Review article

Deep Ecology: Contemporary Bioethical Trends

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Abstract

Deep ecology emphasizes the importance of the ecological problems as a practical issue, and its importance is in changing the human understanding of everything, including even man's understanding of who he is.
The aim of this paper was to present deep ecology, what it represents and how it has become a significant ecological movement of the 20th century and to indicate the connection between bioethics as new environmental ethics and deep ecology, as well as other environmental movements which, in the contextualization of bioethics, emphasize changing the outlook on life, giving a better knowledge of it, and allowing questioning of social actions and looking at events from different aspects. The idea is to emphasize that man is not only an active, but also a responsible being which is capable of making a paradigm shift in responsibility, and therefore, taking responsibility for all life on Earth.
Content analysis and comparative method were introduced and applied for the requirements of making this review.
Based on the obtained results, the review points to the need to create new ethics which could introduce a general value system for all living and non-living things - a paradigm shift involving man as part of nature and not opposed to it, and to successfully address these complex issues. It will take a profound shift in human consciousness to fully comprehend that it is not only plants and animals that need a safe habitat - because they can live without humans, but humans cannot live without them.

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Introduction

From the beginning of man's life on Earth, every invention and discovery he had made to ease life was about subduing nature for his benefit (1). The reason why the problem began to appear, back in ancient times, is the importance of the presentation of the course of human thought and how changing this thought has led to the consciousness that in its expression subjugated the entire world around itself (2). Deep ecology emphasizes the importance of ecological problems as a practical issue, and its importance is in changing the human understanding of everything, including man's awareness of himself (3). The result produced would be that deep ecology, pointing to the value of all living things, also wants to point to the responsibility that people have in their environment. The new ethics must also have the dimension of sustainability, which can be accomplished in the frame of bioethics, as an interdisciplinary area of science. It is necessary to change awareness so that people can re-establish a relationship with nature without perceiving nature as a resource from which man will have a (short-term) benefit (4). In that sense, international nature and environment protection laws are deficient in practice, and citizens also need to contribute to ecological awareness.

By unifying human approaches in the relationship to nature, this review aims to show that this relationship has become threatened. The aim was to determine whether deep ecology finds its justification in the change of awareness regarding human relationship to people and nature and to show how and to what extent environmental and nature protection which exceeds ecology in its complexity is carried out.

Deep Ecology

Scientists have the most significant responsibility when it comes to preservation and strengthening of the ethical principles in their research and institutions, to act beneficially upon this crossroad of fate from where one can either crash into eternal doom or finally get into the haven of peace (5). Increased interest in the problem of the environment (i.e., the ecological problem) began to appear during the 1970s, and considering the need for new ethics, some scientists and ecologists came up with the idea of said ethic. That considered, Rand Aldo Leopold, a forester, philosopher, writer, teacher, and one of the greatest American biologists called such ethics the ethics of the Earth, which would, by expanding the boundaries of the community, contain everything - from earth to animals (1). He explained the base of his ethics, which was to protect wholeness and stability, and only then can the righteousness of the matter itself be discussed. Arne Næss expanded the thought behind such ecological movement with the diversity between surface and deep elements, where the surface elements mark our avoidance to contaminate the environment exclusively for our own benefit. In contrast, the deep elements represent the protection of the whole biosphere, regardless of the benefits a human being could have (6). This division in the surface and deep elements, that is, shallow and deep ecology, points to the meaningful division within contemporary ecological thought (7). According to that, shallow ecology represents the anthropocentric thought in which a human being is above nature, and nature has only instrumentalist value, while deep ecology goes for the highest ecological norm: preservation of the vital needs of everything living (8).

The maker of the term deep ecology, Arne Dekke Eide Næss, who was born in 1912 and died in 2009 in Oslo (1). He was one of the most famous Norwegian philosophers, who taught at the University of Oslo between 1937 and 1970, where he also graduated and completed a master's degree. He taught semantics and gathered a group of young philosophers and sociologists who were applying empirical methods to affirm the meaning of philosophical terms. He also taught the philosophy of science and the philosophy of Spinoza and Gandhi (9), who also had a significant impact on him. As a hiker and a tour guide of the first expedition to the Tirich Mir mountaintop in the Islamic Republic of Pakistan, his motivation for nature and environmental protection was no wonder.

Although it is not about the motivation founded on the reformist current of the ecological movement, which only wants to prevent contamination, Naess should be given a closer look as a supporter of the revolutionary current, who supports the original current, but who also builds his philosophy seeking for new metaphysics, cognitive theory, and ethics which would solve the relationship between a human being and nature. He called this (eco)philosophy, which is contained in the term deep ecology and synonymous with the terms fundamental ecology, a new philosophy of nature, ecosophy, or ecophilosophy T. In that regard, ecosophy T is built starting with oneself, the change within oneself – to act upon welfare as a whole (1). The core of Næss's philosophy is about connecting everything into a whole, that is, the idea that nothing works independent of the whole, meaning that the relationships between people, plants, and animals depend on one another. According to that, two fundamental principles of that philosophy stand out, as well as those of the ecological movement: self-fulfilment and biospheric equality (5). Contrary to health and welfare of the population, more precisely the population which lives and acts in the developed industrial countries as a central theme of the contemporary society fighting against the contamination of the environment, Næss turns to the inner knowledge of norms, values and ethics, meaning that ecological science will bleed into interdisciplinary practical life wisdom (3). Naess called that transition deep ecology (9). Furthermore, Næss and the American philosopher George Sessions (who also referred to the new ecological ethic which Næss discovered in 1972 and referred to as deep ecology) shaped and exposed the principles which would work for the deep ecology platform, in eight chapters in an article from 1984. Some of those principles are:

1. The welfare and the success of human and non-human life on Earth have their own values (synonyms: intrinsic value, inherent value). Those values do not dependent on the usefulness of the non-human world for humans.

2. The richness and diversity of life forms contributes to the realization of these values. People have no right to jeopardize that richness and diversity unless the goal is to satisfy life needs (6).

The authors state that, although those principles relate to life when we talk about the term biosphere, they are also meant to include the unliving, like rivers, environment, and finally the ecosystem. Naess replaces the term biosphere with the term ecosphere, and that way he does not limit himself to the form of life in the immediate or global surroundings (9). In addition, he replaces the term environment with the term co-world to mark the place of a human in the most truthful way possible.

Deep ecology increases the meaning of the principle of letting the being be (10) while trying to bring ecological consciousness to a higher level and achieve a healthier ecological life. Among other things, deep ecology is founded on Darwinist thought, which tries to move the human away from the centre of life and into a natural circuit of existing (9). Because of that, the Darwinist element presented in the deep ecology builds a complex and contradictory relationship. Deep ecology postulates that exiting from evolutional and acceptable circumstances, which Darwinism sets as an imperative in the way of life, damages the human civilization and nature (1). It exposes the human being and breaks the illusion that humans are wise enough to rationally manage their physical and social environment, not taking into account the evolutionary processes (9). Another relevant characteristic of deep ecology is its attitude towards wilderness, the only real-world left, around which, because of its ecocentric orientation, exists a cult of wilderness (11). According to that, it advocates ecoregionalism and condemns urbanization and hypermobility. It is clear that deep ecology nearly revises that pantheistic belief and divinifies nature, but what needs to be underlined is that it does not replace religion, cults, or a mystical worldview, even though it has mystical aspects. The possibilities and the controversy of deep ecology are manifested even in its basic statement about the concept of intrinsic values, which states that every part of nature is valuable in itself, and not because of

higher goals (human, for instance). In that regard, humans are a part of nature and not its highest achievement (9). However, nature is formed hierarchically, with humans on top, which subjects this concept to criticism and doubt (11). By replacing the term biospheric egalitarianism – in principle – with the term biospheric equality, Næss equalizes all the organisms in the biospheric community, and their equality is a consequence of a relational interconnection, which gives them an intrinsic value. The fact that humans are at the top of the pyramid does not mean that they are not responsible for it. Understanding that a human being must satisfy its needs to survive, Næss does not deny those needs, but only for existential purposes, and when human secondary needs and vital needs of another species come into conflict, a human being should sometimes abandon egoism before the needs of other living beings (12).

The authors of the book Deep Ecology, Bill Devall and George Sessions, think that all organisms and entities in the ecosphere, as parts of an interconnected whole, are equal by intrinsic value. A question arises how all these living, but diverse beings are equal by their intrinsic value. Furthermore, one criticism may be that even if there is an intrinsic value relating to the whole, the book does not say anything about the values of individuals. No individual is a necessity for the survival of the ecosystem as a whole (6). It is concluded that the ethics of the deep ecology does not answer the questions concerning the value of life of individual living beings. The reason may be that the wrong questions are being asked: ecological ethics might be more acceptable when applied to the level of species and ecosystem. In trying to establish that value based on the ecological ethics, a certain holistic feeling arises, a feeling that a species or the ecosystem is not just a total of individuals, but an entity in itself (3).

Authors like Lawrence E. Johnson, Frey Mathews, and James Ephraim Lovelock include species and ecosystems as holistic entities or selves with their own form of realization (6). If the species and the ecosystem can be considered a type of an individual with its own interest, the ethics of deep ecology must face the problems of determining the moral value of the species or the ecosystem again, regardless of the value which it has because of its importance for sustaining life (9). The fact that the biosphere can react to events in ways that look like a self-sustainable system does not show that the biosphere wants to contain itself consciously (1). This fact underlines that the ethics of deep ecology must reject its moral base because the argument stemming from the intrinsic value of plants, species, and the ecosystem is problematic (6). This, of course, does not mean that the argument for protecting intact nature is weak, but the argument based on the difference between the feeling and non-feeling creatures is firmer than the division between the living and non-living (5). The arguments should show that the value of preservation of the last significant areas of untouched nature significantly overcomes economic values (6).

A human must acknowledge that value as an ethical category for that to happen, and therefore, confirm its responsibility (13). If a human's realization of interests for his benefit is acknowledged as an intrinsic value, then it must also be acknowledged for other living beings who are ensuring their well-being (11). Also, the concept of the "right of nature" is doubtful because it enters into a new manipulation. The right to preserve natural resources is contradictory to the concept of preservation of intrinsic values (13). The task of intrinsic values is building the marvel towards the wholeness of existence which is independent of humans (11). It stems from the fact that due to the prevalence of big cities and mechanicalized environment, such marvel cannot be seen or felt towards the non-human, which is what the deep ecology wants to revive. One of the objections to deep ecology is humanist voluntarism, which postulates that humans can change things by their own will. Nevertheless, ecological destruction occurred because of actions of generations, and that is also why one generation cannot change it.

The stumbling stone of deep ecology is that if it cannot change people's awareness, it cannot lead to radical change (10). Modern ecology states that nature existed before the first

humans and that it will continue to exist, which is different from the understanding of tribal societies, and this is something that can be the encouragement for treating nature with more respect. Tribal life, which deep ecologists advocate, is unacceptable for most people. In that regard, bioregionalism is unenforceable in the global world (11). Talking about a relationship of a human being towards nature that is filled with awe, a German physician, theologian and philosopher Ludwig Philipp Albert Schweitzer is the most noted expert in defending ethics by expanding on sensitive beings (9). Using the phrase "awe before life", he builds the ethics of awe, which is based on having equal awe before every life, as well as one's own life (11). He shaped the first and extensive attitude of philosophical biocentrism (7), but his ethics finds itself before the question: What is it like in the cases in which human life can be preserved only then when another human life has to be destroyed instead (14)?

Deep ecology sets a unique view of the relationship towards evolutionism. Generally, the attitude of the deep ecologists is that modern life in industrial societies is not evolutionarily adjusted (11). Tomislav Markus understands that people did not kill nature, but they abandoned the environment of evolutionary adaptation. As the author points out, deep ecology is closer to science and philosophy, and it is not a moral lesson for wealthy individuals (10). Markus points out that knowledge in biology and ecology is essential for understanding the relationship between humans and nature. So is the awareness of the pressure modern industrial societies put on the environment, which means that evolutionary adjustment to the environment is impossible. Therefore, the author sets an imperative in creating a new view of nature, human nature, and human inadaptability to evolution (11).

Since the base of the humanist disciplines lies in dualism, a human as a being is separated from nature with its history about the self-creative process, which is founded on biophobia and ecophobia. The solution is found in the human need to escape into the circumstances of an organic existence (9), representing the escape from environmental destruction. According to that, deep ecology is the escape from consumerism, hyperurbanism, hyper-population, and all other significantly destructive orders of the modern industrial society (15). The solution might be seen in accepting naturalness as a characteristic of human nature, which could decrease environmental destruction. To stop environmental destruction, in favour of life preservation, deep ecology emphasizes the change of the paradigm (1). That would mean that the paradigm, which positions the human being in a superior position looking at nature exclusively as a resource, should change by accepting the evolutionary insights about people's lives. It is trying to rise above consumerism as one of the characteristics of technical civilization. Markus thinks that there are too many people living on this Earth who are not one with nature and who, by that, challenge it by destruction (11). The solution is in the tribal communities, and the precondition is decreasing the population. It is the tribal communities who have the lowest rate of intervention in the environment, as opposed to industrial societies which replace life through the technical and, by doing so, they put pressure on the environment. According to Næss, the quality of life of an individual and of an entire population cannot be considered if the size of that population is excessive. He agrees with decreasing the population in a non-violent way through voluntary birth control (12). Also, he thinks that there should be a 100 million people less on Earth. Numerous deep ecologists believe that diseases, wars, and lack of food will more likely lead to decreasing the population than the rational, controlled way (10). For instance, when Næss wrote about the solutions for depopulation, there were six billion people in the world, while today that number has exceeded seven billion and is still growing. As partially shown before, the two attitudes were determined according to ecoethics: shallow and deep ecology, which try to solve the problems regarding human violations against nature (16). Various ecological ethics or ecoethics appeared because of the care for nature and the paradigm change, as is the case with deep ecology. Deep ecology, by pointing to the value of all living and

non-living beings, also wanted to indicate the responsibility of all towards the environment (17). That term, as well as others, lay the foundation of bioethical principles, and the relationship between bioethics and deep ecology (5).

Bioethics and Deep Ecology

Bioethics is a term that came into use in the 1970s, relating to ethical questions in the areas of biology, medicine and psychology in order to provide answers to the challenges of new knowledge. Although the term bioethics, i.e., "bioethik", was first used by Paul Max Fritz Jahr in an article from 1927, the credits for conceptualizing and preparing the term go to Van Rensselaer Potter II, who built the foundation for the development of bioethics in his work in the 1970s (15). Since the meaning of life is broader than the human or medicinal aspect, bioethics questions the responsibility of human action towards humans themselves, but also towards all life on Earth, or better said towards the biosphere (18). Namely, Potter thought that ethical values cannot be separated from biological facts, and he considered bioethics to be a bridge between science and humanity (19) which includes all living beings or, in other words, a biosphere essential for guaranteeing a future (20). Numerous discoveries have brought new knowledge, which he believed could not in itself be completely bad or good, but that it represented power, and, therefore, once available, it would mostly be used for power (21). It is therefore essential to know how to use new knowledge, and that is possible only by possessing the wisdom on how to use new knowledge (22). On that end, he believed that bioethics as a science of survival would provide the wisdom on how to ensure sustainability (21). However, despite that, bioethics is often synonymous with clinical, medical or, the commonly called, biomedical ethics, which is wrong and inconsistent with Potter's original idea of a global bioethics which deals with man's relationship with himself, but also with the ecosystem (23). Bioethics cannot be only clinical ethics because the concept simultaneously contains elements of environmental ethics — it is concerned with the survival of man, but not any survival - the survival which considers the survival of the ecosystem that has its value, entirely independent of man (24).

Finally, according to Potter, bioethics implies the inevitable interconnectedness of man and the rest of the living world (25), or in other words, an interconnected biosphere (20). Deep ecology as a part of environmental ethics understands people as an indispensable part of nature or a link in the chain of life, it points to the interconnectedness and interdependence of all parts of the ecosphere, emphasizes the primordial value of all species regardless of human needs, and it focuses on wisdom and balance (26). Deep ecology can be seen as a form of a radical environmental critique of the technological civilization which reacts to technolatry, anthropocentrism, instrumentalism and resourcism, consumerism, and linear progressivism which overtook society with the emergence of new knowledge (27). Naess considered deep ecology to be an ecosophy developed under the influence of Leopold, focused on wisdom, that is, the wisdom of the Earth, which focuses on ecologically wise and healthy living (28). It is shown that ecological ethics, ecoethics, or environmental ethics gather different theories, some of which are mentioned here. For example, ecocentrism, biocentrism, pathocentrism, or their mixed forms such as ecocentrism and ecofeminism, as well as the ethics of deep ecology from which each of them stems, try to set a frame in order to discuss the moral relationship between humans and inhuman entities, by expanding the human moral obligation to animals, plants or certain areas of nature or life in general (29). Despite the critics and the deficiencies to which deep ecology subjected, the framework for building a new theory is the concept of responsibility, more precisely the responsibility of acting, as in lighting the effects of knowledge (30). Also, new ethics must have a dimension of sustainability, which bioethics as an interdisciplinary field of science can realize within the scope of its content, and its strength can be seen in generating a new sensibility and creating a new awareness which goes past particular

dimensions and tries to preserve life to stabilize all the segments of society (29).

In the works of Leopold and Potter, it is evident that bioethics and environmental ethics share a common source. The connection between bioethics and deep ecology as part of the environmental ethic is in their vision of an interconnected biosphere (20). People are a part of the natural world, and not just bystanders, and based on that, the responsibility towards the world around and towards each individual is evident (31). Bioethics and environmental ethics also share wisdom as a common root (21), mostly because of new knowledge. It is precisely because of that high complementarity between bioethics and environmental ethics that, in 1988, Potter proposed the introduction of the new term global bioethics (32). Potter coined the term global bioethics in an attempt to protect the new science of survival from a growing transition into a predominantly clinical ethics, but also to further expand it with even more elements of environmental ethics, especially under the influence of Leopold's legacy (33). However, despite all that, bioethics and deep ecology have over time developed into two separate fields (20), which has led to the creation of a gap between bioethics and environmental ethics (34). Namely, bioethics has mostly developed into clinical ethics, where the focus is on the individual health of a human patient, while environmental ethics has developed more with the focus on biosphere health and not on individual health, that is, on the health and sustainability of the overall ecosystem (35).

Public Health Ethics as a Bridge Back to Potter's Bioethics

Public health ethics is a relatively new field, coming into its own somewhere at the beginning of the 21st century, and it is still in its developmental stage but in recent years it has become one of the fastest growing subdisciplines of ethics (34). It is deeply rooted in bioethics, clinical and research ethics, and also in environmental ethics (36). Public health ethics is primarily focused on policies, programs and laws for the protection and promotion of public health, and the focus is not on the individuals but on the community (i.e., the population) when it comes to achieving the common good (34). Since health is a state of complete physical, mental and social well-being and not merely the absence of diseases or infirmity (20), the complexity of public health, and thus of public health ethics, is evident. The fact that human health depends on the environment has been known since the beginning of time, and today it is increasingly clear that it also depends on animal health, because the convergence of humans, animals, and their products is more pronounced than ever before (37). The current coronavirus pandemic shows the importance of interconnectivity of the domains of people, animals, and the environment as a group of interconnected circles when it comes to public health, but also when it comes to the future of all living things (38). Severe acute respiratory syndrome coronavirus 2 is most likely the product of ecological conditions created by humans, while the related pandemic is a product of the number, density, and connectivity of the human species and its interaction of the environment (39). It is obvious that the health of humans is connected to the health of animals and the environment, and, therefore, we can say that the health of each of those three domains is the product of interactions of triangles of their health which, in fact, forms public health (40). That kind of public health – the One Health approach (41) – is in line with Potter's vision of an interconnected biosphere; hence it can be considered as a planetary vision of One Health (42) or Global One Health, and, consequently, we can talk about the global public health ethics (Figure 1) (43).

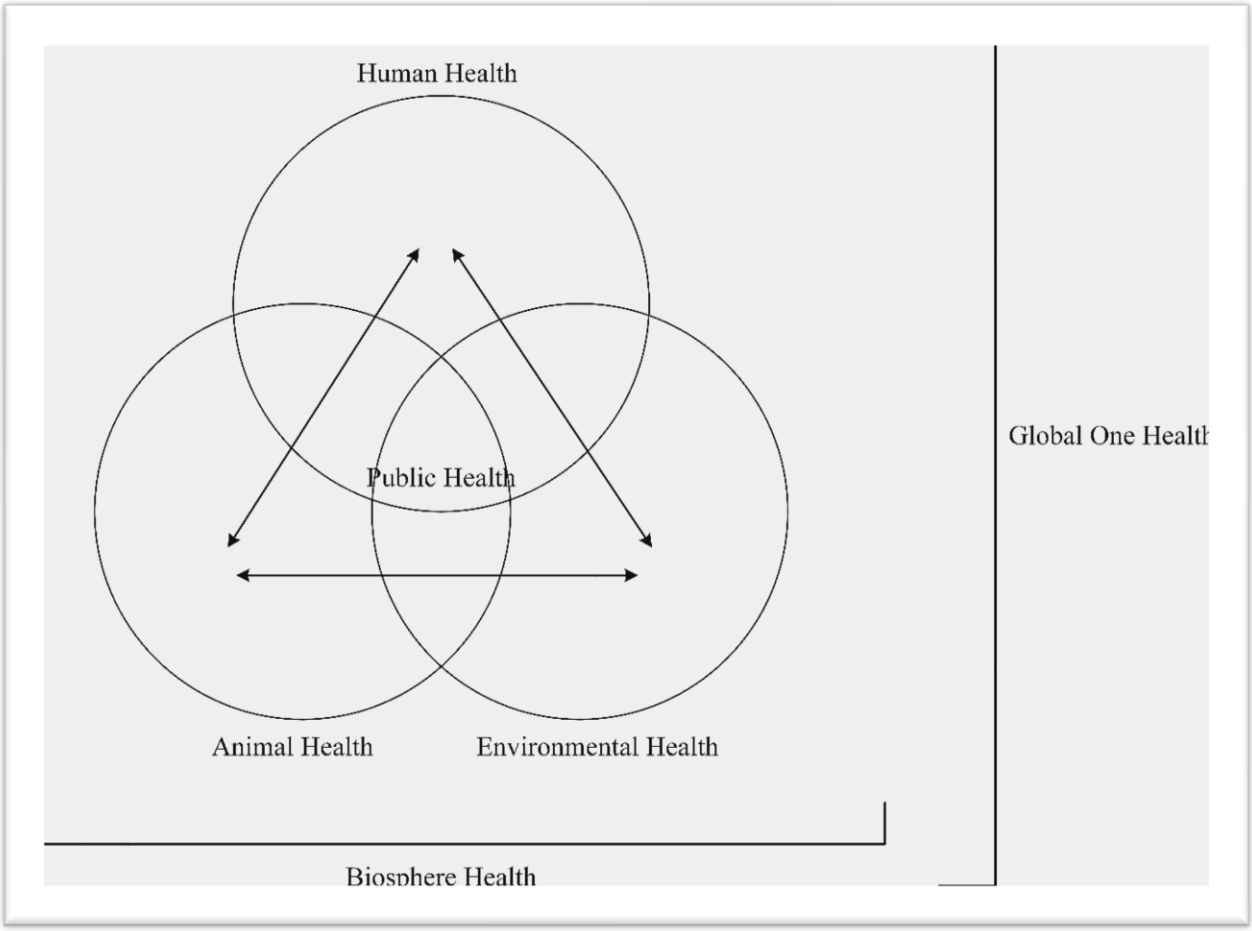

Figure 1 The expanded model of the Global One Health concept

Potter sought to include health, survival, and the environment in the new ethics, which will combine knowledge and deliberation in the human constant quest for wisdom, that is, the knowledge of how to use new knowledge for the survival and progress of humankind (44). Those qualities are contained and encouraged by public health ethics, which on one hand overlaps with bioethics, and on the other hand with deep ecology as part of the environmental ethics, while in its origins contains features of global ethics (20). Public health ethics shows that human health is strongly and inseparably linked to the health of the planet (the biosphere) and that the health of the community is essential for the health of individuals, which in turn has a strong impact on the health of the population (45). That is not surprising since public health deals with the health of the individual, but also with the health of the environment, in order to achieve the best possible health of the population (20). The case of the coronavirus pandemic underlines the need for a fundamental shift in the human conception of health, sustainability, and humanity, which is only possible by returning to Potter's bioethics, which evaluates and considers all living beings, or in other words, the biosphere (46). Based on everything mentioned above, public health ethics can be used to bridge the gap between bioethics and deep ecology as part of the environmental ethics to restore the values of Potter's bioethics for a brighter future of all living things (34).

Conclusion

The history of ecology starts with the Neolithic Revolution, although it seems that it was only after the revolution that we heard about ecological problems. It has been confirmed that, at the same time when the human

anthropogenic activities started to change his organic and wild environment, to which he is genetically adjusted, began the alienation of the wilderness that he has gotten used to (13). Of course, it was not just humans who conditioned the (negative) changes in nature; there were also volcanic eruptions, asteroid collisions, earthquakes, and floods – in other words, a multitude of natural disasters to which most of the living world is not adjusted and most of which happened long before human existence.

With the development of civilization, the shaping of cultures, and usage of technology, human beings genuinely become active factors in affecting nature. From Greek philosophy to Cartesianism, nature was thought to be the starting point for questioning everything (47). Experiencing nature as a devalued magnitude and the subject of knowledge conditions the forming of new things, more specifically new age humans. The new age products are modern science and technology, in which science is the beholder and technology is the executioner (48). The role of technology is to satisfy the needs of life as quickly and pleasingly as possible, and through that, the consumer society is created, which also affects the expansion of the ecological crisis. It is no wonder that the relationship of a human being and nature is altered because of the eternal nature of modern science and technology (49). Numerous archaeological studies have shown that the ecological problems started with the Neolithic domestication, which has increased in intensity in the last few centuries and led to an ecological crisis (50). Although the ecological crisis does not affect everyone equally, it is a problem that significantly influences life and demands an urgent solution, regardless of those who think that the ecological crisis is either a reflection of capitalism or industrialization, contrary to those who believe that technology could solve the problems of humanity (51).

Ecology contains many areas affected by biosphere processes, which should be contained to access the solution to its problems. This should be done with the help of sustainable development, which presents the principles of sustainability of the system, a way of development that does not degrade or violate nature (50). However, to achieve progress, it is people's attitude towards nature that must change, not their attitude towards themselves, which is how Næss formulated it in his philosophy, known under many other terms, but mentioned here most often under the term "deep ecology" (52).

The concept that emphasises the value of every life — in (new) bioethics, ethics of life, which due to its interdisciplinary area of impact can be applied in reality, is enriched through that responsibility (53). In recent years, it has come to light that public health ethics can be used to bridge the gap between bioethics and deep ecology as part of the environmental ethics, thus enabling the return to Potter's bioethics which has built-in values of deep ecology (54).

Although much has been done in recent years, deep ecology is to a great extent still in its very beginnings.

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