# Love, the Environment and Bioethics

SEVGİ, ÇEVRE VE BİYOETİK

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## Summary -

Love of ourselves, love of others and love of nature are common threads linking all of humanity with each other and within the environment. In this paper I wish to consider bioethics in terms of our relationships with other living organisms and the environment, life or the "bios". Is bioethics love of life? If we consider a complete bioethics we must include the duties we have to human beings as well as to nature. There is need for more consideration of the bioethical questions in how we relate to the environment, including agriculture and food issues. In terms of medical ethics, the relationship of human beings to the environment also relates very strongly and intricately with the psycho-somatic health of human beings. It also discusses whether quotas on the amount of environmental pollution one can make would provide encouragement to become more responsible citizens, and some penalties for those who can abuse the system. Bioethics does involve all of life, if we do not love all of life we cannot love other people.

Key Words: Love, Environment, Bioethics

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Özet \_

Kendini sevmek, başkalarını sevmek ve doğayı sevmek bütün insanlığı birbirine ve çevreye bağlayan ortak bağlardır. Ben bu makalede biyoetiği kendimizin diğer yaşayan organizmalar ve çevre, yaşam veya "bios" ile olan ilişkisi bağlamında değerlendireceğim. Biyoetik hayatı sevmek midir? Tam bir biyoetik anlayışında insanlara karşı olan görevlerimiz yanında doğaya karşı olan görevlerimizi de gözönünde bulundurmalıyız. Ziraat ve beslenme konuları da dahil, çevreyle ilişkimizin nasıl olması gerektiğine dair Biyoetik soruları daha fazla dikkate alma gereksinimi bulunmaktadır. Tıp Etiği açısından da insanoğlunun çevre ile ilişkisi insanın psiko-somatik sağlığı ile de yakından ve kuvvetle ilişkilidir. Yazı aynı zamanda çevre kirliliği kotaları ile sorumlu davranan vatandaşların ödüllendirilmesi, sistemi kötüye kullananların da cezalandırılmasının nasıl bir yarar sağlayabileceğini de tartışmaktadır. Biyoetik yaşamın tümünü içermektedir, eğer yaşamın tümünü sevmezsek diğer insanları da sevemeyiz.

Anahtar Kelimeler: Sevgi, Çevre, Biyoetik

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Love of ourselves, love of others and love of nature seem to be common threads linking all of humanity with each other and within the environment. In this paper I wish to consider bioethics in terms of our relationships with other living organisms and the environment, life or the "bios". There is a need for more consideration of the bioethical questions in how we relate to the environment, including agriculture and food issues. In terms of medical ethics, the relationship of human beings to

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the environment also relates very strongly and intricately with the psycho-somatic health of human beings.

The need for bioethics is being re-emphasized internationally, in UN Declarations, in statements of scientists and teachers, in the views of ordinary people, and as a response to the decay in moral fabric of societies as seemingly distant as Eskimos and Tamils. We are left with the challenge to apply love to cases where we have disputes and balancing of options, be it abortion of the handicapped fetus or using surrogate mothers to grow up clones. Love demands human rights protection, from love of life, balanced by the only ultimate source of reconciliation between countries, respect and love.

If we ask people whether they value the environment, or whether it has special property, almost everyone anywhere will agree. However, despite nice words and sentiments, the lack of practical concern shown for the environment suggests that environmental protection is not a dominating motivation in peoples lives or bioethic of behaviour. This inconsistency between words and actions has long been discussed in all cultures of the world, and is one of the reasons why social organization and laws have evolved to protect others against the failures resultant from the exercising of individual decision-making power.

#### **Bioethics**

We can find various definitions of bioethics, the simplest would be that it is consideration of the ethical issues raised by questions involving life ("bio"). I simply define bioethics as love of life (1). I would include issues of environmental and medical ethics, as well as questions I face each day, like "What food should I eat?", "How is the food grown?", "Where should I live and how much disturbance of nature should I make?", "What relationships should I have with fellow organisms including human beings?", "How do I balance the quality of my life with development of love of my life, other's lives and the community?", for example. We now have the power to change not only our own genes, but the genes of every organisms, and the power to remodel whole ecosystems of the planet, which has made many focus on biotechnology, however, the key questions are more basic. New technology has nevertheless been a catalyst for our thinking about bioethics, which have been stimuli for research into bioethics in the last few decades.

Bioethics is both a word and a concept. The word comes to us only from 1970 (2), yet the concept comes from human heritage thousands of years old (3). It is the concept of love, balancing benefits and risks of choices and decisions. This heritage can be seen in all cultures, religions, and in ancient writings from around the world. We in fact cannot trace the origin of bioethics back to their beginning, as the relationships between human beings within their society, within the biological community, and with nature and God, are formed at an earlier stage then our history would tell us.

To answer the question whether love for the environment is bioethics, we need to further clarify what "bioethics" means. I think there are at least three ways to view bioethics.

- 1. Descriptive bioethics is the way people view life, their moral interactions and responsibilities with living organisms in their life. It is also to describe the systems of organization that societies develop to protect bioethical values.
- 2. Prescriptive bioethics is to tell others what is ethically good or bad, or what principles are most important in making such decisions. It may also be to say something or someone has rights, and others have duties to them.
- 3. Interactive bioethics is discussion and debate between people, groups within society, and communities about descriptive and prescriptive bioethics. We can think of various forums and conferences and local, national, regional and global level, which should function to exchange views on how best to protect the common environment.

While descriptive bioethics looks at the systems and policies and choices that are made, comparing them and analyzing them, it does not judge them. Prescriptive bioethics judges the decisions and process of making those decisions, at both individual and group level. Developing and clarifying prescriptive bioethics allows us to make better choices, and choices that we can live with, improving our life and society. Many choices need to be made in the modern biotechnological and genetic age. The timing of reproduction, contraception, marriage choice, are not new. The use of animals, the conversion of the natural environment to farmland, and urbanization of wilderness areas are also questions faced for millennia. However, the pressure put on the environment with the growing human population and comsumption society have made us think more about the decisions that we do take and their impact. The fact that in some countries in the world life expectancy has fallen in the past few decades must suggest that some things are wrong, even from an athropocentric (human-centred) viewpoint. The degradation of the environment has numerous public health implications.

There are a set of principles or ideals which people use as a common ground for bioethics (4).

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They include the autonomy of individuals to make choices, while respecting the choices of others, justice. In all things we do, the ideal is to avoding doing harm, and trying to do good, and as I will argue, these can be summarized by the word love (1). Other terms may also stem from these ideals, such as human rights, animal rights, stewardship, harmony, but in the end these terms also come from love. The balancing of principles, self-love (autonomy), love of others (justice), loving life (do no harm) and loving good (beneficence) can provide us with a vehicle to express our values according to the desire to love life (1). However it needs to be supported by an organized system of choices that consumers can make, and it is here we see cultural diversity.

## **Cultural Diversity**

We can ask if different people use different principles to make decisions, and to judge these decisions. How different are the ethics between any two people? Diversity is part of what we call being human. A cross-cultural approach to ethics extends this comparison to between societies. We should never expect all people to balance the same values in the same way all the time, but the mistake that most make is to think that people in one group are the same. This is especially true of traditionally closed societies such as Japan, and cultures with different languages from each other. All groups are diverse, and we can never presume that our neighbour will reason the same way as ourselves, even if the social organization is based on this false assumption. Love and respect for others demands that we should also give traditional societies a change to adapt themselves to the modern life, rather than just merging them into the global modern order.

The extent of diversity or similarity in universal ethics can be scientifically measured. The results of the 1993 International Bioethics Survey suggest that there is at least as much diversity in individuals in any one culture as across the world (3). In that 1993 survey first performed in Australia, Hong Kong, India, Israel, Japan, New Zealand, The Philippines, Russia, Singapore and Thailand, the purpose was to look at how people think about diseases, life, nature, and selected issues of science and technology and genetics. Many open questions

were included to look at how people make decisions - and the ideas in each comment were assigned to different categories depending on the question, and these categories were compared among all the samples. People made very interesting comments. The diversity of comments was found to be the same in different countries, suggesting that reasoning about these issues goes deeper than cultures, or religions. Although societies are different, people and families are not, and there may be a finite number of principles used in arguing about any one dilemma (3).

The attitudes that people have towards biotechnology are basic to the acceptance of new applications of biotechnology in agriculture and medicine. Since the beginning of agriculture around 9-10.000 years ago, people have started to use living organisms to provide goods and services in a planned way. The importance of agriculture and aquaculture to human life is universal among large societies, which raises the questions, to what extent are the attitudes to the use of organisms to provide these goods, relationships with the organisms and ecosystems that provide them, and attitudes to the consumption of the products, universal.

To answer these questions we are faced with a number of strategies. Firstly we can look at the use of organisms and new products in different groups inside each society and between them, for example, do people eat beef or do they not? Another strategy that is used is to seek the guidance of traditional wisdom of a culture in determining what should be adopted. The strategy that I think allows us to look at what individuals really accept, and the reasons they use, is survey research with them as individuals, sometimes supplemented by small group discussion forums. Since 1991 I have been conducting opinion surveys in Japan and other Asian and Pacific countries, which allows trends to be examined, whether it be the adoption of new technologies such as gene therapy, genetic screening, and the arrival of foodstuffs from genetically modified organisms into supermarkets. We can see that the introduction of technology, and the associated debates, may alter opinion, and the extent to which people will accept new technology may change over time as the "nev" or "unnatural" becomes traditional.

The evidence suggests the differences between cultures and societies do not result from clear differences between individuals in these societies but that different societies cement differences in the policy that is adopted and seek to justify it by claiming cultural uniqueness. Democracy allows views of a majority (not necessarily even a majority) to alter legal rules, that may present divergent views between two countries even though the balance of public opinion may differ only from 55%-45% to 40-60% between the two. While cultural uniqueness is given as a justification for different policy, like the right to drive in big fast cars, on most issues we find people divided in every society. The social environment that people grow up in, and the education strategies, are becoming more similar with time suggesting that in the future responses will converge even more, but still differences will be seen as individual policy makers and alliances of similar minded persons can lead policy decisions.

The broadest concept of the human family is the entire world, and the term human family has been used in United Nations declarations. It has ancient roots, whether it be in Christian concepts of the world or of Mo Tzu in 6th century BC China. Mo Tzu argued that practicing universal love was in one's long term interests not only because other human beings tend to respond in kind to benefits and harms received, but also because heaven wills those practicing the doctrine shall ultimately benefit. The recent concept of love of others in human beings has developed independently over the past millennia in religions of ancient urban civilizations, China, India, Greece, Mesopotamia, Egypt, Mexico and Peru, and they all aim to stop excessive self-love.

While we may pursue global unity in common goals, such as combating global environmental problems such as the depletion of the ozone layer, deep ocean dumping of waste, or global warming, we should still recognize cultural plurality. We could define cultural plurality as social and political interaction within the same society of people with different ways of living and thinking. If we accept plurality we reject bigotry, bias and racism in favor for the respect for traditions of all in society, but this ideal is seldom met. However, if we think about the abbuses of the environment, we can see

consumption and pollution are high in any country with a modern lifestyle, whether it be Asian, African or American. The black market in chlorofluorocarbons (CFC) that deplete the ozone layer may be run by Europeans or Asians, people of all races will try to cheat the system for immediate profit at the expense of the environment. There will always be some people who do not seek harmony within the social organization. One of the principle failings of many ethical systems is that they ignore the selfishness of human behaviour.

While all would agree that tolerance of cultural diversity is generally welcome, all cultures impose limits on behaviour in society, including towards the environment. The limits to tolerance are already broadly outlined in international covenants such as the Declaration of Human Rights, the Convention on ozone-damaging chemicals, Convention on Biological Diversity, and on deep sea dumping. We also have economic treaties, such as GATT, defining the limits of unfair trade. At least at the level of consumption and resource use, economic priorities conflict with environmental protection, and we need better resolution of this conflict in practical bioethics.

# Love for the Environment

Human societies are organized based on anthropocentric ideas, humans come first and we generally only think of things from the perspective of human benefit and risk. Biocentric thinking is to place individual living organisms at the centre, to argue on behalf of each organism. Ecocentric philosophy is to argue from the perspective of maintaining a whole ecosystem. These three basic philosophical\* are basic to the way human duties towards nature are organized in social obligations, and we can see signs of all of them in most modern societies as well as in individual thinking.

The inter-relatedness of all living organisms can be readily seen in most ecosystems. Ed Wilson (5) proposed the theory Biophilia, saying that human beings inherently have a love for nature. He defined it as "the innate tendency to focus on life and like-life processes", noting that "to the degree that we come to understand other organisms, we will place greater value on them, and on ourselves".

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<sup>\*</sup>Standpoints

It is still a matter of debate whether it is real or not (6). Included in the hypothesis is that the human inclination to affiliate with life is inherent (biologically based), part of our species evolutionary heritage, associated with human competitive advantage and genetic fitness, likely to increase to possibility for achieving individual meaning and personal fulfillment, and that it has it has a self-interested basis for a human ethic of care and conservation of nature. Although many in modern society seem to destroy nature, it is suggested that this may merely be a result of an unnatural estrangement with nature.

One of the aspects of nature which people seem to love is a diversity of living organisms. The United Nations World Charter for Nature (1982) declared "Every form of life is unique, warranting respect regardless of its worth to man". As Mary Midgley (7) wrote about the duty of care and responsibility in the use of the terms "motherland" and "fatherland", "To insist that it is really only a duty to the exploiting human beings is not consistent with the emphasis often given to reverence for the actual trees, mountains, lakes, rivers and the life which are found there. A decision to inhibit this rich area of human love is a special maneuver for which reasons would need to be given, not a dispassionate analysis of existing duties and feelings." Nature has an intrinsic value that it wants to survive (8).

Sympathy with non-humans are seen in Buddhist writings, for example in the Hymn to Friedliness in Pali literature in Theravada Buddhism (Sutta Nipata), "May all be happy and safe! May all beings gain inner joy - all living beings whatsoever without exception, weak or strong, whether...seen or unseen, dwelling a far or near, born or yet unborn...may all beings gain inner joy." An extension of love to other species could be considered under the concept of stewardship. It has often been neglected, but has a long history in many religions, being central to a Judeo-Christian doctrine of creation (9). There are various religious stories to support preservation of biological diversity, the most famous of which is the story of Noah, which is shared by the Judeo-Christian-Islamic traditions. Noah preserved all the domestic and wild animals from environmental catastrophe, a catastrophe that it says was caused by the actions of humans.

Throughout time many have considered nature has intrinsic value, but usually these calls have been neglected. Alfred North Whitehead (1925) in Science and the Modern World said "The western world is now suffering from the limited moral outlook of the three previous generations... The two evils are: one, the ignoration of the true relation of each organism to its environment; and the other, the habit of ignoring the intrinsic worth of the environment which must be allowed its weight in any consideration of final ends". The intrinsic value of nature can be argued by Christian and Buddhist values, as shown by Schumacher (10,11). Yet, organized systems to protect the environment are still lacking in many countries. Other countries, like India, may have good laws but no organized enforcement, as seen in the pollution of ground water by the textile industry.

This widespread respect for nature and life was seen in the results of the International Bioethics Survey and the comments and pictures have been reproduced in the book Bioethics for the People by the People (3). By more research into the way people look at nature, we can find shared universal ideas about the relationship of humans to the earth and human responsibility to nature. In Japanese the word "inochi" can be translated as life, nature, the energy that holds things together. There are various images, as shown in comments about it in the surveys in Japan, but the *inochi* of every living organism is distinct, unique, and equal. The inochi departs when an organism dies, and is distinct from the idea of a soul. All organisms share the same amount of life, they are either dead or alive.

It has always been a challenge for ethics to define a "moral agent". It is not necessarily someone who looks as we expect, rather we have to look at our criteria and discuss those who are included or excluded. Many of the anthropocentric arguments for human distinctiveness are based on the idea that humans are special because they have the power to use technology to transform their situation and environment. Moral agents might not have to be species who can manipulate the world as they like, reshaping it physically and genetically. It may be a species that takes pleasure in leaving it as it is, and

not seeing joy in remoulding the environment.

Love preoccupies the human mind, and it would be naive of Homo sapiens to think it suddenly appeared overnight in our species. I have argued elsewhere that helping another species may be the least ambiguous sign of an all-giving love above the shadow of selfish genes (1). It is a fact of life that species often face each other in dilemmas and should we just pursue the benefit, immediate or long-term, of our species, or should we love other species? The concept of trans-species love should not be unfamiliar to many, who live with pets of other species, but is there something deeper than personal companionship? As Charles Darwin in The Descent of Man wrote in 1875, "It is certain that associated animals have a feeling of love for each other, which is not felt by non-social adult animals. How far in most cases they actually sympathize in the pains and pleasures of others, is more doubtful, especially with respect to pleasures."

Human beings are organized into societies bound together by love, trust and mutual dependence. Language is central to social structure. While not many species can talk using a complex vocabulary, individual communication systems are found in other social mammals and birds, and they are used to discriminate between individuals. It is also clear that the language instinct is something we are born with, not a social construct we acquire after birth. Some other behavioral systems may also be shared with other animals.

The comparison of consciousness, communication, self-awareness and other mental and social qualities has lead many to organize a hierarchy within animal species, which says that we owe more duties to those animals higher on the ranking. A few argue for respect for all forms of life, as Albert Schweitzer (12) said in Respect for Life. He argued for a reverence for all life. This approach makes no distinction between higher and lower life forms, saying that we can not judge other lifeforms in relation to ourselves. It makes the point that it is very difficult for us to understand or judge the importance of other living organisms in the natural order. The only reason for harming life he sees is necessity. However, what is "necessary" can vary widely between cultures.

A broader love for environment is found in the

1993 Parliament of the World Religions Declaration toward a Global Ethic (13). They wrote that an ethic already exists in the religious teachings of the world which can counter the global distress. They pointed out several directives that are found in all religions, including have respect for life. They extend this principle of respect to the lives of animals and plants. We can also see this principle in the protection given to national parks and wilderness areas, which are found in all countries but to different degrees.

## **Measures of Love**

The concept of love is applied to love of animals and to love of nature and this is found in many cultures. In Maori the word "aroha" is used to denote something broader than love, but including a oneness with nature and animals. In addition to history, literature and philosophy we can compare behavior to assess the love of the environment. Asia pollutes less per capita than America or Europe. This could reflect the imbalance between rich and poor countries in energy consumption, fossil fuel consumption, and use of raw materials. One North American consumes several hundred times the resources of most Africans. The right to personal enjoyment of a love of life is denied to many of the world's population by economic and social structures because of a lack of love shown to neighbour.

Bioethics has origins in the relationships between animals and nature. In evolution it is assumed that selfishness is required for selection. Some animals exhibit non-selfish behaviour, called altruism. Some even give when there is no hope to receive any genetic benefit, helping unrelated individuals. We must therefore ask the question is altruism the basis for love? As Wright (1994) reviewed theories of evolution for a gene for brotherly love, we can also see advantages to survival if a community has love for each other in all social animals. However, there are limits to this love. Some of the examples of inter-species altruism are stories of dolphins saving drowning humans in the ocean, that are found throughout history and throughout the world. We can ask how much humans in different societies help other species.

Interestingly, however, the presence of re-

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sources and wealth may make our ethical attitudes more generous, not only to human beings in social welfare, but also to the environment and animals. We can see this by the growth of animal rights in richer countries. De Waal (14) considered morality as a floating pyramid with the buoyancy of the concept determined by the resources available, but always with the order from top to bottom, self, family/clan, group/community, tribe/nation, all of humanity, all life forms. The exception however, is religious prescriptions against killing of animals, seen in Hindu or Buddhist countries, or Eastern countries where some parts of nature in religious temples or sanctuaries are preserved despite immediate human needs to harvest them. The corcern for environmental protection seen in richer countries may partly be due to the luxury that money provides for giving people a long term view on life and transgenerational responsibility, once it becomes easy to look after one's own life.

The concept of "do no harm" has a basis at a fundamental level - the level of being alive, and argues against hurting any living organism. If we are going to harm life, a departure from the ideal of doing no harm and love of life, it must be for a good motive. Destruction of nature and life by humans is caused by two human motives - necessity and desire. Basically, it is more ethically acceptable to cause harm if there is necessity for survival than if it is only desire. This distinction is required ever more as human desire continues to destroy the planet. What is a desire in one culture can be considered a need in another, as seen in the trends for private transportation system, cars and roads, and large houses. In these examples, some countries in Asia, e.g. Japan, Singapore, have some organized systems to encourage smaller cars and other countries, like China and India have reliance upon public transport, but this may not represent a specifically more organized society with less desire. The Indian and Chinese examples at least may be more a function of wealth and access. In all societies a large car has become a status symbol, despite the harm it brings upon the environment.

Love for the environment suggests we have an active motivation to protect the environment. We can see this in the protection given to national parks. Protected areas of plants and animals may al-

so be protected without human access as wilderness areas, which can represent love for the environment although often they are justified in terms of human-centred benefits (medicinal drugs, flood protection, aesthetics, tourist industry). However, population densities differ so a simple comparison of proportion of land area or of the different types of land area, that are protected, would not be very useful. Also some countries, like India preserve small patches of biodiversity around temples while European churches may not preserve nature next to them, but have larger national parks. It is a challenge for research to see how practical measures to the environment could be measured and compared.

### Conclusion

If we consider a complete bioethics we must include the duties we have to human beings as well as to nature. In the midst of growing awareness of environmental change and damage we should be aware of the need for sustainable living. We can argue for conservation from human dependence upon the environment, an anthropocentric environmental ethic. We not only have to view the environment in its role as essential to human existence, but we should value the environment it self, ecocentrism.

Universal ethics argues that we need to share benefits of new technology and risks of developing new technology to not only all people but all ecosystems. In all societies we find some tradition for love of nature and the environment, whether or not their religions were polytheistic or monistic. Industrialized societies have developed safeguards to protect citizens, and some of these involve considerable economic cost. While it may not be possible for developing countries' governments to impose the same requirements, they should not accept lower standards. There are promising signs that economic measures will be used to protect the environment, but it takes decades for paradigm shift to occur (15).

Generally, the real quality of life will not be decreased by decreased energy and resource consumption. Particular pursuits such as driving large high speed cars impose great costs on society both in energy use, in potential medical costs, and in environmental damage. It is symbolic that in the pictures of life in the International Bioethics Survey, a

picture from Thailand had someone riding a bicycle in the countryside, whereas in Australia or Singapore, for example, they were driving a car! (1).

How can we change these values? Respecting autonomy encourages free lifestyle choice, and suitable environmental- "friendly" options could be promoted as "trendy" pursuits, however, these are likely to be insufficient. One ethical possibility is personal environmental quotas as an incentive to lifestyle change (16). These would be possible if people of the world believe that the environmental crisis is important, and are prepared to change their lifestyles. These quotas would give every person an equal quota of environmental currency. We could modify so that people could trade these quotas with others for a regulated set cash price if they wanted to do so.

The image of a normal life has been changing throughout human history and especially during this century. Quotas would provide encouragement, and some penalties for those who can abuse the system. We could impose environmental sales taxes on luxury products in money terms, but this would still allow the rich to purchase them and continue their pursuits, while the middle class could not. This would be inconsistent with our ethical principle of distributive justice. The consumption of all goods could be given an environmental points value, and this could be summed for each person. The consumption would be monitored, rather than the production which is being taxed on a country level as carbon taxes or quotas (which would be subject to government pollution emissions control).

The main objection to this approach comes from the group who claim that the pursuit of individual freedom (self-love) is the most important ethical principle. If people cannot pursue their freedom to consume as much as they wish, they call it a violation of individual liberty. However, we also recognize limitations on individual liberty when activity prevents others from pursuing the same amount of liberty. The actions of many people living in industrialized countries today is resulting in environmental destruction which will prevent ot-

hers in the future from pursuing their liberty, breaking love of others and love of nature. Already the action prevents us from living a full and healthy life, rather many are exposed to toxins in the environment that cause disease. The destruction of the environment and disregard for other beings, ignores love. Love has more claims to be the principle ethical ideal than desire coming from autonomy (1). Bioethices does involve all of life, if we do not love all of life we cannot love other people.

#### **REFERENCES**

- Macer DRJ. Bioethics is Love of <u>Life</u>. <u>Eubios</u> <u>Ethics</u> Institute, 1998.
- 2. Potter Van R. Bioethics: Bridge to the Future, 1971.
- 3. Macer DRJ. Bioethics for the People by the People. Eubios Ethics Institute, 1994.
- Beauchamp TL and Childress JF. Principles of Biomedical Ethics, fourth edition. New York: Oxford University Press, 1994.
- Wilson Edward O. Biophilia. Cambridge: Harvard University Press 1984.
- Kellert Stephen R & Wilson Edward O, eds. The Biophilia Hypothesis. Washington DC: Island Press, 1993.
- 7. Midgley Mary. "Duties concerning Islands", Encounter 60, 1983: 36-44.
- 8. Rolston Holmes III. Conserving Natural Value. New York: Columbia University Press, 1994.
- 9. Berry RJ. "Christianity and the Environment", Science & Christian Belief 3, 1991; 3-18.
- 10.Schumacher EF. "The age of plenty: A Christian view", pp.159-172 in HE Daly & KN Townsend, eds. Valuing the Earth. Economics. Ecology, Ethics. Cambridge, Ma: MIT Press, 1996.
- 11. Schumacher EF. "Buddhist economics", pp.173-181 in HE Daly & KN Townsend, eds. Valuing the Earth. Economics, Ecology, Ethics. Cambridge, Ma: MIT Press, 1996.
- 12.Schweitzer Albert. The Teaching of the Reverence of Life. London: Peter Owen, 1996.
- 13.Kung Hans ed. Yes to a Global Ethic. London: SCM Press, 1996
- 14.de Waal Frans. Good Natured. The Origins of Right and Wrong in Humans and Other Animals. Cambridge, Ma: Harvard University Press, 1996.
- 15.Krupp H, ed. Energy Politics and the Problems of Global Sustainability. The development of industralized societies between short-term growth and long-term welfare. Heidelberg: Springer, 1993.
- 16.Macer D. Eubios Ethics Institute Newsletter 1, 1991; 43.

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