

Ensayo

Ecology for Whom? Deep Ecology and the Death of Anthropocentrism

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Abstract

Deep Ecology arises as a new perception to visualize the inexorable changes that humanity currently confronts. This new scientific-philosophical-religious approach claims for a new treatment for the Earth. However, this new eco-centered approach transcends the limit of any particular science of today, and claims that simple reforms are not sufficient. Deep Ecology calls for a reduction of human population and change to our high-energy consumption and profligate resource use. Anthropocentrism should be substituted by ecocentrism; a shift from anthropos, the human, to eco, the Earth. Although I am not an advocated to Deep Ecology, in this paper I present a series of thoughts endorsing some of the Deep Ecology's claims. I argue that deep ecological thinking and actions, together with a better use of our scientific, economic and natural resources will add for a better and lasting global world.

Key words: Anthropocentrism, ecocentrism, paradigm.

¿Ecología para quién? Ecología profunda y la muerte del antropocentrismo

Resumen

Ecología profunda surge como una nueva percepción para visualizar los cambios inexorables que la humanidad enfrenta actualmente. Esta nueva percepción científico-filosófico-religiosa clama por un nuevo tratamiento para la tierra. Sin embargo, esta nueva visión eco-centrada trasciende los límites de cualquiera ciencia particular actual, y clama que las simples reformas no son suficientes. Ecología profunda clama por una reducción de la población humana y cambios en nuestro alto consumo energético y derrochador uso de recursos. El antropocentrismo debe ser substituido por el ecocentrismo; un cambio de antropos, lo humano, a eco, la tierra. Aunque no soy un convencido de la ecología profunda, en este trabajo presento una serie de pensamientos que endosan algunos de los postulados que esta proclama. Argumento que el pensamiento y las acciones de la ecología profunda, junto con un mejor uso de nuestros recursos científicos, económicos y naturales ayudarían al sostenimiento de un mejor y más duradero mundo global.

Palabras clave: Antropocentrismo, ecocentrismo, paradigma.

I. GLOBAL CHANGE AND THE BIBLICAL INJUNCTION OF *BE FRUITFUL AND MULTIPLY*

Global change is in the top of the media, although whether this event is natural or not is still a matter of profound controversy. It is a recognized fact, however, that the Earth is constantly changing; earthquakes, volcano eruptions, and tsunamis, to mention just a few, are good natural examples of ways we perceive Earth's changes. Ozone depletion, increases in atmospheric greenhouse gases, and large-scale pollution as by-products of human activities are also good examples of this global phenomenon.

However, it should be evident to almost every ecological literate or man in the street that the most important, and probable more noxious, global change facing mankind is the fast and inexorable increase in the number of human beings. Putting it simple, the world's population has

been predicted to increase 65% by 2050 (Wallace, 2000), meaning that almost 4 billion more people will be subduing the Earth in a very close future. On September 22, 1999 the United Nations Population Fund (UNFPA, 1999) released its annual **The State of World Population** report for 1999, entitled **6 Billion: A time for choices**. In this report, October 12, 1999 marked the **Day of 6 Billion**, when world population reached 6 billion. It took only 39 years to duplicate the population of 1960, whereas it was estimated that the world population was one billion in 1804 and will be seven billion in just 11 more years from now. Simply seen, the only biblical injunction that human beings have practiced very well is *...be fruitful and multiply... And God blessed them, and God said unto them, be fruitful, and multiply, and replenish the Earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that move upon the Earth* (Genesis 1:28). Of course, overpopulation is not just a problem of the Christian world. For example, the burgeoning population growth of Saudi Arabia, Qatar, Iran, United Arab Emirates, and Oman, to mention just a few of them, will double the population of these non-Christian states in a few years from now, probably bringing in its wake endless social problems.

What kind of challenges this enormous increase in human population will bring with it? Easily predictable, the necessity of more food, more water, more habitable space, more recreational opportunities and, inexorably, more human and ecosystem exploitation. Are we, as human beings, and the Earth as our global nurturing system, prepared to confront this tremendous defy? At the present time, no one can answer this question with confidence and, as a matter of fact, pessimism has permeated, and will continue doing so, thinking on the subject. For example, in 1798 Thomas Robert Malthus (1766-1834) published **An essay on the principle of population, as it affects the future improvement of society with remarks on the speculations of Mr. Godwin, M. Condorcet, and other writers** as a response to utopian utilitarians who suggested that population growth constituted and unmitigated blessing (The Victorian Web).

In this essay, Malthus explained in simple terms the connection between overpopulation and misery, and predicted that the demand for food inevitably becomes much greater than the supply of it. This prediction is rooted in the idea that population increases geometrically while foodstuffs grow at an arithmetic rate. Malthus recognized that human

population have a certain natural condition to grow faster than the power in the Earth to produce subsistence, and since humans do not limit their population size voluntarily (*preventive* checks in Malthus terminology), *positive* checks are necessary to limit human population size: famine, disease, poverty, and war.

II. ECOLOGY AND *ALL THINGS ARE CONNECTED*

The history of Ecology has been one of successes and frustrations. Successes, because after spending the last century and more explaining in exquisite detail the intricacies of life on the Earth, an immense accumulation of knowledge indicates that *all things are connected*, every living object is necessary, nothing is useless. The scientific discipline of Ecology has revealed a complex web of interdependencies in the biological world, which support the life of individuals, populations, communities, and ecosystems; in plain words, the Earth. Frustrations, because most ecologists believe they have talked to themselves, and the few concerned individuals who have taken a sincere interest have talked to themselves as well. On November 18, 1992, the Union of Concerned Scientists, representing over 1,500 of the world's leading scientists (including 99 Nobel laureates) issued a ***Warning to Humanity***, that implored all peoples of the world to halt the accelerating damage to mother Earth's life support systems *...The human world is beyond its limits...The present way of doing things is unsustainable...The future, to be viable at all, must be one drawing back, easing down, healing...If correction is not made, a collapse is certain within the lifetimes of many who are alive today* (Union of Concerned Scientists, 1992).

How can we perceive the negative effects of uncontrollable human activities? In various ways, of course, but extinction of species is probably one of the most significant. Although at least 90% of all species that have existed from the start of life on Earth 3.5 billion years ago have disappeared, almost all of them have perished by natural processes. However, in the last 50,000 years man has exerted a blatant influence. As a primitive hunter, man was able of occasionally eliminate species; and it is from around 1600 AD that man became able, through advancing technology, to over-hunt animals to extinction in just a few years, and to disrupt extensive environments just as rapidly (Myers, 1984). It is well established that between the years 1600 and 1900 at least 75 well known

species have been eliminated as a consequence of human activities, and since 1900 another 75 well known species more.

The significance of the ecological and biodiversity crises can be summarized in this paragraph from Edward O. Wilson: *Human demographic success has brought the world to this crisis of biodiversity. Human beings -mammals of the 50-kilogram weight class and members of a group, the primates, otherwise noted for scarcity- have become a hundred times more numerous than any other land animal of comparable size in the history of life. By every conceivable measure, humanity is ecologically abnormal. Our species appropriates between 20 and 40 percent of the solar energy captured in organic material by land plants. There is no way we can draw on the resources of the planet to such a degree without drastically reducing the state of most other species* (Wilson, 1992).

III. SCIENCE AND OUR PLACE IN THE UNIVERSE

Science has taught us that our place is not the center of the universe. We are in the border of a galaxy, not even at the center of our own solar system. Copernicus effectively displaced humanity from the physical center of the universe. A few centuries later Darwin indicated that humanity occupied no biologically privileged position, and finally Freud claimed that one of our more distinctive characteristics, rationality, was nothing else than a fraud (Grey, 1993). But previously, and in the interim of these paramount events, came the churches and proclaimed anthropocentrism. Anthropocentrism means nothing else than human chauvinism, the idea that humans are the crown of creation, the source of all value, and the measure of all things. And it is deeply embedded in our culture and consciousness. The final and more relevant consequence of this attitude is that nature, as we have known it does not exist any more. In its place is the environment. *Every tree and river, large mammals and small fish, now exist in relation to human action, knowledge, commerce, science, technology, governmental decisions to create national parks, international campaigns to save endangered species, and (God help us) leisure lifestyle choices about mountain bikes, off-road vehicles, and sport fishing. Cell phone towers sprout like mushrooms on mountain tops, grizzly bears wear radio collars, genetic engineering produces overweight, arthritic pigs, and the children of Los Angeles slums grow up with stunted lungs because of polluted air. The world's coral reefs are*

bleaching a sickly, dead white; all of Japan's rivers are dammed; and the cod off Nova Scotia have been fished out (Barnhill and Gottlieb, 2001). The Nature is death, long live the environmental crisis.

We must admit that churches, whatever their theological attitude toward the Earth, were blind to the environmental crisis until it was pointed out to them by others. Many religion leaders were suspicious of science's claims when they conflicted with scriptural narratives, whereas few were critical of technological advances and the threat they posed. The voices of Thoreau, Husserl, Heidegger and many others were the voices that challenged the dominant Western treatment of nature, not those of ministers, priests, popes, or rabbis (Barnhill and Gottlieb, 2001). The churches have been ready, even eager, to embrace an enormous spectrum of social issues of our time (e.g., poverty, homelessness, women's rights, minority rights of all kinds), yet on the issue of growing human population and environmental crisis, ones that seem to go to the very heart of the human condition, the church has had very little to say (Train, 1990).

So, what seems to be the solution, what or how will we bring growing human populations into a balance with our natural resources on which we necessarily depend? There is no really a unique answer but, passionate identification with nature, humility and self-consciousness are in the core of the solution. Of course, all these human attributes are not enough. Passion for nature, for example, is not something new; Egyptians, Greeks, and Romans in some way or another, manifested their concern for natural phenomena. As we saw, in 1620 Bacon recognized that we, humans, are servants and interpreters of nature. Currently, millions may be billions of people seem to be genuinely concerned about the detrimental effects of environmental deterioration and call themselves environmentalists. But people become environmentalists for diverse reasons; those following humanitarian reasons seek improvement of the environment and living standards raised for Third World peoples without jeopardizing their own living standards, those seeking economic benefits see the need for a healthy environment so that the Earth may continue to produce wealth, those motivated primarily by aesthetics reasons seek to preserve the beauty of the natural world, and there are even those that become environmentalists because it is popular. Government leaders, politicians and even corporate business people who have not had interest in ecology and environmental principles previously have suddenly become environmentalists. The legislative record of the U.S. Con-

gress and Administration suggests that the number of genuine environmentalists in those bodies is quite small indeed. As the citizenry has jumped on the green bandwagon, so have the leaders. However, when citizens and leaders discover what is involved in genuine environmentalists, their interest in the subject is often short-lived (Mennonite Central Committee, 1990).

On the other hand, for centuries, religions have been advocating humility and self-consciousness as a way to reach superior stages of self-realization. Anthropos, the human, has been the center of theology, and categories like freedom and history have been the basic horizon of our theology. In the name of anthropocentrism we corrupted everything; in the name of anthropos the Brazilian government announced in 1971 an ambitious Program of National Integration, which included a program of highways cutting north-south and east to west across the Amazon Basin. The Trans-Amazonian highway, the Cuiaba-Santarem highway, and the Porto-Velho-Manaus highway, have been completed. The intention of this program was to populate the Amazon with rural peoples from throughout Brazil to integrate the Amazon. A very lovable mission, but in the interim many Amazonian Indians have lost their land and even died in the name of development. Even worse, many of the populations settled in the new created lands now face the risk of being mobilized as a consequence of vast mineral deposits uncovered in the zone.

Millions, may be billions, of people believe we are living in the best of all possible worlds, with a high standard of living. Many philosophers, free thinkers, and common people argue that more and more humans are desirable because humans are the ultimate resource. More people mean more creativity and more opportunity to produce and consume. I believe, like many more, that we need a shift from conservation and environmentalism to ecology; and it does not have to be something new, it already exists, the only that we have to do is to reawake our understanding of Earth wisdom. *In the broadest sense, we need to accept the invitation to the dance - the dance of unity of humans, plants, animals, the Earth. We need to cultivate an ecological consciousness...* (Devall and Sessions, 1985), we need an ecocentric revolution. While there is no one tradition, culture, science, or religion that has the whole answer to the environmental crisis, the concurrence of many of them, the best of any one, can provide us with clues to a better Earth. In Deep Ecology is part of the answer.

IV. DEEP ECOLOGY

I was firstly exposed to Deep Ecology in a course on Advanced Fisheries Management that was as rich and diverse in opinions as in nationalities (5 students from Malaysia, Scotland, United States of America, and Venezuela). The instructor presented us Deep Ecology as a very different perspective to perceive the management of not just fisheries resources but natural resources in general. Unfortunately, because of time limitations, we did not discuss this aspect very much in our class and my view of Deep Ecology was superficial and short. My first impression was that Deep Ecology was a new philosophical point of view product of new and profound reflections about nature. Further readings on my part led me to realize that the foundations of Deep Ecology are not new and it is more than a philosophy. Paraphrasing Roger Gottlieb, Deep Ecology is the... *oldest and newest religion...* (Barnhill and Gottlieb, 2001). Deep Ecology concentrates the best aspects of many religions (e.g., Hinduism, Huayan Buddhism, Confucianism, Islamism, Catholicism, Protestantism) without necessarily ascribing to their postulates and, when necessary, making ...*happy common cause with pagans, witches, druids, and indigenous tribes...* (Barnhill and Gottlieb, 2001). Deep Ecology, as most religions do, claims for... *a humility toward nature, in regards to our place in the natural world, our knowledge of it, and our ability to manipulate nature in a responsible way...* (Barnhill and Gottlieb, 2001). Deep Ecology contrasts with many religions that emphasize the Enlightenment and proclaim that the enormous success of the Enlightenment has generated terrible results: a destructive technology, a consumer society devoid of community, social progress that has destroyed both cultures and ecosystems and created injustice (Barnhill and Gottlieb, 2001).

But what exactly is Deep Ecology? The term Deep Ecology was coined by the Norwegian activist and philosopher Arne Naess in his 1973 article **The shallow and the deep, long-range ecology movements** (Naess, 1973). The term deep, said Naess, is supposed to suggest explication of fundamental presuppositions of valuation as well as of facts and hypotheses. Deep Ecology, therefore, transcends the limit of any particular science of today, including systems theory and scientific ecology (Naess, 1988). For contrasting shallow and Deep Ecology Naess used typical slogans: natural diversity is valuable as a resource for us (shallow) in contrast with natural diversity has its own value (deep); it

is nonsense to talk about value except as value for mankind (shallow) in contrast with equating value with value for humans reveals a racial prejudice (deep); people will not tolerate a broad decrease in their standard of living (shallow) in contrast with people should not tolerate a broad decrease in the quality of life but in the standard of living in over-developed countries (deep). The essence of Deep Ecology is to keep asking more searching questions about human life, society, and nature. Simple reforms are not sufficient; a new ecological philosophy for our time is necessary, a move from anthropocentrism to ecocentrism. Ecological consciousness and Deep Ecology contrast with the dominant worldview of technocratic-industrial societies. For centuries Western culture has become increasingly obsessed with the idea of dominance: with dominance of humans over nonhuman nature, masculine over the feminine, wealthy and powerful over the poor, with the dominance of the West over non-western cultures (Sessions, 1995).

The philosophical roots of Deep Ecology are found in the ecocentrism and social criticism of Henry David Thoreau, John Muir, D. H. Lawrence, Robinson Jeffers, and Aldous Huxley, and can be traced to the ecocentric religions and ways of life of primal peoples around the world, and to Taoism, Saint Francis of Assisi, Spinoza, and the Zen Buddhism of Alan Watts and Gary Snyder. Inspirations for Deep Ecology came from Aldo Leopold's ecocentric land ethic and from Rachel Carson, Dave Brower, Paul Ehrlich, and other biologists, field ecologists, and conservation organization leaders who were convinced that the dominant anthropocentric orientation of western civilization was seriously misguided as well as inadequate to deal with the environmental crisis (Sessions, 1995). Later, in 1984 Arne Naess and George Sessions presented the 8 Basic Principles of Deep Ecology, hoping that they would be understood and accepted by persons coming from different philosophical and religious positions (Devall and Sessions, 1985). The philosophy of the Deep Ecology movement is characterized essentially by ecocentrism, as outlined in the 1984 Deep Ecology platform. However, Deep Ecology has not remained without critics, of course, although many of them antithetical to Deep Ecology philosophy. For example, the Earth First! organization has accused Deep Ecology of misanthropic and more recently, former Vice President Al Gore, Jr., in his best-selling book **Earth in the balance: ecology and the human spirit** claimed that Arne Naess' eco-philosophy portrays humans as being...*an alien presence on the Earth...* and as having no free will; therefore a movement inherently misanthropic. Gore's

position reveals the transcendence of the Deep Ecology postulates, and exemplifies the obstacles it has to confront to prevail.

V. A MASSIVE SOCIAL PARADIGM CHANGE

Undoubtedly we are at a crossroad. It is from humans to err and learn and we have erred for too long, it is time already to learn. During centuries of scientific enterprises we have accumulated a vast amount of knowledge, large and important enough to help us to realize something is definitely wrong. In 1962 Thomas Kuhn, in his most renowned work **The structure of scientific revolutions** (Kuhn, 1962), argued that science is not a steady, cumulative acquisition of knowledge but instead a series of intellectually... *violent revolutions*... after which *...one conceptual world view is replaced by another...* In Kuhn's words we need a paradigm shift, a change in the collection of beliefs shared by scientists, a set of agreements about how problems are to be understood. Only when a paradigm shift takes place... *a scientist's world is qualitative transformed and quantitative enriched by fundamental novelties of either fact or theory...* We need a massive social paradigm change, for radically new directions for humanity. The diminishment of man as a consequence of increasing technological-political manipulation together with the threat of continued worldwide war, as raised by Huxley and Orwell in 1984, is already a reality (Sessions, 1988). Fewer people, usually those with a basic grasp of the scientific principles of ecology, realize that we are unraveling the integrity of the world's ecosystems. But even those with a sophisticated knowledge of ecological principles seem unable to face the implications of Barry Commoner's Third Law of Ecology that... *Nature knows best.*" (Sessions, 1988). As many historians who have researched the ecological problem now point out, the major thrust of western culture, of both our Greek and Judeo-Christian heritage, has been to assert the uniqueness of humans, to emphasize our separation from the natural world and other life forms, and to see our role as having dominion over the rest of nature (Sessions, 1988). This has to change for good.

Although I am not an advocate of Deep Ecology, I believe there is something in it deserving some consideration. I agree with Naess that we cannot expect richest countries to reduce their excessive interference with the nonhuman world to a moderate level overnight. The stabilization and reduction of the human population will take time and interim

strategies are necessary. But we have to be conscious of our current situation, and the longer we wait the more drastic will be the measures needed. We also need to judge what is essentially vital for our lives. Differences in climate and related factors, together with differences in the structures of societies as they now exist, need to be considered (for some Eskimos, snow-mobiles are necessary today to satisfy vital needs) (Deval and Sessions, 1985). Enough food is necessary for our vital functions, but not excessive food or even fancy (deli) foods. We have to respect food, just as our ancestors did and as currently many primeval cultures do. People from overdeveloped countries do not respect food; a single visit to any of the University campus cafeterias or all you can eat restaurants is enough to figure this assertion out. While each year almost 18 million people, mostly children, die from starvation, malnutrition, and related causes, tons of unfinished meals and even untouched food go to the garbage cans of overdeveloped countries. A product of wealth and free will.

I do not believe anthropocentrism (or androcentrism), as Deep Ecology in some way or another claims, however, is the main reason to be where we are, and that animals are more or as important as we are. Logically and emotionally I have no reason to believe that there is anything more important than people, man and woman. My faith is on my people, man and woman and I fight for the environment because I dream a better and ethic Earth for people. Anthropocentrism is natural and inevitable, and when properly qualified turns out to be perfectly benign (Grey, 1993). Although the title of the essay seems to indicate it, my aim is not to bury anthropocentrism but to defend its most qualified form. What Deep Ecology promotes and condemns needs to be expressed from a human perspective. What we have to do, we must do, is abandon that atrocious conception that we need too many things to exist. To satisfy our vital needs we do not need to use our natural resources extravagantly. The concept of the American dream has to be abandoned or at least redesigned. The American dream of liberty and free will, the American dream of equality may be preserved. But the American dream of opulent mansions, or luxury cars, or costly dresses, or deli cuisine must be abandoned. We do not need all of this for living.

Deep Ecology calls for a reduction of human populations and change to our high-energy consumption and profligate resource use. This is a due. We have to put into practice a conscious reduction of hu-

man population. No more the nightmares predicted by Malthus, famine, disease, poverty, and war to reduce our populations. Only reducing our population levels we can expect to respect the Earth and the rest of their inhabitants, while respecting ourselves. But the question is: how can we do that? Many countries in the developing world (e.g., India, China, Peru) already have official government policies to reduce the human population growth rate, but there are still strong controversies over the types of measures to implement (e.g., contraception, abortion, in communion with human rights and feasibility). The UNFPA recognizes that if all governments implement public policies to set specific populations targets, the current situation of poverty and quality of life could be improved. But, on the other hand, it has to be recognized that these measures are even more imperative to implement in the so-called developed (or overdeveloped) countries. The overwhelming rate of consumption and waste production in these societies represent much greater threat and effects on the Earth ecosystems than societies in the developing countries. Thus, it is morally correct from the part of the richest nations to reduce their population levels.

Richest nations have, in the context of the current technological reality, better educational platforms, programs, facilities, and strategies than their counterparts in the poorer nations. Thus, it is imperative as well that these countries engage in the searching of real ecocentric strategies. The answer to the current overpopulation that annihilates the natural resources is not one easy, and it is not going to be easy, but education is definitely in the core. A better and real education, a sincere education, an education where mothers play a transcendental role. The mother-child landscape is the first landscape in our life (Tobias, 1988). Our future as a species is developed during the first three days, the first seven years of our existence. However, in the name of development and progress we pull kids out of their mother at a very early age. More and more we see precocious kids as a product of more food, genetically modified (GM) foods, more efficient learning programs, etc. More and more our kids develop at earlier age scientific abilities, learn how to deal with highly sophisticated technologies, and are able to explain complex technological processes. However, their natural, ecological consciousness is empty. Under these circumstances, the child's literal value, valueless contact with nature is easily transformed into strong, ego centeredness. *As an adult, when forced to weight literal values, he will always choose*

progress. Introducing the child to nature must be seen as crucial to humanity in the coming era of radical will. Otherwise, the child, having missed out on any truly contact with the natural world is likely to seek order in his universe by turning only to machines. We have to return education to a human scale. The parent-child relationship is the pivotal point in the ecological revolution. Civilizations rise and fall, like anonymous stars. But mothers, by being compassionate with their children, encouraging natural values, exposing their flesh and blood to the Earth cycles, are realistic. And until this message is driven home, there can be no true ecology, no revival of the human spirit (Tobias, 1988).

I agree with many ecofeminists that all humans do not dominate nature equally, view themselves as over nature or benefit from such domination. *Rather, elite males, in different ways in different cultures, create hierarchies over subjugated humans and nonhumans: men over women, whites over blacks, ruling class over slaves, serfs, and workers (Ruether, 2001).* Women have to recognize that there is a positive connection between women and nature. *Women are the life givers, the nurturers, the ones in whom the seed of life grows. Women were the primary food gatherers, the inventors of agriculture. Their bodies are in mysterious tune with the cycles of the moon and the tides of the sea. It was by experiencing women as life givers, both food providers and birthers of children, that early humans made the female the first image of worship, the Goddess, source of all life. Women need to reclaim this affinity between the sacrality of nature and the sacrality of their own sexuality and life-powers (Ruether, 2001).* However, women have to understand the implications of their more valuable treasure, their role of mothers. Women, in some way or another, are the center of the universe. Women of primeval cultures already know that nothing is more important than a mother. We humans know that by virtue of consciousness, animals by intuition. For years women have been fighting against androcentrism and have won many battles, although there are still many more to fight. But in the interim I feel that something has been left on the road. In many instances, women have forgotten their more important role, their role of mothers. As a consequence of excessive consumerism and the promise of better future, better social position, better and more abundant food, women have been compelled to abandon their children in daycare centers at critical ages. By doing so, children lose their more important legacy, the ties that bond them to the mother, to the Earth. Governments necessarily

have to implement better and more aggressive policies to ensure children share more and better time with mothers. In fact, some countries already have policies to deal with this situation but seem to be insufficient in the light of the current situation. Three, six, twelve months after the birth are not sufficient. Venezuela, Uruguay, Mexico and other South American and Central American countries have been implementing the so called Hogares de Cuidado Diario or Madres Cuidadoras, interesting programs seeking to resolve in a more human way the childhood's problems of these countries. These programs are not simple daycare centers where highly trained personal take care of the kids. On the contrary, kids are taken care in other homes with real mothers with real sons. Real mothers with real sons (two or three kids) take care of two or three more kids from neighbors, and share with them experiences and vicissitudes. At least in Venezuela, local, state, and federal governments finance part of the programs; and there are evidences indicating the success of these programs, especially in rural regions where kids have more opportunities of experiencing nature. This can be something from where developed societies learn from non-developed ones.

Deep Ecology also claims for noninterference with nature. However, noninterference, as postulated by Deep Ecology, does not imply that humans should not modify some ecosystems, as do other species. We have modified the Earth and will probably continue to do so. But a re-dimension of our modifications is mandatory. Ecology teach us that we, as part of the ecosystem, as part of a food chain, a food web have the natural right of disturbing and even appropriating some natural resources, just as a lion or a tiger or a shark does. Agreeing with Aldo Leopold... *Homo sapiens is a plain member and citizen of the land community...* Hence, anthropogenic changes imposed on nature are no less natural than any other. Nevertheless, because *Homo sapiens* is a moral species, capable of ethical deliberation and conscientious choice, and evolutionary kinship and biotic community membership add a land ethic to our familiar social ethics, anthropogenic changes may be land-ethically evaluated. But by what norm? The norm of appropriate scale (Baird Callicot, 1998). The chain saw and the drift net have transformed biological systems far more rapidly and violently than the Neolithic axe and spear. Episodes of mass extinction have occurred in the past, though none of those has been attributed to a biological agent. Spatial and temporal scales are keys to evaluate direct human

ecological effects. Long before we humans arrived violent disturbances regularly occurred in nature, and still occur as we saw above. And these events occur without direct human intervention. Volcanoes bury the biota of whole mountains, tornadoes rip through forests, hurricanes erode beaches, lightning set fires through forests and savannas, rivers drown floodplains, and droughts dry up lakes and streams. How are all these events different from a man-made lake, clear cuts, beach developments, and hydroelectric impoundments? Indeed, they are not. It is just a question of scale. Tornadoes occur at small, widely distributed spatial scales and more extensive disturbances such as droughts occur less frequently and are stochastic (random) and chaotic (unpredictable) events. Anthropogenic disturbances, such as industrial forestry and agriculture, urban development, and drift net fishing, on the other hand, are more frequent, widespread and regularly occurring. They are well out of the spatial and temporal ranges of disturbances experienced by ecosystems over evolutionary time (Baird Callicot, 1998). Re-paraphrasing Leopold, *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* (Baird Callicot, 1998).

I do not agree with Deep Ecology that the new ecology-centered philosophy has to transcend the limit of science, be in some way anti-scientific. On the contrary, I strongly believe that a new philosophy for the Earth based in the best of science is necessary. Science is, by definition, the search of truth and one of the best products of human intellect. For many years science has been producing the best but, unfortunately, also the worse products. It is time to bury the worse and to elevate the best of science. The scientific discipline of ecology, in its one hundred and more years of methodological development has already found the truth, the truth behind the species, the population, the community, the ecosystem, the Earth. We have not found every little detail, of course, but we do not need it. It does not matter what you do believe about the origin of the Earth and the life on it. Either if you believe the Earth and every thing else far beyond was created by a superior entity, or that the Earth and every thing else is the product of random events occurred in the history of the time, all is interconnected in the complex web of life. That is what the scientific discipline of ecology teaches us. We cannot disregard its teachings.

Bibliography

- BAIRD CALLICOT, J. 1998. "The ethical legacy of Aldo Leopold". An Ideas Matter Lecture Series, Fall 1998. The land ethic: key philosophical and scientific challenges. [En línea]. <http://oregonstate.edu/dept/philosophy/ideas/98history.html>.
- BARNHILL, D.L. and GOTTLIEB, R.S. 2001. "Introduction". En D.L. Barnhill y R.S. Gottlieb (Eds), *Deep Ecology and world religions. New essays on sacred ground*. State University of New York Press, Albany, NY. (USA).
- DEVALL, B. and SESSIONS, G. 1985. **Living as if nature mattered**. Gibbs Smith Publisher, Peregrine Smith Books, Salt Lake City, UT. (USA).
- GREY, W. 1993. "Anthropocentrism and Deep Ecology". **Australasian Journal of Philosophy** 71:463-475.
- KUHN, T. 1962. **The structure of scientific revolutions**. University of Chicago Press, Chicago, IL. (USA).
- MENNONITE CENTRAL COMMITTEE. 1990. Why I am an environmentalist. Occasional papers. [En línea]. <http://www.mcc.org/respub/occasional/131.html>.
- MYERS, N. 1984. "The challenge of disappearing species". En M. Tobias (Ed), *Deep Ecology*. (pp. 45-57). Avant Books, The World Shop, San Marcos, CA. (USA).
- NAESS, A. 1973. "The shallow and the deep, long-range ecology movement". **Inquiry** 16:95-100.
- NAESS, A. 1988. "Identification as a source of deep ecological attitudes". En M. Tobias (Ed), *Deep Ecology*. (pp. 256-270). Avant Books, The World Shop, San Marcos, CA. (USA).
- RUETHER, R.R. 2001. "Deep Ecology, ecofeminism, and the bible". En D.L. Barnhill y R.S. Gottlieb (Eds), *Deep Ecology and world religions. New essays on sacred ground*. (pp. 229-241). State University of New York Press, Albany, NY. (USA).
- SESSIONS, G. 1995. "Preface". En G. Sessions (Ed), *Deep Ecology for the 21st century*. (pp. ix-xxviii). Shambhala, Boston, MA. (USA).
- SESSIONS, G. 1988. "Ecological consciousness and paradigm change". En M. Tobias (Ed), *Deep Ecology*. (pp. 28-44). Avant Books, The World Shop, San Marcos, CA. (USA).
- TOBIAS, M. 1988. "Humanity and radical will; reflections from the island of life". En M. Tobias (Ed), *Deep Ecology*. (pp. 2-27). Avant Books, The World Shop, San Marcos, CA. (USA).

- TRAIN, R. 1990. "The environmental crisis: a challenge to the churches". Woodstock Report No. 21. [En línea]. <http://www.georgetown.edu/centers/woodstock/report.htm>.
- THE VICTORIAN WEB. 1995. Thomas Robert Malthus. [En línea]. <http://www.victorianweb.org/economics/malthus.html>.
- UNION OF CONCERNED SCIENTISTS. 1992. World scientists' warning to humanity. [En línea]. <http://www.ucsusa.org/ucs/about/1992-world-scientists-warning-to-humanity.html>.
- UNITED NATIONS POPULATION FUND. 1999. The state of world population. 6 billion: A time of choices. [En línea]. <http://www.unfpa.org/swp/1999/contents.htm>.
- WALLACE, J.S. 2000. "Increasing agricultural water use efficiency to meet future food production". **Agriculture, Ecosystems and Environment** 82:105-119.
- WILSON, E. 1992. **The diversity of life**. Harvard University Press, Cambridge, MA. (USA)