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IS A PHILOSOPHY OF ECOLOGY POSSIBLE AS A SCIENTIFIC METHOD?

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Abstract. The advancement of science and the change of moral norms in a market-driven society not only generate prosperity but also challenge the future of humankind. Most of the changes and problems in the environment can be foreseen if we turn to the knowledge that we acquire through ecology not only as an interdisciplinary but also as a transdisciplinary science. It is of no less important though that this knowledge should be rationalized in accordance to values and moral norms – in terms of a philosophy that explains the meaning of the technologically changing world and the consequences for the future.

Keywords: ecology; philosophy; ethics; science; environment

Introduction

In 2018 the first edition of the Club of Rome last report was published, having the title "Come on! Capitalism, Short-termism, Population and the Destruction of the Planet" by the Co-Presidents of the Club of Rome, Ernst von Weizsäcker and Anders Wijkman, including also other scientists and members of the club who were also involved in its prepublication (von Weizsäcker & Wijkman, 2018). Besides the analysis of the human activities impact on the environment the report focuses on its changes that are associated with different ideologies as well as the presence of outdated philosophical worldview. However, one of the main factors that has caused the crisis in the world we live in, which can also be called "an ecological one", the authors search in the current conditions of the modern capitalism. As the report states: „This indicates that the current crisis is also a crisis of global capitalism“ (von Weizsäcker & Wijkman, 2018). Another keypoint of the report is that of the devastating human impact on the environment, which is enhancing and is getting deeper too. According to the authors humankind has entered a specific era, which they call the Anthropocene. Moreover, the other authors express the same thought. „The Earth is not in the Holocene anymore“, asserted Crutzen, a Dutch atmospheric chemist

and Nobel laureate. Instead, he said pausing to find the right word, we're in the "Anthropocene", a new epoch in which the Earth's geology has been fundamentally changed by humans (hence the description "anthropo", meaning human)" (Carey, 2016). Furthermore, „Proposals for marking the start of the Anthropocene include an "early Anthropocene" beginning with the spread of agriculture and deforestation; the Columbian Exchange of Old World and New World species; the Industrial Revolution at ~1800 CE; and the mid-20th century "Great Acceleration" of population growth and industrialization"(Waters *et al.*, 2016). It has to be mentioned the crisis in the summer of 2019 with the unprecedented number of fires that raged through the Brazilian Amazon rainforest, especially in August, most of which have been intentionally started by farmers or ranchers to clear forest land for agricultural purposes. The fires were so many and large (72 843 which is an 80 percent increase from previous year) that the smoke was seen from space and the scale of deforestation can have global climate impacts (Gibbens, 2019).

Perhaps one of the most important conclusions of the Club of Rome last report is the fact related to the devastating crisis which humankind is increasingly stepping in. According to the authors „The crisis is not cyclical but growing. And it is not limited to nature around us. There are also a social crisis, a political crisis, and most of all – moral and ideological crisis. A crisis of all capitalist system“ (von Weizsäcker & Wijkman, 2018). A philosophical insight in researching the human intellectual and social history and its relationship with man's attitude toward the environment can contribute to understanding and overcoming this crisis. „The Club of Rome was always conscious of the philosophical roots of human history“ (von Weizsäcker & Wijkman, 2018). This is also one of the significant and new ideas of the members of the Club of Rome that we are going to examine in this paper.

Discussion

According to the authors of the report one of the main factors that has caused the crisis to get deeper is the ideology of liberalism. In the report it is stated that liberal politicians like R. Reagan and M. Thatcher are among the main supporters of this ideology. The former US President Ronald Reagan and the former UK Prime Minister M. Thatcher present an ideology of pursuing an economic policy that admits no boundaries and restrictions. As the authors point out their ideas contribute to the „‘financialization’ of the economy“, which process is at heart of inequality and therefore, the uncertainty and risk of social, political and economic development in relation to the environment. „After a bumpy start, Reagan and Thatcher were successful in fostering economic growth and creating jobs“ (von Weizsäcker & Wijkman, 2018). According to the authors of the report the connection of such economic policy with the ideas of the neo-liberal organization

Mont Pelerin Society, whose prominent founders are Friedrich Hayek, Ludwig von Mises, Karl Popper and others, is apparent. „Once Margaret Thatcher came to power in Britain and Ronald Reagan in the United States, they quickly began to implement the Mont Pelerin ideas. “In Reagan’s teams of economic advisors, 22 were members of the MPS“ (Ibid.). According to the authors of the report liberalism, as a philosophy and as an ideology, is among the main threats to the environment. The emphasis on consumption, enrichment, the depletion of resources, the pursuit of their depreciation for economic benefit and interest, the lack of responsibility for the future of the Earth and the generations after us, are among the major vices of the liberal ideological doctrine. “With political roots that dated back to Pinochet’s Chile (1973), Thatcher’s Britain (1979) and Reagan’s America (1981), after 1989 a *radical* market philosophy became the new mind-set of the entire world. Liberalization, deregulation and privatization became the uncontested melody of the political agenda...” (Ibid.).

The threat to biodiversity is another major challenge to humankind that establishes the modern liberal capitalism. This threat is a direct consequence of imposing the liberal idea of total domination of the market as an established social institution. “Biological diversity, or biodiversity, is a generic term for the variety of life on Earth” (Rolston, 2003). Biodiversity and its conservation is directly related to the preservation of life on our planet. This is a common goal for all people, regardless of their beliefs, worldview, political or religious biases. „Scientists and religious persons may differ about evolutionary origins but seldom differ about the urgency of conserving biodiversity“ (Ibid.). The Anthropocene, as the period in which we live and which the authors of the report write about, makes the crisis of biodiversity get deeper. „Another number on the anthropocene: 97% of the body weight of land living vertebrates are farmed animals and pets (67%) – and we humans (30%). This means elephants and kangaroos, bats and rats, birds, reptiles and amphibians combined make up a mere 3% of the world’s land vertebrate bodyweights!“ (von Weizsäcker & Wijkman, 2018). Reducing biodiversity is one of the biggest threats not only to the future of humankind but also to the future of life on Earth. According to biologists, economists, philosophers, scientists in different fields of studies, the danger of reducing biodiversity is that this process risks to become irreversible, which in turn threatens to have fatal consequences for the lives of the entire planet, including humans. The authors of the report give an example with Elizabeth Kolbert’s book: „Already today, the earth is in the midst of the ‘6th extinction event’...the sixth, unfolding very rapidly over the last century, is exclusively caused by humans. During this period, an explosive increase in human population plus an ever-increasing land use have destroyed or completely altered most habitats of wild plant and animal species“ (von Weizsäcker & Wijkman, 2018).

One of the most important section of our research is the one that focuses on the philosophical understanding of the environmental crisis. In other words, does

ecology as a scientific knowledge include some philosophical aspects? In the section „Philosophical Errors of the Market Doctrine“ (von Weizsäcker & Wijkman, 2018), the authors of the report think over the validity of classical philosophical statements about the economy and its place and influence in the modern world. All these philosophical considerations are related to the great idea of the Enlightenment - a social process of emancipation of Western societies from the dogmas of religion, the pursuit of knowledge and progress in science, economy and politics. The German philosopher Immanuel Kant describes most accurately this process in the first lines of his article “An answer to the question: What is Enlightenment?”: “*Enlightenment is the human being's emergence from his self-incurred minority.*“ *Minority* is inability to make use of one's own understanding without direction from another. This minority is *self-incurred* when its cause lies not in lack of understanding but in lack of resolution and courage to use it without direction from another. *Sapere aude!* Have courage to make use of your *own* understanding! is thus the motto of enlightenment“ (Kant, 1999). The Enlightenment is a historical process that covers the entire Western Europe. The authors of the report draw attention to the ideas of such famous enlighteners as Adam Smith, David Ricardo, John Locke and others. Moreover, they focus on Darwin's ideas about evolution, which according to the authors of the report „have been hijacked into the service of economic and social theory, often under the name of ‘Social Darwinism’.“ (von Weizsäcker & Wijkman, 2018). As a whole the entire second part of the report is called – „C'mon! Don't Stick to Outdated Philosophies!“. Perhaps it shall be mentioned here that not all environmentalists unequivocally accept the relation *man - the nature* that originates from the idea of the Enlightenment. „The hard-line environmentalist indictment charges that in the early modern era, leading European thinkers abandoned the principle that a good life is lived in harmony with nature and the divine will embodied in its workings. Attempting to defy ethical and physical limits on human activity, these theorists proposed an intensification of control over nature to improve man's worldly estate“ (Hinchman & Hinchman, 2001).

The conclusion of the report in this section is a philosophical one: „But that market doctrine has been failing to a relevant extent, and some of the core tenets of today's market philosophy consist of massive misquotes and misunderstandings of their original meaning. That should lead to a better understanding of the *philosophical* errors of the doctrine, and to a broader mind-set. For this, one has to dig deeper into the philosophy of understanding, into the epistemology of human existence and of nature“ (von Weizsäcker & Wijkman, 2018). The tension, if we may put it this way, between the ideas of the Enlightenment especially that of the scientific progress and the subsequent human well-being and the need to protect the environment which we live in, and above all, the restriction on the consumption of natural resources, has long been echoed in the science. For example, in an article on the problems we research it is stated „In recent

years a rift has opened up between some currents of environmental philosophy and the legacy of the Enlightenment. Prominent eco-philosophers have blamed the latter for our contemporary environmental crisis“ (Hinchman & Hinchtnan, 2001). Therefore, environmental problems, or as it is commonly called in some countries – ecological problems – have also a philosophical aspect besides purely biological or technical one. As Jay McDaniel writes: “The word *ecology* has two meanings. It refers to a discipline within biology that studies ecosystems, and it refers to the ecosystems that biologists study. These ecosystems can include the local biotic communities with which, for example, indigenous peoples and farmers often have special bonds. But the concept of ecosystem can also apply to the whole of the Earth and the whole of the cosmos” (McDaniel, 2003). The question is whether ecology, as a science, can also adopt philosophical principles through which it helps to think again over the human idea of domination or supremacy over nature, also called anthropocentrism. As we can see, the latter is defined by the Club of Rome and by its members as outdated philosophy. Thus we also need the help of scientists – environmentalists. The eminent American biologist and ecologist E. P. Odum has defined ecology as “the study of the structure and function of nature” and has emphasized that humankind is a part of nature (Odum, 1985). The human civilization cannot exist separately from the natural world. In his paper “The Emergence of Ecology as a New Integrative Discipline” published in 1977, Odum pointed out that ecology, considered till the 1970s among the academicians to be a branch of biology, had become a major integrative discipline that links together the biological, physical and social sciences (Odum, 1985; Odum & Barrett, 2004). This connection, which Odum pointed out so many years ago, still exists. „Ecologists should know something: ideas matter. And we live in a world of contested ideas, and those contested ideas make themselves known in the real world in real ways. Many ecologists know this and argue strongly for the inclusion of philosophy and ethics in conservation and natural resource programs and decision making“ (Nelson, 2019). Here appears the idea of incorporating philosophical and ethical concepts into environmental programmes along with some research by environmental biologists. Justifying the value of biodiversity, of the environment, of preserving all life forms on the planet, of a development that does neither reproduce, nor tolerate inequalities, nor endanger the future, developing a culture of respect for nature is not only biologists – environmentalists’ task, but also philosophers and ethicists’ one. Whether this development is called sustainable or not is another issue. Our idea is to achieve a clearer picture of the modern ecological science as such one that is enriched with and uses philosophical methods to reach its conclusions. The content of the term “ecology” is currently too general when it comes to designating some scientific knowledge. For example, the concepts of “media ecology” and “media ecosystem” are widely used in the Bulgarian and international scientific

circles: "The media ecosystem contains educational, popular science and artistic works, as well as instrumental potential for participation in their production, which actually contributes to literacy or education, to the creative and critical stimulation of people" (Peycheva, 2019). The article also states that "the term "media ecology" was officially introduced by Neil Postman in 1968" (Ibid.). We will not go into clarifying the concepts here, but we just want to show the variety of uses of the terms "ecology" and "ecosystem" that are couched in almost every field of modern human knowledge, and this gives rise to a certain ambiguity that affects mostly the definition and the existence of ecology which originates as a biological science. „Ecology is the study of the relationships of organisms with other organisms and with their physical environment. Ecology also includes study of the structure and functions of natural systems“ (Kaza, 2003). Although ecology as a science studies biological systems at different integrative levels of organization: organisms, populations, communities, ecosystems (including the domesticated ones), landscapes, biomes, ecosphere (Odum & Barrett, 2004), the concept becomes universal when it comes to interacting in any kind of environment – cultural, social, media, even virtual. Because of its close link to these problems, the concept of ecology attained special popularity among the scientists in almost every field of studies. The latest report of the Club of Rome as well as the new trends in the development of ecology confirm this observation, which we have shared in another article (Mihailov & Sakelarieva, 2012).

The philosophy of ecology offers something else and even something more - without giving up the original task of ecological science, it should be enriched with a philosophical point of view toward values, norms, worldview and new ideas. Furthermore, this will help to develop the philosophy itself – as the authors of the report depicts it, it will become a "more future-oriented philosophy" (von Weizsäcker & Wijkman, 2018). The current Club of Rome report presents the following values that describe this philosophy, which along with that is ethics too:

- Human dignity
- Solidarity
- Ecological sustainability
- Justice
- Democracy (transparency and participation) (von Weizsäcker & Wijkman, 2018)

The idea of the authors of the report, in our opinion, is that a certain way of organizing the society, the market, social relations, from a certain worldview philosophy, leads to the relevant way of perception and attitude towards the environment in which we live and towards living organisms in it, to inanimate nature. Therefore, if the philosophical basics of our social reality change and update, and if ecology, as well as biology, are enriched with philosophical ideas, concepts,

values that are adequate to the modern world and help to realize man's closeness to nature, the science of ecology can find new fields for research and make politicians, economists, businessmen and others to take into account its conclusions. This, in our view, is a more reasonable approach as a scientific method than reducing and describing any interdependence to the idea of ecology or an ecosystem – e.g. “media ecosystem”, “ecology of democracy”, “ecology of thinking”, etc. This process also affects philosophy and ecology. Not every act of knowledge has to destroy the object to which it is directed – this is especially true of the sciences that deal with life and its preservation. „That cognitive act [the researcher’s interference with his object] found its limits if the interference destroyed some essential features of the object... Dissecting a rat means killing it; ironically, this is called life sciences...” (von Weizsäcker & Wijkman, 2018). The philosophy referring to this outdated concept is called by the authors of the report “reductionist philosophy” (Ibid.), and they propose to seek a new philosophical approach that has to overcome through the synthesis of biological knowledge and its philosophical understanding „the disconnect between humans and nature...perhaps the most fundamental problem faced by our species today” (Ibid.). The report of the Club of Rome focuses on a classic philosophical term – common good – which is the development of Aristotle's brilliant assumption that one is moral and, at the same time, free only when he or she subordinates his/her life to the pursuit of the common good for the human community one. They give an example with the concept of the Austrian holistic thinker and author, Christian Felber – ‘Economy for the Common Good’. „One philosophical branch of the ‘Economy for the Common Good’ goes back to Aristotle’s Nicomachean Ethics, which says that when we aim at happiness, we do so for its own sake, not because happiness helps us realize some other (including financial) end“ (Ibid.).

Accordingly, what are the new trends and possible ways of developing the philosophy of ecology as a scientific method? As Philip Lowe and his co-authors write „ecologists face strategic choices when incorporating human/social dimensions in their work – whether engagement with stakeholders, enlargement of ecology as a life science, or active exchange with the social sciences“ (Lowe *et al.*, 2009). A bit further ahead it is stated „Ecologists are not only concerned with ... organisms in nature, but also ... with ... man's influence on nature“ (Ibid.). The integration of the human and social dimensions of ecological and biological knowledge, its relation to the necessary interdependence between human actions and the consequences for nature, are part of this new scientific approach to the philosophical extension of the conclusions of biological sciences and ecology as a modern interdisciplinary science. In the already cited article by Philip Lowe *et al.*, the authors examine ecologists' attitudes toward broadening scientific environmental knowledge through interdisciplinary links to humanitarian, social, and worldview concepts. One of the conclusions of this study is given as

follows: „Almost all respondents (94%) agreed that there is 'a need for ecologists to take into account the human/social dimensions and context of their work', although from differing perspectives. Some saw people essentially as 'ecological agents'“ (Lowe *et al.*, 2009). Further on, the authors write in the final part of their research: „The study identifies a transition in ecological sub-disciplines from treating people as ecological agents to treating people as ecological objects/subjects. It is coming about from recognition of global environmental change and the ubiquity of human influences on nature“ (Ibid.). The need of changing the method of ecology as an interdisciplinary scientific subject about the life of the planet and its expansion by orienting it to the universal dimensions, norms and values that originate from the revealed natural dependencies is, in our opinion, a current trend in the development of ecology. This is also important necessity because of the need of the human civilization development not to endanger both the future of those who come after us and all the living and inanimate nature that is our common home.

This conclusion is broadly in line with the philosophy of the most recent Report of the Roman Club for the search and conformity with spiritual dominants in the development of modern humankind – political, social, scientific, economic. One of the purposes of this report is to influence its readers in order to „be willing to agree that a reductionist philosophy is not only inadequate for dealing with living systems but also for overcoming the tragedies of a destructive socio-economic development in the ‘full world’“ (von Weizsäcker & Wijkman, 2018). The concept of “full world” belongs to the authors of the report of the Club of Rome and it is described as „For pursuing the transformational agenda of *sustainable* development, a new mindset will be needed, which would favourably weigh the advantages of a sustainable world for future generations against high employment figures in our days. That, however, means a different political and civilizational philosophy for our era of the *full world*“. (Ibid.).

Conclusions

Based on the exposition, the following conclusions can be drawn.

1. The theoretical activity of the Club of Rome includes a wide range not only of scientific but also of philosophical developments – about the man's being in the world, about the values – moral, aesthetic, political, religious – of the new world and about the prospects for development afore human civilization.
2. The purpose is to transform people's consciousness, a “revolution of consciousness”, and the creation of a starting point of a new worldview. This is controversial, but quite possible.
3. There is a need of philosophical and ethical context of ecological facts, theories and predictions, a philosophy of ecology as a scientific method for research and making decisions in politics, education, economics and business.

4. The philosophical-ecological method is also adequate to the subject of ecology and the implications of its conclusions. Moreover, it is more appropriate than the vague use of the term ecology, used by analogy, to study any interrelations.

5. Ecology continues to evolve as an integrative, transdisciplinary science, taking ideas from social and humanitarian studies, thus turning its conclusions into significant models for the overall development of humankind.

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