Humans and Nature: A Spectrum Not a Dichotomy

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The anthropocentric/biocentric dichotomy

Among the most significant, controversial and difficult concepts for environmental educators and students alike to come to terms with are those of the anthropocentric (or totally human centred) view of the environment compared with the biocentric (or totally non-human centred) attitude to the environment. The concepts are significant because they represent profoundly different philosophical positions and also because they may have far reaching implications and, therefore, consequences in practice. Eckersley (1992, p.26) says:

> ... the most fundamental division from an ecophilosophical point of view is between those who adopt an anthropocentric ecological perspective and those who adopt a nonanthropocentric ecological (or ecocentric) perspective[1].

They are controversial because both views have been said, by different authors, to be either totally disastrous or absolutely redeeming for the planet. For instance, in his recent authoritative and well received book *Towards A Transpersonal Ecology*, philosopher Warwick Fox writes (1990, p.13)

> ... anthropocentrism represents not only a deluded but a dangerous orientation toward the world.

and adds (1990, pp.18-19) that it is

> ... empirically bankrupt and theoretically disastrous, practically disastrous, logically inconsistent, morally objectionable and incongruent with a genuinely open approach to experience.

Yet Jeff Bennett, expressing the anthropocentric view in a volume entitled *Reconciling Economics and the Environment*, says that

> ... a complete property rights system over ecosystems, and even individual species making up an ecosystem, can ensure their conservation. (Bennett & Block 1991, p.272)

and Weston (1986, p.3) quotes Fleischman approvingly that

> Nature will not miss whooping cranes or condors or redwoods any
> more than it misses the millions of other vanished species.
> Conservation is based on human value systems. Its validation lies in
> the human situation and the human heart.

Similarly, bio- or ecocentric attitudes have both their proponents and their
opponents. The former includes philosophers in the rapidly growing Deep
Ecology or Transpersonal Ecology movement typified by Warwick Fox,
building on the work of Arne Naess, George Sessions, Bill Devall and many
others. It also includes political scientists, such as Robyn Eckersley who
argues (1992, p.185) that

> ... only in those political communities in which an ecocentric
> sensibility is widely shared ... will there be a general consensus in
> favour of the kinds of far-reaching substantive reforms that will
> protect biological diversity and life support systems.

On the other hand, ecologically minded socialists of various persuasions
including Andre Gorz, Raymond Williams, David Pepper and others, and
internationalists such as Martin Ryle and Rudolf Bahro argue that a
preoccupation with ecology and eco- or biocentrism diverts attention from the
essentially social origins of environmental degradation. They argue that the
objective of the environmental movement should be the full realisation of
human autonomy within a healthy physical environment and that human
domination of nature will cease when some groups of humans cease to
dominate others - whether that is upper class dominating lower, first world
dominating third, or men dominating women.
Weston (1986, p.14) says that

> To base environmental campaigning on a concern for 'nature' is, then,
> to ignore the social construction of the environment and the most
> important environmental problems with which we are currently faced.
> For it is we as a society who shape our environment by deciding
> which social and economic priorities should prevail; we choose our
> environment rather than have it imposed upon us by nature. Whether
> we live in the centre of a large city or on the edge of a forest, the
> physical environment starts at our front door, making environmental
> issues those which are concerned with our surroundings - both
> physical and social - rather than those which are in some way related
> to 'nature'.

That the concepts are difficult seems self evident. As human beings we
cannot dismiss easily our culture, our psychology and everything that enables
us to form perceptions and then make judgements about ourselves and the

world outside ourselves. If anthropocentrism means viewing the world from a human vantage point, it seems impossible *not* to have an anthropocentric view point. Yet many of us would wish to claim at least a partial biocentric view, to place ourselves within nature and to respect the interests of other living creatures so far as we can and so far as we understand them.

One of the difficulties is that the distinction between anthropocentric and biocentric has both empirical and normative content. In living our lives, we use resources, develop attitudes to parts of the environment and to our fellow human beings. But we also come to believe that certain things *ought* to occur - be they ownership of the environment, market trading in environmental goods, conservation, preservation, or an identification with nature.

The distinction between 'is' and 'ought' is one of the most difficult and confusing of all philosophical issues, but in this case it hides two further points. As humans, we must feed, clothe and shelter ourselves. We must also live in the society in which we find ourselves, which means we must earn a living and allow others to do so in ways which suit them. Our individual impacts on the environment will inevitably be greater than that needed simply to keep ourselves alive. The second aspect is a more psychological, but equally practical, one. Sagoff (1990, pp.66-67) points out that

> The problem is a general one. It arises ... because of broad values we share about nature, the environment, health, safety and the quality and meaning of life. Many of us are concerned, for example, that the workplace be safe and free of carcinogens; we may share this conviction even if we are not workers. And so we might favor (sic) laws that require very high air-quality standards in petrochemical plants. But as consumers, we may find no way to support the cause of workplace safety. Indeed, if we buy the cheapest products, we may defeat it.
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> We may be concerned as citizens, or as members of a moral and political community, with all sorts of values - sentimental, historical, ideological, cultural, aesthetic, and ethical - that conflict with the interests we reveal as consumers, buying shoes or choosing tomatoes. The conflict within individuals, rather than between them, may be a very common conflict. The individual as a self-interested consumer opposes himself (sic) as a moral agent and concerned citizen.

This paper is concerned with the teaching of these issues and, as such, does not attempt to argue its position on formal philosophical grounds. Its main purpose is to show practically that people can choose to be either more or less biocentric in outlook and usually, or perhaps even necessarily, do make a

range of such choices in different facets of their environmental interactions, i.e. in the way they live their lives, in what they argue and struggle for environmentally and economically. It also aims to show that the various choices which individuals do make have a range of practical outcomes for the environment. In other words, we argue that the concepts 'anthropocentrism' and 'biocentrism' lie on a continuum.

The ideas, information and concepts we present in this paper will, we believe, be useful to teachers of Environmental Studies at all levels from High School to Postgraduate, since it attempts to ground these philosophical, ethical and political ideas in the everyday experiences and educational processes of our lives.

Humans and the environment

There are two senses of 'the environment' with which Environmental Education is concerned. The first is that environment which we often perceive to exist and function independently of humans and which would continue to exist and function (albeit differently, of course) if all human beings became extinct. It is, in other words, simply the biophysical world in all its rich manifestations. But, looked at in this way, the biophysical world is not, by definition, *of* human beings; it is outside ourselves. Yet, no living thing existing in that biophysical world, so far as we are aware, possesses the mental ability to conceive of the physical world surrounding it as ' the environment'.

This brings us to the second sense of 'the environment'. Description and analysis of the biophysical environment is the domain of physics, chemistry, geology, biology and their numerous subdisciplines. Thus, concepts which we use to analyse, describe and make predictions about the biophysical environment are human constructs. Atom, nucleus, crystals, rocks, rivers, trees, bacteria are merely words, products of the human brain imposing a particular human meaning and interpretation on natural phenomena of the world. There is, we suppose, some reality to which the words refer, but the *organisation* of them into the category 'tree', say, is something done by humans via language. In addition, other components of the biophysical environment can be described by humans when there is no precise physical reality - 'ecosystems', 'climate', 'hydrological cycle', for instance. These are human concepts. 'The environment' in the second sense referred to is just such a concept.

There is, therefore, no such thing as 'the environment' in the biophysical world. As a uniquely human concept it refers to the collection of biological and physical phenomena that we take to be the biophysical world outside ourselves and links us to it. It is when we use the term 'the environment' in this way that we are able, and inevitably do and must, make value judgements about it.

An analogy may help. Compare this interpretation of 'the environment' with something more tangible. We all know what 'the weather' is. We see it, feel it, talk about it and experience its effects all the time. We try to predict it. We sometimes try to change it. But 'the weather' is not a concrete entity in the way that rain, wind, fog, sunshine are. 'The weather' is a collection, a mixture, a sequence of phenomena including rainfall, temperature, sunshine, wind and much else. It is all these spread over time and place. It is also the absence of them as much as their presence. But the same sequence of phenomena called 'the weather' may be judged quite differently by people with different interests, life histories, physiologies and opportunities. 'Good' weather might mean rain to Australian farmers, sunshine to European ones. Farmers in general will have different perceptions of 'good' or 'bad' weather from, say, skiers or cricketers. We interpret 'the weather' according to many different criteria, which go beyond mere preferences to our physiologies and our social and economic circumstances. Indeed, our personal preferences are largely shaped by the life circumstances in which we find ourselves.

Much of the recent emphasis on things environmental has been on what is going wrong with our environment. That there can be something about the environment which can be considered as right or wrong locates the sense of 'the environment' as being the second we have described; that is, as a human concept within and about which we can and must make value judgements and about which no other species can possibly make value judgements. Under particular environmental conditions a tree, say, will die, or a river will dry up or become unable to sustain life. But only sentient creatures have a conscious feedback loop by which they can become aware of the deteriorating conditions of their life. Whilst sentient creatures might strive to satisfy their interests, they have, so far as we can tell, no concept of 'the environment' as do humans and, therefore, no ability to make value judgements about it *as* a concept. Memory would allow sentient creatures to be aware of better/worse conditions and to be more or less contented depending on what their environmental conditions are, but, without conceptual ability, they are unable to put a value on those conditions. The physical world and non-sentient creatures merely *are*. Deep ecologists have tried to rob these conclusions of much of their strength, indeed dismissing their relevance, by pointing out that everything human beings say, do, believe, conceive of and argue for is necessarily anthropocentric. We are convinced, however, that they cannot be so easily dismissed partly because of the arguments above and partly because the consequences of such conclusions are so profound. Environmental quality, since it is a human concept based on human values, is fundamentally anthropocentric. Any valuation of 'the environment' may be for ourselves or it may be for on behalf of any other species, but it is always a human action using criteria decided by humans (although these criteria are likely, of course, to be based on biological and physical 'rules').

The criteria we use are often other than those concerned with simple survival. Consider the case of a small, reasonably circumscribed part of the environment such as a lake. If humans collect fish or other living things from it for food, then the environment that is the lake is good from our point of view if it maximises the number of individual fish or the total mass of fish which can be caught or collected and used by us for the purpose intended, which in this case is to help keep us alive and is, therefore, compatible with any definition of biocentric actions or attitudes.

But we might decide that, although we will not fish the lake for food we will fish it for fun, an archetypically anthropocentric attitude and behaviour; the action and the outcome are the same although the intention is different. There is no way of distinguishing between the two except by asking the people concerned, i.e. by putting human motives into the equation.

Alternatively, we might wish to fish for one particular species, either as food or for fun and hence set out to maximise the number of that species at the expense of all others. Or we might decide that we like the look of the trees growing around the lake, or its size and shape; in other words, the lake may have some aesthetic appeal, and we might take steps to preserve the lake much as it currently is. Related to this, humans might wish to use the lake for sailing or waterskiing on, for swimming in, or for some other recreational purpose. We might wish to drink the water of the lake, use it for irrigation or employ it for some industrial purpose. We would, therefore, not want its chemistry or biology upset in any significant way. We might be relying on the fish in the lake to restock another lake. Or we might suspect that some *future* benefits might flow from keeping the lake much as it currently is.

In each of these cases humans might deliberately set out either to *preserve* the lake as it is, to *conserve* it in a way which allows continued ecological change, or to *modify* it in quite minor ways which maximise our own perceived interests, sometimes at the expense of some or all of the other living things in and around the lake and sometimes to their decided advantage. Either way, it is humans who are taking the relevant decisions and although we have almost always done so on criteria which suit ourselves rather than which might benefit any other species or the inanimate environment, these criteria cannot be deduced from the actions themselves. We have to know the motives. Furthermore, we humans have rarely even considered our own long term interests or those of future human generations. Not knowing what our future needs might be, we do not have the ability to assess in detail even our own long-term interests. The most we are capable of deciding for future generations is that the general stability of the planet should be at least no worse in the future than it is now, and preferably better, and that future generations' choices should not be diminished compared to our own. But since, as we have seen, different people can have very different definitions of 'quality of life' or 'environmental quality', objective definitions - even for human beings - are hard to arrive at. When we start to extend this to

quality of life for other living creatures, we are on shaky ground indeed. Nonetheless, this is what we must try to do if we wish to preserve and enhance the biophysical environment.

Apart from the ability it confers on us to evaluate the environment, our conceptualisation of the environment has another, very significant implication. It allows us, if we so choose, to conceive of ourselves as part of the biophysical environment. Paradoxically, our ability to conceptualise allows us both to separate ourselves from the biophysical world outside ourselves and to position ourselves within it. This has important implications for our discussion of anthropocentrism and biocentrism as we shall see.

It is the essence of the currently emerging principles of environmentalism that the interests of humans, and the maintenance and enhancement of *our* quality of life, are best served by minimising ecosystem instability and therefore considering, as far as possible, the interests of other living things. We are also coming to believe, on moral and ethical grounds apart from any considerations of our own survival, that other living things have a right to exist for their own sake and that human activities should not jeopardise this right, nor lower the quality of life of other living creatures.

In other words, modern environmentalism is concerned both with

i)   maintaining and enhancing the quality of human life - which is intimately bound up with a valuation of the biophysical world through our conceptualisation of 'the environment' as existing almost exclusively for human use, although many aspects of the biophysical world might also benefit. This is usually referred to as an anthropocentric approach to the environment;

ii) maintaining and enhancing planetary and ecological stability - which is intimately bound up with a valuation of the biophysical world through our conceptualisation of 'the environment' as an end in its own right, which would have consequent benefits for human beings too. This is usually referred to as a biocentric approach to the environment.

But these two objectives are not, in fact, clearly divided for three reasons:

1.   They depend in practical terms on one another. Humans need planetary and ecological stability but this in turn depends on *human* valuations and activities. There is no part of the earth that is free from the impact of human beings. Even parts which can be said to have suffered little or no human intervention are in that state as a result of human decision-making. Planetary and ecological stability, therefore, require that the human environment is sufficiently productive of the means to conserve. This again links human quality of life, including economic well being, to the biophysical world. There is little point in a biocentric outlook if

we are so impoverished economically that we must degrade and exploit the environment in order simply to survive. And restoration of the environment (whether from anthropocentric or biocentric motives) requires considerable human expenditure, of intellectual effort, energy and material resources. Humans are part of the biophysical environment, and the consequences of that flow both ways.

2. They are inextricably related in our psychology and physiology. We survive physiologically through interactions with the biophysical environment. And we have seen that our psychological ability to envisage the environment as a concept has profound consequences for ourselves and for the biophysical environment.

3. Ethical valuations of ourselves and of living and non-living parts of the environment bind the two objectives inextricably together.

Fully understanding the implications of these three assertions is a philosophical problem of immense difficulty and subtlety which has been discussed at length by other authors. We contend here merely that certain practical implications for teachers and students follow from these assertions.

In order to survive, human beings, like members of any other species, have impacts on the biophysical environment in which we live which can be - and for teaching purposes often are - divided into five categories:

- land and water use;
- usage and exploitation of other material parts of nature;
- pollution;
- usage and exploitation of living parts of nature;
- the generation and use of energy.

Each one of these is absolutely unavoidable given that humans actually do live on the planet Earth and that, like every other species, our behaviour is moulded in ways which maximise the likelihood of our continuing to live here. Yet it is empirically obvious both in our conceptualisation of our relationship to each of these impacts and in the way we actually live our lives that human beings exhibit a continuum of views and actions, ranging from determinedly and absolutely exploitative to absolute preservationist, passing through several varieties of conservationist in between. But components of the biophysical world can be conserved or preserved for the sake of human beings *or* for their own sake. It is, therefore, the *motive* behind any particular activity which constitutes either an anthropocentric or a biocentric approach. The top half of Table I illustrates these propositions.

At this point we would draw attention to the distinction, which Weber originally made between 'behaviour', 'action' and 'meaning'. As Reynolds

(1976, p.xv) writes:

> If we describe what people or animals do, without inquiring into their subjective reasons for doing it, we are talking about their *behaviour*. If we study the subjective aspects of what they do, the reasons and ideas underlying and guiding it, then we are concerned with the world of *meaning*. If we concern ourselves with what people are, overtly and objectively, seen to do (or not do) and their reasons for so doing (or not doing) which relate to the world of meaning and understanding, we then describe *action*.

Much of Reynolds' book is designed to show that '... man (sic) constructs himself as a social being' (1976, p.xiv). We expand on this below to show that the distinction between human needs and wants is less clearly defined than it is often thought to be. Suffice to say here that it is this characteristic, imprecisely to be sure, which distinguishes and defines human beings.

To summarise briefly thus far, we have argued (i) that humans must and do have *some* impact on the biophysical environment; (ii) that we must construct some form of personal conceptual environment in order to evaluate the components of the biophysical environment; (iii) that we must establish such a valuation in order to act; and (iv) that the values we place on the environment, which become our motives for action, determine whether we are acting to a more or less anthropocentric or biocentric degree.

There is thus at least a minimal inescapable anthropocentric component of human interaction with and valuations of the environment. A biocentric approach is, therefore, to some extent a variable option, as it were: a conscious decision which can be taken, via our human conceptualisation of the environment, to value other living things for themselves and to recognise as best we can their interests in ways which they cannot. The question then becomes, how is a more biocentric approach to environmental issues optimised? As with our differing valuation of the weather, human evaluation of 'the environment' is dictated to a large extent by the different circumstances in which we find ourselves. In other words, our differing physiologies, opportunities and social and economic backgrounds to some extent dictate our different abilities as well as our predilictions to be either more or less biocentric. Therefore, it is to these variables that we must look if we are to establish conditions optimal for the production of a widespread biocentric approach to the environment.

The anthropocentric/biocentric continuum in practice

Table I is a heuristic device which demonstrates how people's attitudes with regard to the environment outside themselves (including other people) can be assessed and how behaviours can, to some extent, be deduced from these. It is very unlikely that any one person will 'fit' neatly under one category. As

Sagoff points out, people usually demonstrate inconsistencies in their beliefs, and in any case, Table 1 is inevitably restrictive. However, it is a useful teaching device, if only because it encourages discussion of values and attitudes.

A look at some examples of environmental issues will clarify how it is possible to use the table in teaching.

The issue of commercial whaling is currently - and has been for some time - before the International Whaling Commission. Norway has stated its intention to recommence commercial whaling in 1993 and several other nations are likely to follow suit. How do different nation members of the International Whaling Commission view the issue? Can we determine their values and hence their motives for action? Which nations are taking a more - and which a less - biocentric view? Do anthropocentric motives always lead to negative outcomes for whales?

Some nations claim that the great whales are, or might be if they were utilised in certain ways, a sustainable resource and, therefore, issues about moratoria on commercial whaling should be argued about under the heading of 'usage and exploitation of material parts of nature'. If certain nations are found to take this position, they can be said to fall at the 'Infrared Fringe' or 'Red' end of the environmental spectrum as defined in the table. Students can go on to question whether other policies of those nations 'fit' this end of the spectrum too, or whether whaling is a special issue to them. This encourages students to look at nations' general policies, their position in the global political scheme, to consider whether their domestic and social policies also reflect consistent values.

Other nations, of which Australia is one, take what seems to be a clear cut biocentric view and argue that whales should in no sense ever be used as a resource and that it is an ethical decision, not an environmental one, as to whether or not whales should be hunted and killed for human gain. But Australians, and no doubt others, are enthusiastic participants in the current whale watching boom. Although this is a non-destructive interaction with whales, it is, according to Fox (1990, p.159) still an exploitation of whales for human advantage and is, therefore, anthropocentric and to be avoided. Never mind that most Australians will never see a whale, or that those that do will probably only see a handful of one species, or that profits from whale watching activities might be used by groups such Greenpeace to finance further conservation or protective efforts - all of Australia's and Australians' interaction with whales and efforts on their behalf can, on this strict philosophical interpretation, be labelled as anthropocentric. We, on the other hand, do not believe such rigid labelling is either sensible, accurate or at all meaningful unless the specific motives of each and every Australian were to be recorded.

By studying the table, students are able to perceive clearly that not all those nations who advocate a moratorium on killing whales are necessarily,

nor indeed would claim to be, particularly biocentric in their outlook or beliefs. First, they may want to stop killing whales at the moment in order to allow whale numbers to recover in order to allow harvesting in future; they may simply see whales as a special case, being very intelligent and, therefore, not to be killed for that reason alone, or because they are the largest mammals which have ever existed and are therefore special for that reason; or finally they may support a moratorium simply because no humane method of killing whales as yet exists (with the implication that when one is developed whale killing can resume). Alternatively, nations (and individuals, of course) may claim to be biocentric in outlook when they simply wish to preserve the whales, or some of them, as tourist attractions, as ecological indicators, as ecosystem stabilisers, as objects of scientific enquiry, or for some other human devised reason. This, by definition, is an anthropocentric approach. In other words, we see, yet again, that it is not so much the current *outcome* as the *motive* which is important in apparently distinguishing between anthropocentrism and biocentrism.

The issue of whales demonstrates that nations as well as individuals can be said to hold certain values. The extent to which it is these values rather than pure pragmatism or other motives which inform national behaviour can be discussed. And the general consistency of values falling under whichever position on the spectrum a nation seems to 'fit' can be considered.

However, there are other important environmental issues which demonstrate that the spectrum linking anthropocentric and biocentric values applies to individuals and groups of individuals as well as to nations. The first is that of the human population, in particular its current size and growth. Individuals have views on this subject and nations have policies. Few would deny that we humans and our activities and the rate at which we are increasing our numbers are not, at least locally, matters of concern in many parts of the world (perhaps orange to blue on the spectrum of the table). Some, however, claim that humans are in plague proportions and it is simply our numbers, more or less irrespective of where we live and how we live, which are *the* environmental problems of our age (the ultra-violet fringe). How many in the class would agree that humans should be viewed as pollutants in themselves because of their intrinsically polluting, degrading, resource using activities? On the other hand, is the prime cause for concern the potential we have as a species to destroy the planet through nuclear or biochemical armageddon? (In which case is it numbers *per se* or political ideologies which are the main threat?) Does our preoccupation with global numbers obscure the importance of, amongst other things, the differential environmental impact of rich and poor humans on the environment, the catastrophic effect of some human technologies, whether wielded by rich or poor, the effects of concentrations of people, not just absolute numbers, at certain particularly sensitive environmental areas, and the very attitude to the

environment which a proportion of humans seem to have? Since attitudes to human population such as these do not fall under the blue/ultra-violet fringe part of the spectrum, where do they fit? If they are anthropocentric views, why do they not appear to 'fit' under the 'infrared fringe' end of the spectrum either?

Another major environmental issue is that of genetic engineering, a perplexing topic for anyone trying to discern whether its outcomes will be primarily benefits or disasters. For instance, it is not immediately clear whether the genetic engineering of plants to increase agricultural output per hectare is a benefit or not. If we could use less land to feed the same number of people, would this lift pressure on marginal lands and so constitute an improvement for the environment? On the other hand, if we could feed more people with the same amount of land, would this not lead to even more human population pressure? Since our answers to these sorts of conundra tend to reflect either an anthropocentric or a biocentric value bias, the table can be used to help students explore their own values and to discuss the motivations of people who advocate genetic engineering as well as those who do not. Is the desire to flood the world with genetically engineered organisms incorrigibly and incontrovertibly anthropocentric? Are there instances where other species would benefit more than humans? What about the eradication, by the genetically engineered induction of sterility, of environmentally damaging animals and plants such as rabbits, foxes, box thorn, European carp and cane toads which are currently plaguing large parts of Australia? Would this be anthropocentric or biocentric in outlook? If we can overcome diseases such as cancer and AIDS through genetic engineering, is this inherently non-biocentric?

Yet another environmental issue which demonstrates the interaction of anthropocentrism and biocentrism is that of the social environment. The overuse, pollution and destruction of the earth's biophysical resources which have been brought about by human consumption patterns and overpopulation have been accompanied by the destruction of situational goods - unmarred natural beauty, peace and quiet, isolation, attractive views - and social goods such as community cohesion, mutual trust, cooperation and social stability. We contend that these latter are by no means the purely anthropocentric concepts they appear. As we have already pointed out, humans are as much social as they are biological animals. Certain social interactions - being nurtured as children, parenting, language tuition, sexual activity, some division of labour, etc. - are absolutely fundamental for our existence and central to our definition of ourselves as individuals and as a species. Self-esteem, being useful and valued members of a community, having opportunities to use our skills, having practice in caring for others - are all necessary to our fulfilment and well-being as human beings. Seeking to optimise these social inputs to our lives is as inherently important as clean air to breathe, water to drink, food to eat, adequate shelter and so forth.

Conversely, many of the social structures which prevent our attaining these things are also inherently detrimental to the environment. For instance, people isolated in suburbia may lose their self-esteem and lack any community interaction, whilst suburban sprawl itself creates problems for the environment (such as clearing of land, increased use of cars, drainage and run-off problems). In other words, factors which determine the human quality of life merge imperceptibly into problems of the measurement of environmental quality generally and, therefore, ecological and planetary stability. The destinction between needs and wants is not clear cut. Anthropocentrism and biocentrism merge into one another.

Although Table I has no lines setting out the attitude of humans to 'The Social Environment' *per se*, if we look under the 'Ultra-Violet Fringe' end of the spectrum, we can see that impeccable biocentric attitudes and behaviours with respect to other species ('rights and interests of other living things paramount') have significant implications for human social structures ('as low as possible energy usage with minimum impacts'; 'high intervention in planning processes'; 'human population size to be reduced'). How far do we view the possible problems that these impacts could have on the human social environment as anthropocentric? How far should human rights and interests be considered as part of a biocentric world view?

Another use of Table I is to enable students to relate their own responses to environmental issues to the anthropocentric/biocentric spectrum. In our experience, those who identify themselves as 'Green' often see that usually they are not consistently either anthropocentric or biocentric. Sagoff (1990, p.8 and pp.51-53) has argued that human beings apply different values to different parts of their lives. He quotes the example he puts before his students of asking them whether they would visit a Walt Disney ski resort which it is proposed be built within a pristine National Park. Most would; but most also would wish to see the Park preserved unspoilt. As citizens, we tend to make valuations of the environment which are different from those we make as consumers. Consequently, while we view ourselves primarily as citizens of a nation or of planet Earth, we might make value judgements which are biocentric, reflecting our identification with non-human inhabitants of the Earth. On the other hand, at those times when we are primarily consumers, we might tend to make more anthropocentric judgements.

Table I is useful also in that it provides a focus for students to discuss what sorts of values might motivate individuals and nations to behave in particular ways, to adopt either a more or less anthropocentric/biocentric view. It becomes clear that not all anthropocentric values necessarily lead to negative environmental outcomes; that precisely because humans *are* part of the environment in a biophysical, psychological and social sense, the biocentric and anthropocentric approaches cannot so easily be separated.

The Table also opens up discussion about the human social and political environment by raising issues such as the ownership rights of

nations, immigration targets, cost-benefit analysis, human motivations for the genetical manipulation of nature, and so on. This is an important part of educating *for* the environment, since human social and political structures have a significant effect on our values and on how readily we might change those values. People who depend for subsistence on marginal land because cash crops are grown on their nation's best agricultural land, for instance, are unlikely to recognise the value of their farm as a fragile component of the overall ecosystem and thereby be induced to stop abusing it. Failure to recognise our anthropocentrism - the extent to which the decisions we make about the environment depend on our life's circumstances - leads us to neglect human social and political structures which shape our values.

Recognition of the fact that, as human beings, we are environmental decision-makers and that the decisions we make depend on our value systems, inevitably gives rise to lengthy debate about what sort of values lead to positive environmental outcomes. It has been said that a concern for the environment is the prerogative of the affluent. We could adapt this to say that 'a biocentric outlook is easier for the rich'. On the other hand, people who live less technologically sophisticated lives, closer to the rhythms of nature might therefore identify more closely with other creatures and recognise the interests of those creatures as well as their own. Table I helps students to relate human actions to human values and, again, to recognise that the distinction between human welfare and ecological and planetary health and stability tends to be blurred.

Table I can also demonstrate some of the numerous terminologies in this field, including those that refer to religious or cultural beliefs and practical lifestyles, how these terminologies relate to each other and to a range of other ideas and beliefs about the environment. We have found it a useful introductory teaching tool which illustrates some of the arguments developed earlier and which promotes discussion of a wide range of topics, values, political institutions and much else.

For teachers, one significant consequence of this is that the perplexing difficulty of how to teach what are essentially anthropocentric concepts ('the environment', 'usage and exploitation of living parts of nature', etc.) from a more biocentric point of view, is resolved. If we accept the premise that anthropocentrism and biocentrism lie on a continuum, then we can also accept the inevitability of examining the environment from a human point of view. There is no conflict in interest in *also* placing ourselves within 'the environment', in believing that other living things have a right to exist for their own sake and that human activities should strive to maintain ecological and planetary health and stability. In accepting the inevitability of examining the environment from a human point of view, the world of human values (i.e. whether we should act more or less anthropocentrically/biocentrically) is opened up to us. Teaching holistically, in fact, means that we look not just at the science, or at the politics, of a situation, but that we examine both

together. We cannot teach in a truly holistic way unless we recognise the contribution to environmental problems of human value systems and the social and political environment which gives rise to them.

Conclusion

Anthropocentrism and biocentrism have been presented in the literature as a dichotomy, which, of course, has meant that we have been obliged to label ourselves either anthropocentric or biocentric. We have argued, though, that we cannot escape constructing a personal conceptual 'environment', and so we cannot escape making judgements, firstly about our survival, secondly about the quality of our lives and, thirdly, about the impacts which any decision we take in pursuance of the first two have on 'the environment'. Our point is that such decisions are taken on the basis of the impacts they have on our personal conceptual 'environment', although subsequently these decisions impact in a concrete way on our bodies and on the biophysical environment in which we live and of which we form part. This means that any decisions human beings make about 'the environment' are inescapably anthropocentric. If, as we have argued, planetary and ecological stability is inextricably bound up with the quality of human life, we must choose, on the best evidence available to us at the time, where our interests lie, i.e. we must make a variety of anthropocentric choices which will depend on the time and place at which we are making them. Not only can we not avoid anthropocentrism by a simple act of will, the very act of willing is a psychological phenomenon, an essentially human decision.

We have concluded, therefore, that anthropocentrism and biocentrism lie on a continuum and that, whilst we must inevitably assign human values to the environment as a result of the fact that only human beings have the ability to conceptualise 'the environment', the particular values we adopt can be either more or less anthropocentric or biocentric in orientation. The degree to which we become more or less anthropocentric or biocentric will depend on what we have called our 'life circumstances'; that is, the combination of our genetic make-up, our physiology, and the political and social setting of our lives (and, of course, our genetic make-up and activity, and our physiology are themselves strongly influenced by the very biophysical environment through which we come into the world, in which we develop and within which we live the whole of our lives).

Following from this conclusion are some significant consequences for environmental educators. Firstly, we cannot logically teach holistically unless we accept the premise that we cannot escape at least a minimal anthropocentrism. Secondly, if a more biocentric outlook is, as we have suggested, a variable option, we should be examining what sorts of values, what sorts of social and political structures would be likely to create a social tendency for people to have a biocentric outlook. It would seem unrealistic to expect people's values and beliefs to change by an almost miraculous

transformation when the social and political structures that have shaped our present values and beliefs are still in place. But if a minimal anthropocentrism is a merely trivial and insignificant point, then an examination of these structures is outside our terms of reference as environmental educators. And *that*, we contend, is contrary to an understanding of what Environmental Education *is*.

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Table 1*: A Spectrum of Human Views of Nature

Environmentalism Spectrum / Attitude of Humans to:	Infrared Fringe	Red	Orange	Yellow	Green	Blue	Ultra-Violet Fringe
Living Parts of Nature	Totally exploitive use of anything	Conservative use of anything	Restriction of use of some parts of nature	Rights and interests of other living things taken into account		Rights and interests of other living things paramount	
Material Parts of Nature	Totally exploitive use of anything	Conservative use of anything	Restriction on use of some parts of nature	Minimum usage with minimum impacts			
Energy Usage	As high as possible (usually 'hard' energy sources)	As high as needed	As high as practicable given environmental impacts		Conservative	As low as possible with minimum impacts (usually 'soft' energy sources)	
Planning Processes	Minimum intervention, minimum restriction (i.e. no values)	Moderate intervention, utilitarian values		High intervention, regional/global operation		High intervention, values normative, local operation, coercive operation	
Environmental Impacts of Human Activity	Unimportant (technology will fix)	Assessed by Cost Benefit Analysis		As wide a range as possible of impacts to be considered		To be minimised at almost any cost	
Manipulation of Nature							
1. Plant & animal breeding	Commercialised & centralised. No ownership rights except by patent	Ownership rights of nations recognised for genetic material		Local species, strains and breeds to be used for development		Local knowledge valued. Local rights & conditions recognised	
2. Genetic Engineering	Everything strongly encouraged. Patents to be allowed on all living things	Modest utilitarian approach adopted. Patents may be allowed where human benefits exceed perceived disbenefits to animals		Benefits to humans and rights of non-humans weighed		Genetic Manipulation to be deplored. Patents on living things not granted	
Other Humans							
1. Global population growth	Encouraged	Allowed	Encouraged to slow down		Growth to be stopped quickly	Population size to be reduced	
2. Domestic population growth	To be encouraged because of its economic benefits	Modest natural growth allowed; modest immigration targets set		Natural growth limited; immigration only on humanitarian grounds		Population size to be stabilised short term & reduced in longer term	
3. Native/indigenous peoples	Rights in the natural environment not recognised	Rights may be recognised but are usually overridden	Rights subject to cost-benefit analysis		Rights very important	Rights paramount	
Terminology							
Philosophical Beliefs	(Human chauvinist)		Anthropocentric			Biocentric	(Deep Ecologist)
Practical Lifestyle	Cornucopians		Reformers/Managers	Transformers		Alternativists	
Judaeo/Christian Tradition	Dominion View (exploitive; humans over nature under God)				Stewardship View (Conservationist; humans a functional part of nature)		
Environmentalism Spectrum	Infrared Fringe	Red	Orange	Yellow	Green	Blue	Ultra-Violet Fringe

* Adapted and expanded from a table originally prepared by Dr S. Taylor, Mawson Graduate Centre for Environmental Studies, University of Adelaide

Note

[1] We have used the term biocentric rather than ecocentric. The prefix 'eco' as used by Eckersley and others refers not just to individual organisms that are biologically alive (as does 'bio') but also such things as species, populations and cultures considered as entities in their own right. We prefer to restrict the usage in this paper in order to limit the areas over which debate and potential disagreement can occur.