	Consciousness-changing environmental education advocated? (Ch 8. 6.4.10)
12.8	Participation in global control measures to promote natural environment protection? (Ch 8: 6.4.3)

13	**Animals are treated ethically? [animal liberation/welfare]** (Ch 8: 6.4.9)
13.1	Animal experimentation including vivisection, and product-testing, eliminated completely, or almost completely (Ch 8: 6.4.9.1)
13.2	Commercial animal agriculture totally dissolved, or radically reformed (Ch 8: 6.4.9.2)
13.3	Wildlife: commercial, culling and sport hunting, trapping, and related trade totally or partially condemned, except in cases of vital human need (Ch 8: 6.4.9.4)

[5] Thus, "efforts should be made to define critical levels of each type of capital, beyond which concerns about substitutability could arise and these should be monitored to ensure that patterns of development do not promote a total decimation of one kind of capital no matter what is being accumulated in the other forms of capital" (van Dieren, 1995, p. 103, in Chapter 9: 3.4.2.4)
[6] In the *deep ecology* meaning of this phrase (Ch 4: 4.1.4)

13.4	No animals confined for education, or used in entertainment (Ch 8: 6.4.9.5)
13.5	Animal torture strictly punishable (Ch 8: 6.4.9.6)

SOME VIEWS ON THE ECONOMY	
A	**B**
14	**The economy is ecologically re-oriented?** (Ch 8: 6.5, 6.5.1)
2.1.1	Capitalism [e.g. its ecological destruction, alienation, war-propensity, inegalitarianism] problematized/rejected as cultural/socio-economic system (Ch 8: 6.3.2, 6.3.3.5) a. Market system problematized b. The "economization of reality" critiqued? c. Advanced industrial capitalism on a global scale problematized [globalization] (Ch 8: 6.3.3.5)
14.1	Ecological limits to economy recognized? (Ch 8: 6.5.2) • A National Sustainable Development Strategy has been drawn up as agreed at the 1992 Earth Summit? (Ch 9: 2.5)
14.2	Natural resource accounting introduced as formal part of development planning? (Ch 8: 6.5.3)
14.2.1	A System of integrated Environmental and Economic Accounting [SEEA[7]] to account for the stocks and flows of their environmental resources in "satellite accounts" parallel to their country's System of National Accounting [SNA] has been introduced as agreed at the 1992 Earth Summit (UN 2000, p. 4, par. 4, p. 162, par. 431) (Ch 9: 3.4).
14.2.2	If yes, and assuming the adoption of "sensible" or "weak" versions of environmental sustainability [indicator GG 12.1], to keep track of any transformation of "natural" capital into "human" capital (Neefjes, 2000, p. 29 in Ch 9: 3.4.1.6), do any of the following exist: a. for renewable resources, models which indicate what the maximum sustainable yield of a resource is, so that present generations do not harvest beyond this limit (Ch 9: 3.4.1.6.1, 6.3.2(e)) b. for non-renewable resources, "depletion schedules", and steps have been identified, and are being taken, to ensure in the process of depletion, the provision of suitable substitutes (Ch 9: 3.4.1.6.1, 6.3.2(f)) c. measures to "green" GDP as indicator of human welfare? [e.g. GDP is "pruned" to account for the costs of natural capital depletion, and for degradation [through pollution for example] as depletion of natural capital] (Ch 9: 3.4.2, 6.3.2 by implication)
14.3	Non life-affirming economic activities problematized (Ch 8: 6.5.4)
14.4	Base-democratic production: What should be produced, where it should be produced, and how it should be produced to be determined and controlled by those involved (Ch 8: 6.5.8)
14.5	Community-based economic activities and self-reliance favoured (Ch 8: 6.2.1, 6.2.2)
14.6	Ecologically-appropriate local production for local use encouraged (Ch 8: 6.5.7)
14.7	Production for needs not profit encouraged (Ch 8: 6.5.6)
14.8	Waste generation, pollution, and wastefulness in production, consumption, and disposal problematized, reduced/eliminated. At the least, the "polluter pays" principle is applied (Ch 8: 6.4.5)
14.9	Instrumental technology problematized (Ch 8: 6.3.5, 6.5.10)
14.9.1	Non-demeaning, non-exploitative, technology demanded in the workplace
14.9.2	"Soft"/alternative technologies within different understandings of development favoured
14.10	Work provides creative activity, not meaningless labour (Ch 8: 6.5.9)
14.11	A basic social income for all (Ch 8: 6.5.11)
14.12	Misleading encouragement to materialism and consumerism is critiqued (Ch 8: 6.5.12)
14.13	Fair [ethical] trade/development aid is practised (Ch 8: 6.5.13)
14.14	More than one future human generation included in economic decisions (Ch 8: 5.4.1(1), 6.6.1, 6.6.10;

[7] In 1993, the UN Statistics Division set out an SEEA framework. Thereafter, parts of the SEEA were tested in different countries (UN 2000, Preface, p. 1), and the results of the trials brought together in the interim UN (2000) "Integrated environmental and economic accounting. An operational manual". (UN 2000 p. 4, par. 13)

	Ch 9: 3.4.3.4, 3.4.3.5). [A quantitative indicator here is a discount rate in economic decisions which affect future generations set at, or close to, zero]

SOME VIEWS ON LOCAL AND GLOBAL SOCIAL COHESION	
A	**B**
15	**Living in solidarity is advocated?** (Ch 8: 6.6, 6.6.1)
15.1	Communitarian living advocated. Whether the more radical forms [such as eco-communes, see also indicator 11.2.1], or less radical forms [indicator 11.2.2] are advocated, all forms insist on the idea of *community existing in harmony with nature* as essential to genuine self-realization (Ch 8: 6.2.2, 6.7.1)
15.2	Full emancipation for women [women's liberation] (Ch 8: 6.6.1, 6.6.4; see also indicator 8.2.1)
15.3	Post-patriarchal gender roles (Ch 8: 6.6.1, 6.6.4)
15.4	Multi-culturalism valued (Ch 8: 5.4.1(1), 6.6.1, 6.6.5)
15.5	Fundamental rights of, and social inclusion of the marginalized, the vulnerable, the sexually different recognized (Ch 8: 6.6.1, 6.6.6, 6.7.1, 6.7.4)
15.6	Non-patriarchal, holistic, close-to-home health care (Ch 8: 6.6.1, 6.6.7)
15.7	Re-integrated, ecologically-harmonious human habitat spatial planning (Ch 8: 6.6.1, 6.6.8)
10	An empathetic, caring, respectful, partnership ethic with nature, which extends beyond a humans-only focus, recognizing also nature's value-for-itself, now, and on a long-term basis (Ch 8: 6.6.1)

16	**Non-violence, and radical peace are advocated?** (Ch 8: 6.6.1, 6.6.3)
16.1	Militarism, nuclearism, and threat of force critiqued; instead, radical peace, total disarmament, locally-organized non-violent social defence (Ch 8: 6.6.3.1)
16.2	No structural violence (Ch 8: 6.6.3.2)
16.3	No physical violence; no hate behaviour, no violent speech, no vilification; instead, dialogue (Ch 8: 6.6.3.3, 6.6.3.4)
14.3	Non life-affirming economic activities such as weapons-production, problematized (Ch 8: 6.5.4)

SOME VIEWS ON THE POLITICAL PROCESS	
A	**B**
17	**Grassroots ["direct"] democracy is advocated?** (Ch 8: 6.7, 6.7.1)
1.2	Some or all of the following expressions of hierarchy and 'power over' vis-a-vis other human beings critiqued? • Nationalism, statism, parliamentarianism, militarism, classism, sexism, racism, authoritarian bureaucracy in human affairs (Ch 8: 2.1.1) • Instead, there is respect for difference, dialogue? (Ch 8: 6.6.3.3)
17.1	*Real* citizenship, not participative democracy now and then, promoted (Ch 8: 6.7.1, 6.7.2)
17.2	Non-violent, direct action, including civil disobedience permissible, required even (Ch 8: 6.7.1, 6.7.3)
17.3	Transparency, public accountability, responsive bureaucracy demanded (Ch 8: 6.7.1, 6.7.5)
17.4	Privacy of personal data protected (Ch 8: 6.7.1, 6.7.5)

18	**Living out/enacting your personal moral beliefs in the public-political sphere encouraged? ["the politics of lifestyle"]** (Ch 8: 7, 7.1, 7.2)
18.1	Self-work [reviewing your worldview; freeing yourself from "patriarchal" programming] advocated (Ch 8: 7.3)
18.2	Voluntary simplicity in lifestyle [sometimes as expression of spirituality – criterion 4]
18.3	Economic boycott of unecological goods and services, including • total or partial moral veganism, vegetarianism (Ch 8: 6.4.9.3, 7.2)
17.2	Non-violent, direct public action, including civil disobedience (Ch 8: 6.7.1, 6.7.3)

3.5 Testing the seeing green criteria

To achieve the state of content analysis perfection he envisages, Bereleson (1952) allows that definition and redefinition of hypotheses, categories and indicators might be necessary. It can even be that close reading of text suggests new ideas, from which new categories and indicators are inferred (1952, p. 164, p. 167). The "workability" of the criteria was assessed simultaneously with their application during the reading of Vision 2030 in Chapter Eleven. The results are presented there, in section 7.

4 Criteria for assessing research

In this section, I reflect on what criteria could be considered to assess the plausibility of the results of a qualitative, and interpretive content analysis, such as undertaken in this study. The traditional criteria by which to judge social science research are reliability, validity and generalizability (4.1). Ecosystemic (Rappaport, 1987, 1990) and critical social science research schools frequently add the possibility of social action as assessment criterion (4.2).

4.1 The traditional criteria of validity, reliability, and generalizability

The problem of **validity** is this: – is the "instrument" [in this case, the criteria and indicator checklist] measuring what it is intended to measure? I have attempted to address this problem by providing references from Chapters Three to Eight, and Chapter Nine, for the categories and indicators chosen.

The problem of **reliability** is a problem of "objectivity". I see a twofold "objectivity" problem in answering research question 2. The first relates to the criteria themselves. There is a subjective element in what a writer chooses to include or exclude as a seeing green criterion. Other writers' criteria lists (Chapter Eight, section 1.1) varied in number from O'Riordan's (1981) eight characteristics of ecocentric-environmentalist ideologies to Goldsmith's (1992) list of 66 principles comprising an ecological worldview. My list of 18 seeing green criteria is no exception to such selectivity. It has hopefully been reduced though, and "inter-rater" consistency increased, by enabling the reader to compare my criteria with theirs.

There is of course, also a subjectivity present in the indicators selected to represent the criterion, as well as in the depth of the discussion on which the indicator is based. I noted in Chapter Eight, section 1, that not all issues encountered in my base green data reading had been captured in a seeing green indicator, giving as example, green views on forestry, fishing and mining. In retrospect, I see in the list, a tendency perhaps, to over-discuss topics relating to seeing green's philosophical, psychological and ethical demand for a changed self, self/other and human-nature relationship, and to under-represent as indicators, and under-discuss, real-world issues such as poverty alleviation, or fiscal policies. This must be interpreted not as seeing green's lack of attention to such issues, but as "clues to/traces of" my own interest in environmental-philosophical/psychological, rather than sociological issues. The criteria and indicators I have created, represent *one* possible sample. Other researchers would no doubt create different indicators from the base data chapters.

The second "objectivity problem" lies in applying the criteria to the text. It is generally agreed in ecosystemic environmental psychology research [and social constructionist psychological research], that there is no possibility of the researcher's being able to work absolutely objectively with the text/s of the study. The researcher cannot do otherwise than approach the text from some perspective: "No human being can step outside of her or his humanity and view the world from no position at all" (Burr, 1995, p. 160), a viewpoint endorsed in "seeing green". In addition, objectivity is impossible for a researcher when searching for [on her view], implicit assumptions, and "absences" in a text. Some

intuition is inevitable: when "look[ing] for 'implicit' themes suggested by the *absence* of certain terms .... a degree of intuition *must* be deployed..." (Parker, 1992, p. 126, his italics).

Coyle (1995, pp. 255-256) has suggested that one way of not closing down all meaning in the text to the researcher's own particular interpretation, is to present, together with his/her textual interpretations, as much as possible of the relevant text – to offer "significant amounts of raw data" in order to show how it supports the "reading" he/she has offered: "Readers can thus judge for themselves whether the interpretations are warranted and can offer alternative interpretations". I have followed this suggestion. Another way in which a researcher can approach "objectivity" is through reflexivity and transparency[8]. That is, the researcher openly acknowledges his/her worldview, his/her reasons for involvement in the research, and seeks to be continually aware of, and make clear to the reader, how these might be affecting the research process. I have sought to make clear throughout this study, that my own worldview tends towards "dark green".

The extent to which a study's results can be **generalized**, is dependent upon the sampling procedure used. The sampling procedure for "seeing green" was described in Chapter Two, section 1.2. I suggest that, judging by the generous measure of correspondence between the seeing green worldview derived in Chapter Eight from the sample database (Chapters Three to Seven), and the elements of seeing green described by other authors in Chapter Eight, the criteria should be generalizable to other texts. But that would be a matter for further research by others.

The "workability" of the criteria and indicators, as opposed to their validity, reliability, and generalizability, is assessed throughout Chapter Eleven, and summarized in section 7 there.

4.2 Social usefulness/action as additional criterion

Ecosystemic[9]/social constructionist research schools, and critical social research schools, also suggest that the work should have social usefulness. The purpose of the research is not to discover the "truth", but to highlight its real-life usefulness, and the intervention, change, or social action which it suggests (Burr, 1995, p. 171). The flavour of this social action varies in the community psychology action research/social constructionist account. According to Powers (2001, p. v) it is "radical political action", while Gergen (1999, p. vi) rather less vigorously phrases it as offering "opportunities for creative deliberation and action", and of finding ways of "creatively constructing alternatives or additions to existing beliefs and practices". Burr's (1995, p. 162) version is "any usefulness that the researcher's 'reading' of a phenomenon might have in bringing about change for those who need it".

As already indicated in section 2.1.3.2 of this chapter, my hope is that the seeing green/grey-green criteria developed in this study, and their application to *Namibia Vision 2030,* will better enable readers to actively 'decode', or deconstruct the "framework of interpretation" proposed in it, enabling them in a reflected-upon way, to agree with it, reject it outright, or negotiate with it in some other way. In other words, to "see", and agree or disagree with the "preferred" view of reality which *Namibia Vision 2030* offers, and take political action (which on the green view, includes one's private life actions!) accordingly.

As a further modest contribution to social usefulness, I suggest in the final chapter, how environmental psychology might better help in resolving the ecological crisis.

[8] Bateson's (1979, p. 29) dictum was that "… right or wrong, the [researcher's] epistemology shall be explicit. Equally explicit criticism will then be possible". By epistemology, Bateson meant, worldview
[9] For example, as applied in the action research of community psychology