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Coexistence between humanity and the environment: bioethics from Potter's perspective

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Abstract

This study analyzed two works that focus on the impact of human actions on the environment and evidence the negative effects of this impact in the long run. The bibliographic research was mainly based on Van Rensselaer Potter's works titled *Bioethics: bridge to the future* and *Global bioethics*, but also on articles focused on important aspects related to the author's views, enriching the discussion and reflection process. The results show that humanity should respect the environment in which it is inserted, understanding itself as integral (not dominant) part of the ecological relations, in agreement with the proposal of harmonic-functional coexistence.

Keywords: Ethic. Human ecology. Man-made disasters.

Resumo

Coexistência entre humanidade e ambiente: bioética na perspectiva de Potter

Este estudo analisou duas obras que tratam do impacto das ações humanas sobre o meio ambiente e evidenciam os efeitos negativos desse impacto a longo prazo. A pesquisa bibliográfica baseou-se principalmente nas obras de Van Rensselaer Potter denominadas *Bioética: ponte para o futuro* e *Bioética global*, mas também em artigos que abordam aspectos importantes relacionados à visão do autor, enriquecendo o processo de discussão e reflexão. Os resultados demonstram que a humanidade deve respeitar o ambiente em que está inserida, entendendo-se como parte integrante (e não dominante) das relações ecológicas, consoante à proposta de coexistência harmônica-funcional.

Palavras-chave: Ética. Ecologia humana. Desastres provocados pelo homem.

Resumen

Coexistencia entre humanidad y medioambiente: la bioética desde la perspectiva de Potter

Este estudio analizó dos obras que tratan el impacto de las acciones antrópicas sobre el medioambiente y que muestran los efectos negativos de este impacto a largo plazo. Se realizó una búsqueda bibliográfica, principalmente por las obras de Van Rensselaer Potter tituladas *Bioética: puente hacia el futuro* y *Bioética mundial*, además de artículos que abordan importantes aspectos relacionados con la visión del autor, para aportar al proceso de discusión y reflexión en este texto. Los resultados demuestran que la humanidad debe respetar el medioambiente en el cual está inserta, comprendiéndose como parte integral (y no dominante) de las relaciones ecológicas acorde con la propuesta de convivencia armónico-funcional.

Palabras clave: Ética. Ecología humana. Desastres provocados por el hombre.

Research

The authors declare no conflict of interest.

Born in 1911 in South Dakota, United States, Van Rensselaer Potter was a biologist, biochemist, professor, and researcher in the field of oncology, with an extensive scientific production, who received several titles of Doctor Honoris Causa [1]. From his academic experience, he proposed a new interdisciplinary concept, linking ethics and science to create a new perspective [2]. By relating biology and wisdom, Potter created the term "bioethics," defined on the cover of one of his works as *biology combined with diverse humanistic knowledge, forging a science that sets a system of medical and environmental priorities for acceptable survival* [3].

From the 18th century, with the advent of the Industrial Revolution, the human species increased its exploitation of natural resources to assert a socioeconomic model of power closely linked to consumption, which, by that time, seemed to have no long-term consequences [4]. However, capitalist activity established an unsustainable model of development that favors a small part of the world's population against the majority.

Thus, carelessness in the use of non-renewable natural resources has led to serious socio-environmental issues and consumerism is a major cause of socioeconomic difficulties [5]. In this regard, Potter warned about the need for a planetary bioethics, anticipating today's demands [3].

In 1972, the United Nations Educational, Scientific and Cultural Organization started promoting events dedicated to the topic. In this context, the first United Nations Conference on the Environment was held in Stockholm, Sweden, becoming a pioneering conference to focus on the cause, considered today a decisive milestone for the emergence of management policies. However, its status as a poorly researched topic points to the need to resume the discussion on the concept of sustainability.

In 1987, the World Commission on Environment and Development published the *Brundtland Report*. Seeking to lead all countries to reconcile economic growth with nature conservation, this document developed concepts such as "sustainable development" and "new world order," which marked the debates during ECO-92, a conference held in Rio de Janeiro in July 1992 [6]. Today, two opposing positions regarding sustainable development predominate: one that defends the continuation of the current capitalist model, in which nature is seen as an object of appropriation to ensure growth; and another that recognizes the fragility of this model and proposes planetary justice as a means to solve the ecological crisis [7].

Considering these issues, this study analyzed two of Potter's works that address the impact of human actions on the environment, highlighting its long-term negative effects.

Method

Bibliographical in nature, this study collected information to solve a problem based on theoretical references published in documents, without developing hypotheses [8]. As a stable source of information that can be reviewed several times, documentary information is considered extremely relevant in research [9].

Potter's *Bioethics: Bridge to the Future* and *Global Bioethics* were the works selected for analysis. Articles discussing important aspects related to this author's perspective were also included, enhancing the discussion and reflection process.

Results and Discussion

Scientist and writer C. P. Snow was possibly the first to observe a division between representatives of the literary and humanistic culture and adherents of the technical and scientific culture, showing the lack of connection and shared worldview. These groups had become so distant that any interaction was no longer possible, which would require an urgent rethinking of education systems [10,11]. This situation, defined by Snow as communication collapse, resulted in an impoverishment of the intellectuals' view, making them ignorant either in the sciences or in the humanities. According to Zanella [12], Snow argues that many humanities researchers are unfamiliar with science and many scientists have never read works by great thinkers.

Given this scenario, Potter sought to bridge the gap between biological sciences and humanities to balance cultural desires and physiological needs regarding public policies capable of producing the necessary wisdom to use knowledge for the good of society [13]. Here, the problem of "dangerous knowledge," defined as *knowledge that has*

accumulated faster than the wisdom to manage it[14], arises. Potter[1] notes that scientists themselves know that predicting the effects of their work is difficult and that technological advancement can turn the researcher into a "sorcerer's apprentice."

Aware of this problem, André Hellegers, in the late 1970s, consolidated the concept of bioethics as a more specific field of medicine. It encouraged ethical reflection within the area[15], which for a long time disregarded environmental issues[16]. When this definition of bioethics predominated, there also emerged the idea that systems of thought present a strong anthropocentric character[17], result of a culture in which nature is seen independent, self-regulated, and an infinite good. This culture represents an affirmation of the human being, which triggers ambition, power relations and domination among humans themselves[18].

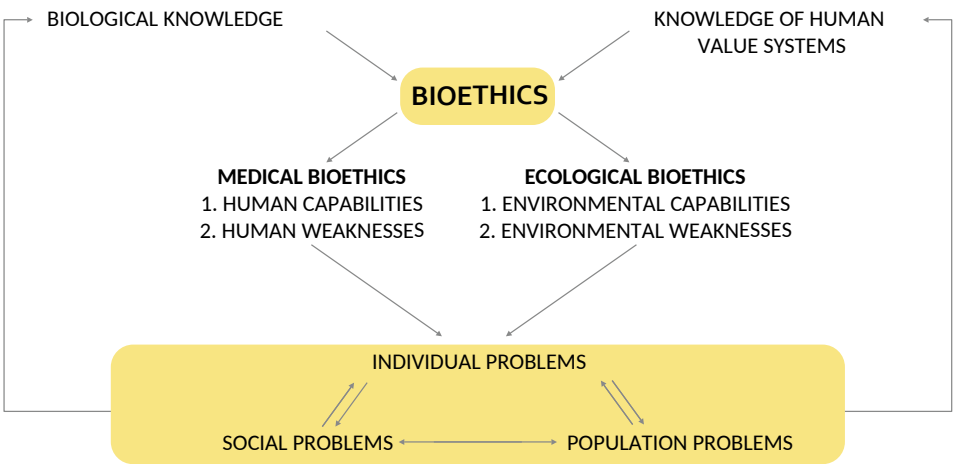
By classifying nature thus, the modern man gives himself a sort of "carte blanche," justifying his unbridled exploitation and domination by understanding nature as a being devoid of *dignity, teleology and moral value*[19]. Potter thus raises the following question: what will I leave to my children and their generation[1]?

The new generation seems not to have internalized this concern, since both common sense and some branches of science tend to consider natural disasters as casual or accidental events of the indomitable movements of the forces of nature. As if these episodes were merely a matter of chance.

Some authors, however, understand the planet as a living being endowed with intelligence and will. For them, any process is considered systemic, and all natural movements have a purpose. In this perspective, Earth could be compared to an organism constantly seeking to restore its balance and health[17].

The 1990s saw a gradual resumption of a broader approach, according to Potter's recommendations, against the then predominant "medical principlism"[20]. Bioethics would then focus on correlating several factors to solve problems collectively (Figure 1).

Figure 1. Bioethics as a system of morality based on two types of knowledge, and its fragmentation into two types of application



Source: adapted from Potter (1975)[21]

Potter states that even more threatening than "dangerous knowledge" is "dangerous ignorance,"[3] which would be the opposite of progress—the balance between using (knowledge) and knowing how to use (wisdom)[1]—, and which is related to several aspects that can be considered within the scientific- philosophical concept, according to which:

- No knowledge is absolute;
- Ignorance is the only limit for knowledge;
- The limits of knowledge are infinite;
- Ceasing new knowledge is impossible;
- No individual can master all existing knowledge;
- Knowledge should be disseminated as widely as possible;

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- The only solution to dangerous knowledge is more knowledge;
- Wisdom is moral knowledge, knowledge of how to use knowledge, and the most important knowledge of all.

According to Potter, wisdom can serve as a guide to action for the social good, combining ecological concern with a sense of moral responsibility. Such practice could be called the *science of survival*, which is a prerequisite for improving quality of life [1,3]. But this is not a limiting concept, for the *science of survival must be built on the science of biology, enlarged beyond the traditional boundaries to include the most essential elements of the social sciences and the humanities with emphasis on philosophy in the strict sense, meaning 'love of wisdom.' A science of survival must be more than science alone* [22]. Potter suggests, therefore, *the term 'bioethics' in order to emphasize the two most important ingredients in achieving the new wisdom that is so desperately needed: biological knowledge and human values* [22].

In reflection on the term "survival," Potter emphasizes that one must remember that it begins today, and that no one knows if they will be alive tomorrow. On the other hand, the chance of survival, for at least part of the human species, may extend into the future for as long as any life form that may exist on the planet. But what kind of survival [3]? For discussions within ecological bioethics, he suggests five categories based on modifiers (Chart 1).

Chart 1. Mere, precarious, idealistic, irresponsible, and acceptable survival

Mere survival	Implies a hunter-gatherer culture with food and shelter, but without libraries, written history, science, or hospitals.
Precarious survival	Can be represented by a few million Africans in inhuman conditions, many dying of starvation, suffering from diarrhea, respiratory diseases, and parasitic infections.
Idealistic survival	Occurs when an adequate number of people in a society have economic security, information, and ethical awareness to think about long-term survival and relief for existing precarious survival situations.
Irresponsible survival	Involves people with difficulty in recognizing obligations to the future, acting entirely according to their own interests and failing to contribute to the preservation of a healthy ecosystem.
Acceptable survival	Involves the need for reflection and action to preserve whatever is possible of the natural world in the interest of acceptable survival or an "acceptable society." As Brown states, *we have not inherited the land from our parents, we are borrowing it from our children* [18].

When alluding to Aldo Leopold's contribution, Potter highlights his ability to foresee the emergence of future situations of great complexity or with consequences such that extraordinary planning in the public interest would be necessary, for even if the specific dilemmas facing government authorities today could not be imagined, the dangers of destroying nature were already foreseeable [3].

Potter argues that *violence to the natural environment varies with the human population density* [23] and points to an inability to maintain a healthy environment for world civilization, so that many environments are transformed into unsuitable places for the reproduction and development of plants, animals, and even humans [3]. In light of Darwin, Potter emphasizes that the survival of a species is defined by its adaptation to its environment, raising the following question: will beings be able to survive in the changing environment they have set in motion [1]?

Potter believes that building a value system would be a reasonable way to initiate a minimum level of survival for the human species, under conditions that allow further evolution and avoid extinction [1]. He thus describes an ideal environment, including some cultural aspects, which *should provide basic needs that can*

be satisfied by effort: food, shelter, clothing, space, privacy, leisure, and education (both moral and intellectual) and *provide freedom from toxic chemicals, unnecessary trauma, and preventable disease*[24]. Traumas would include unintended exposure to harmful radiation.

According to Pegoraro, the United Nations recommends establishing a new logic of organization in the world to achieve this ideal environment, one in which markets are reoriented to serve people and not the opposite; investing in new models of ecologically sustainable development focused on the human person; focusing the international joining of forces not on the priorities of states but on human needs; shifting the focus of security from nations to people, from arms to development; and giving greater power to local authorities through decentralized growth of new standards of national and global administration[25].

In pointing out the failure of conservatism and liberalism, Potter advocates realism as a means of helping humanity to perceive "order" and "disorder" in both individual lives and societal problems. Moreover, he advocates organizing interdisciplinary efforts in groups to find new ways to improve the human condition. Potter also suggests that the results of new research be incorporated into the educational system as soon as possible, aiming not only at self-improvement, but at prolonging the survival of the human species in an acceptable form[1].

In the ecological context, Handlin states that *science has grown less and less inclined to replace old certainties with new ones. (...) It has been busy destroying the fixed universe of tradition and now made it clear that it offered no comforting alternative of his own*[26], remembering that despite all discussions and proposals, the same challenges of the past are still faced today.

In summary, Potter firmly states that if the human species is to preserve the dignity of individuals, survive and prosper, it must value the proposals and refine its techniques to achieve bioethical principles in areas for which the facts are insufficient[1].

Final considerations

This study discussed human civilization as an integral (not dominant) part of ecological relationships, according to proposals of a harmonic and functional coexistence. Potter, therefore, reinforced the need to consider and respect the environment, not being limited to everyday space, but encompassing the ecological context.

Moreover, reflecting on topics initially considered limited, such as the biomedical area, whose methodologies are usually not flexible, proved to be relevant. This perspective also enabled the understanding of a new dimension of the bioethical context, considering its important historical process of affirmation.

Finally, this study does not exhaust the possibilities of research on the topic, and more approaches on the relationship between bioethics and human–environment interactions are extremely relevant.

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Participation of the authors
Beatriz Gräff Schäffer read the two works written by Potter, highlighting important points to outline the line of reasoning of the work. Maiara Oliveira Jantsch analyzed articles, relating them to the topics in Potter's works. Letícia Westphalen Bento revised the manuscript.

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