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UPDATE

The ethics of caring for others and environmental bioethics

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Abstract

This article analyzes the unfolding of instrumental rationality of the *Aufklärung* (Enlightenment) regarding human action over the environment. The study highlights Hans Jonas' criticisms of Kant's *sapere aude* maxim, which would support a perspective of knowledge as unlimited power over nature. Hans Jonas, on the other hand, proposes a new ethic, which considers the demands of future generations as a criterion for the use of technologies that may affect nature. His proposal can be used to develop a new perspective on ethics as care for the Other and bioethics as care for life. As a methodological basis, we used the Frankfurtian criticism of instrumental reason.
Keywords: Bioethics. Environment. Nature. Social responsibility. Human rights.

Resumo

A ética do cuidado do outro e a bioética ambiental

Este artigo analisa os desdobramentos da instrumentalização do *Aufklärung* (Iluminismo) em relação ao agir humano sobre o meio ambiente. Destacam-se as críticas de Hans Jonas à máxima kantiana "*sapere aude*", a qual impulsionaria a perspectiva de saber como poder ilimitado sobre a natureza. Jonas propõe nova ética que considere a interpelação das gerações futuras como critério para utilizar tecnologias que afetem a natureza. Sua proposta abre nova perspectiva de ética como cuidado do Outro e de bioética como cuidado da vida. A pesquisa se baseou na concepção frankfurtiana de crítica à razão instrumental.
Palavras-chave: Bioética. Meio ambiente. Natureza. Responsabilidade social. Direitos humanos.

Resumen

La ética del cuidado del otro y la bioética ambiental

En este artículo se analizan los avances de la instrumentalización de la *Aufklärung* (Ilustración) en relación con la acción humana sobre el medio ambiente. Se destaca la crítica de Hans Jonas a la máxima kantiana "*sapere aude*", que impulsaría la perspectiva de conocer como un poder ilimitado sobre la naturaleza. Jonas propone una nueva ética, que considera el cuestionamiento de las generaciones futuras como un criterio para utilizar las tecnologías que afectan a la naturaleza. Su propuesta abre una nueva perspectiva de la ética como cuidado del Otro y de la bioética como cuidado de la vida. La investigación se basó en el concepto francés de la crítica de la razón instrumental.
Palabras clave: Bioética. Ambiente. Naturaleza. Responsabilidad social. Derechos humanos.

The authors declare no conflict of interest.

Technological development has brought to our civilization an unprecedented power: the possibility of affecting life on the planet to the point of making it unsustainable. This situation imposes the urgent need of coming up with principles for a new ethics. Traditionally, ethics had its point of reference in contemporary society, but the current reality makes us also responsible for future generations. This requires shifting certain aspects of traditional ethics – centered on the self, on the subject's pure autonomy, and on the Kantian *sapere aude* – in order to elaborate a perspective anchored in the Other.

The ethics of otherness (alterity) would overcome the notion of pure autonomy as the sole criterion for action and establish responsibility towards the Other as the ultimate distinction between good and evil. This perspective also requires elaborating the meaning and principles of an environmental bioethics in which nature is perceived as a form of alterity all life on the planet – including human life – relies upon, and not as an inert object to be exploited without limits. Nature questions us, demanding responsibility and care. Like future generations, nature can be regarded as the "Other."

The ethical crisis of *sapere aude* before the control of life

In the 1780s, Kant published the essay *Beantwortung der Frage: Was ist Aufklärung?* ("Answering the question: What is Enlightenment?") There, the philosopher reiterates that Enlightenment would represent the emancipation of human knowledge insofar as, up to that point, humanity had yet to overcome immaturity, thus remaining unable to establish sound judgments without relying on an external referential. According to Temple, for Kant what mankind was still lacking was not knowledge itself, but rather the *determination and courage to make use of one's reason without relying on the guidance of another*[1].

In the same text, Kant refers to the motto *sapere aude* ("dare to know"), treating it more as a marching order than as a leap into obscure terrain. According to Temple, Foucault points out the three elements of Kant's path towards emancipation: *free will, authority and the use of reason*[2]. These elements effectively exemplify the universal work of demolition undertaken by the *Aufklärung* (Enlightenment).

Through reason, will must free itself in order to fully exercise its autonomy, overcoming the laziness and even cowardice implied in one's unwillingness to decide for oneself, and in order to stop hiding behind external authorities, especially theological ones. However, Kant, in his provocative question "what is Enlightenment?," distinguishes two types of reason. The first, reason of private use, is passive, submits itself to the rules of society and acts in favor of the latter, guaranteeing its ultimate role of preserving it. On the other hand, the reason of public use has the freedom to express itself precisely because it does not fulfill a specific function in society, and may even criticize eventual mistakes committed by the State to which it is subjected to in the private use. But even this public use has limits: it must validate reason before the universal reason, that is, coherent application, in such a way that judgment becomes possible everywhere, without the need to rely on any externalities – in this case subjectivism, when it follows universal reason.

Kant's view of reason in itself as a path to emancipatory clarification, where it must be governed by the subject, inaugurates transcendental philosophy. In this sense, it was indeed a "Copernican revolution" in philosophy. The individual now promulgates the laws of knowledge, subjecting the object to its will instead of being subjected by it. The *Aufklärung*'s authority rises to new heights, not only enabling it to establish a new era in thought, but also to assert mankind's supremacy in the totality of the process of knowledge, finally demolishing the *Ancien Régime*.

Undoubtedly, the *Aufklärung* movement sought to use reason for mankind's emancipation, but the movement took several directions, since Kant did not realize the numerous models that rationality could assume, influenced by culture and social interests. In this sense, the original ideal of Kantian emancipation cannot but unravel into yet another form of instrumental rationality, in which reason itself is converted into an efficient mode of domination.

By following the *sapere aude* maxim, free from divine interference or other heteronomies, one should rely more on instrumental reason than on virtuous *techné*. Furthermore, natural resources were believed to be as infinite as the rational human capacity to assimilate them. This anthropocentric maxim was perfectly adequate to instrumentalize the *Aufklärung*, particularly in relation to the predatory exploitation of natural resources. The same logical view also justified self-regulating

markets by the division of labor with the argument that the market's natural rationality is intrinsic to the production system, capable, as an invisible hand, of self-regulating [3].

From an instrumentalized view of *Aufklärung*, the Kantian maxim *sapere aude* was more frequently reinterpreted not only as "dare to know," but also "dare to dominate". Bacon's [4] aphorism "knowledge itself is power" colonized modern rationality. This shift from knowledge to a form of power, mainly in the form of a useful benefit, generated the ethical matrix of narcissism as domination over the other, legitimizing individual interest as the moral engine underlying all actions. In such ethics, searching for self-benefit culminates in a kind of naturalized hedonism.

Thus, the Kantian ideal of emancipation by *sapere aude* was not achieved. On the contrary, from the second half of the twentieth century on, human thought became aware that the *Aufklärung* had created this type of instrumental and anthropocentric rationality, especially in the predatory exploitation of nature, seen as a neutral object with infinite resources. Criticizing this logic, the notion of "environmental crisis" emerged, regarded as the culmination of all other crises, including development-related and economic ones [5].

However, environmental pollution only becomes a concern when it crosses national borders and starts to hinder developmentalism itself. In addition to threatening humanity's survival on Earth, the environmental crisis brought up the need to rediscuss the concept of sovereignty. The old theory of reserved domain – founded on the now remote Treaty of Westphalia, which ended the Thirty Years' War between France and England (1618–1648) – could not solve this crisis. The treaty established that each state would be sovereign in its territory, but a problem such as transboundary pollution cannot be addressed on this basis [6].

The turning point in this change of thought was the 1941 Trail Smelter case (United States versus Canada). The court decided that no State had the *right to use or allow the use of its territory in such a way that air pollution would cause harm to another State's territory* [7]. This became a principle of international environmental law, as it imposed clear limits on sovereignty from the point of view of the Kantian maxim of reciprocity.

Another important milestone for international environmental law and its growing affinity with human rights – based on the 1948 *Universal Declaration of Human Rights* – was the United Nations' (UN) "Africanization" in the 1960s [6,8]. Having recently been decolonized, for the first time African countries could express themselves freely in the UN General Assembly, with equal voting rights in relation to other members, including several former colonizers.

Since then, several environmental protection systems have been created, in a constant dialogue with human rights. This culminated in the expansion of the concept of "human environment" [6] during the United Nations Conference on the Human Environment, held in Stockholm in June 1972 [9], in order to include the defense of future generations [10]. The process continued with the *Brundtland Report* [11], in 1987, and with the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992. In addition to sustainability, the Conference established the right to development as a global principle [12].

Thus, from the 1970s onwards, there is an integration between human rights and environmental protection: after all, countries had failed to solve environmental and social problems. This new thinking was shaped by the legitimate representation of social interests, generating what Morand-Deviller [13] defined as a "proximity norm," permeated with ethical meanings such as the planning for and commitment to sustainable development. The principles underlying such a norm are precaution, understood as the protection of nature whenever there is scientific uncertainty regarding its exploitation, and socioeconomic growth without natural resources depletion [14].

During this period, the environmental crisis was associated with successive and intense interventions in the environment, including the large application of poisons for pest control and the exponential increase in mankind's "ecological footprint," as reported in the documents produced by the Club of Rome, a non-governmental organization created in the 1960's [14], the Stockholm Convention [9], and then by *Brundtland Report* [11]. These documents clarify that quality of life is being jeopardized at an accelerated pace and that population growth has become an aggravating factor [15]. For the first time, humankind officially concluded that environmental disasters could irreversibly compromise not only biodiversity, but also human life itself.

Such a crisis was generated by the instrumental reason of autonomous will, which separates human beings from nature, based on the Kantian rationality [16]. The instrumentalization of the

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Aufklärung transformed the planet into an immense, utterly purposeless vacant lot, prepared for human domination with technical means believed to be in perpetual advancement [16].

The contrast between *arrogant anthropocentrism and the values of nature* [17] is a delicate subject for ethics. In other words, it is a question of human being as an end in itself (Kant) *versus* nature with values in itself. Thus, new ethical questions emerge: should nature be preserved simply because it has intrinsic values? Or must humanity necessarily exploit it? How can we preserve biodiversity while at the same time placing the human species at the center of everything, in a speciesist view, giving ourselves the right to exploit and enslave all non-humans?

This debate is extremely important, especially when considering the distorted ways in which the term "sustainable development" has been used. The concept became a new argument of instrumental rationality, aiming to combine, in the current capitalist model, the preservation of the environment and the unlimited growth of production and consumption, as if the demand for natural resources was infinite – which is almost a metaphysical joke [18].

Instrumental rationality generated an individualistic and hedonistic culture, with serious consequences for the entirety of life on planet Earth. The environmental crisis is one of the consequences of this utilitarian reason. However, the issue of ethical narcissism also stimulated the development of environmental bioethics. Among the various thinkers who confronted the "cursed" heritage of anthropocentrism, Hans Jonas [19,20] and his proposal of an ethics applied to the environment stand out.

Hans Jonas and the "dare to be conscious"

As we have seen, in the 1970s the defense of human rights was combined with the defense of the environment, criticizing the perception of Earth as a large zoo or open-air museum for the purpose of instrumental exploration. This growing "museification" of the world and nature [21] had its counterpoint in a concern for the transgenerationality of human and environmental rights, so as to allow future generations to have access to an ecologically balanced environment.

The Other, the future generations have some ethical issues for us [22]. We are the first generation able to irreversibly harm life on planet Earth, and this power brings new responsibility. The interpellation of the Other is present in the concept of environmental ethics, which deconstructs the individualistic narcissism inherent in the instrumental rationality of the *Aufklärung*.

Besides the environmental ethics movement, the 1970s also witnessed new discussions on the rights of the ill, who were regarded as immature, in the Kantian sense. The patient was considered "alienated" and, as such, had to be placed entirely at the doctor's mercy. The doctor, on the other hand, was seen as an omniscient figure, with absolute domain over the art of medicine, and this view generated the most atrocious abuses and experiments, involving socially vulnerable subjects such as the poor, blacks or people with mental disabilities.

According to Junges [23], amid the twentieth century's wave of civil-rights movements in the United States, a Charter proclaiming the rights of the sick emerged as a reaction to this situation. The document introduced "informed consent" in the clinical techniques, so that the patient would not remain totally oblivious to the treatment. The period also witnessed the emergence of bioethics, a branch of moral anthropology dedicated to hitherto invisible moral challenges [23].

Environmental ethics, which always had a biocentric character, evolved together with bioethics [24], giving rise to environmental bioethics, and broadening the discussion on anthropocentrism and biocentrism to establish links between them [25]. The *Universal Declaration on Bioethics and Human Rights* (UDBHR), promulgated in 2005 by Unesco [26], is another important milestone for this expanded view of anthropocentrism, comparable to the Stockholm Convention for the environment and the defense of human rights.

Since Stockholm, environmentalism is no longer seen as the work of preserving a large terrestrial zoo. The importance of the environment within the human existential project was finally understood. With the UDBHR, something similar happened: our outlook turned away from the hospital bed and entered a wider universe, even encompassing ontological issues.

In his ethical reading of the environmental problem, Hans Jonas [19] inaugurated the analysis of transgenerationality, questioning the instrumentalization of the *Aufklärung* for the unlimited exploration of natural resources. The author proposes an ethics of responsibility towards

future generations, showing that the thought inherited from instrumental narcissism fails to obtain a critical comprehension of the destruction threatening the planet.

Realizing modernity was in an ethical vacuum, Jonas drew attention to our responsibility in relation to new technologies. If Kant's maxim was *sapere aude* (dare to know), it could be said that Jonas' was "dare to be conscious": humanity is invited to assume responsibility for its actions in the face of future generations. Thus, one of the author's guiding questions is: what are the collateral effects of new technologies? In *The Imperative of Responsibility: in Search of an Ethics for the Technological Age* [19], he broadens the concept of dignity, overcoming the Kantian motto of the human being as an end in itself.

In 1966, he publishes *The Phenomenon of Life: Toward a Philosophical Biology* [20], dealing with the limitations and precariousness of life in its biological sense. Jonas criticizes the exaggerations of the period, especially idealism, which he characterizes as "unrealistic," and its other extreme, strict materialism. The author addresses the tension between philosophical perspectives that deem the organic as the matter and the spirit as an idea – for modern humans, the spirit remains part of the organic, while for the civilized people of antiquity the organic preceded the spirit. For modernity, life is an exception, and inert matter is regarded as "pure," unchangeable, and this dualistic view permeates modern history. However, only through mathematics, a science based on universal parameters and categories, can "pure matter" be known without being contaminated by the "hylozoist" views of the ancients [27].

Dies irae, dies illa ("Day of wrath and doom impending"): that was what Jonas wanted to emphasize in his work. The cycle is closed. This dualism between being and non-being gives excessive power to a mankind that controls its own technology but despises ethical principles beyond its *cogito*. However, once it is finally able to dissipate this dualism, modernity falls into a trap of its own making, giving rise to idealism and materialism as ontological fields that cannot intermingle. This prevents science from a reconciliation, in a contradictory monism that sees life *in an unfeeling world of matter which in death triumphs over it* [28]. In this sense, according to Jonas, spiritual sciences and natural sciences were created to separate idealism and materialism.

Jonas criticizes this thought [20] by addressing the inseparability between body and soul and thus between sensation and will, external reality and inner vitality etc. This phase, in which the author outlines an ontological analysis of life, prepared his later proposals with *The Imperative of Responsibility* [19], where he criticizes the traditional model of ethics, since it is concerned only with human beings.

Thus, Jonas' ethics seeks an integration of extra-human concerns [19], reformulating the Kantian maxim to also encompass future generations, that is, acting to preserve life on Earth – and everything that depends on the planet – in the present an in the future. The Kantian imperative "act only according to that maxim whereby you can at the same time will that it should become a universal law" is questioned by Jonas because it is not an expression of moral reflection, but rather a logical reflection, a logic of the power or impotence of human will. According to the author, *there is no self-contradiction in the thought that humanity would once come to an end, therefore also none in the thought that the happiness of present and proximate generations would be bought with the unhappiness or even nonexistence of later ones – as little as, after all, in the inverse thought that the existence or happiness of later generations would be bought with the unhappiness or even partial extinction of present ones* [29].

In other words: we must act without destroying everything, without endangering mankind and the possibility of life. Jonas extends the anthropocentric Kantian ethics, so human beings are no longer an end in themselves, in order to incorporate the commitment with the environment and future generations.

Concerning the responsibility of human behavior, Jonas criticizes the notion of science as a database without any moral substrate, or without commitment with values or consequences of actions. Such attitude turns scientists into machines of discovery and into irresponsible dreamers who only realizes the damage when a "marvel" such as nuclear fission becomes decisive for building, for example, the atomic bomb that devastated Hiroshima [19].

Care for others and environmental bioethics

In the preface to *The Imperative of Responsibility*, Jonas [19] refers to the myth of Prometheus to discuss the unlimited use of technology, without ethical restraint, as a tool in the search for happiness. Prometheus symbolizes

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mankind of instrumental rationality, for whom knowledge becomes supreme power over nature. The limits of knowledge are the possibilities of power, axiology that establishes a new absolutist relativism of power over action.

Within this relativism, one needs some kind of moral compass. It is necessary to act responsibly in the face of imminent evil to understand what it is to act well, projecting the future and what ought to be. Jonas points out the dangers that await us if our contemporary relationship with nature remains unaltered, proposing a "heuristics of fear" [30]. In this perspective, ethics *must abandon the classic model of utopia and the tendency to focus on the moral quality of the momentary act instead of unveiling its consequences for the unknown future* [31].

To remain in the present, without worrying about consequences, technology created an "implicit utopianism". Once linked to the imaginary of mythologies, this utopianism now leads humanity to believe that technology will solve all problems. Thus, the future becomes uncertain not only due to the increasing scale of consumption, but also due to the unlimited rationality of human idealism:

Technological power has turned what used and ought to be tentative, perhaps enlightening plays of speculative reason into competing blueprints for projects (…) *In consequence of the inevitably "utopian" scale of modern technology, the salutary gap between every day and ultimate issues, between occasions for common prudence and occasions for illuminated wisdom, is steadily closing* [32].

Jonas is concerned with the technological future, not exactly with eternity. In this point, he clearly distances himself from Plato. Acting is based on the human condition itself, its nature, the nature of things and on the relationship between them. This enables us to define whether something is good for humanity or not [19]. However, Jonas reminds us that these concepts do not contemplate the collateral effects of technology: albeit the scope of human action has been broadened by its adaptation to modern technique, old ethical parameters are no longer safe [16].

This creates an impasse: science recognizes no limits, while ethics, which should organize it, cannot fulfill its role. Regarding this issue, Jonas mentions the chorus in Sophocles' *Antigone* that praises mankind's feats, its dominion over nature and its ability to do anything, as long as the laws of the land – the laws of causality – and of divine justice are respected. If humans break these laws, however, they must be punished with exile. According to Jonas, this excerpt from Sophocles is one of the first appearances of the archetypal sense of power and *poiesis*, a commentary on technological instruments used to dominate nature [19].

The excerpt also expresses a belief in the unlimited resources of nature, which leads to the conclusion that humanity would never change its course, even if it wanted to do so. In other words, nature would be inexhaustible due to its enormous ability to self-regenerate. Jonas explains that all human rationality has developed within the confines of the *polis*; outside the city, nature was believed to bear its own logic, in a direct causal relationship, governed by divine mystery, which humanity was powerless to change. Having its own laws, nature should be dominated by human intelligence and inventiveness; ethics, a thing of cities, would not be necessary.

Therefore, in the city *cleverness must be wedded to morality, for this is the soul of its being* [33]. Such a separation between inexhaustible nature – which exists outside the city – and human ethics is one of the main characteristics of self-centered modern ethics, according to which manipulating the environment is a human need. This domination is only concerned with the present, the now. Impatient, it has no respect for nature, since it is not necessary to understand the human thought [19].

Separated from nature and linked only to human reason, ethics would depend on rationality. Kant argues that freedom creates responsibility. Jonas proposes that, within the heuristics of fear, limits should be placed on freedom to avoid threats to society. In this sense, collective interests may be superseded in order to prevent tragedies of mass extinction.

Concerned about future generations, Jonas is a neo-Kantian whose goal is to widen the framework of anthropocentrism to encompass the environment (the natural physical environment and its transgenerationality), by criticizing modern society and favoring the collective interest. For him, individual ethical action is entirely different from collective ethical action. Through the latter, humanity discovers that nature is vulnerable; based on this consciousness, Jonas shows that, albeit the natural environment has its own laws, they are subject to human interference, a fact that has become especially evident after the Industrial Revolution and two World Wars.

However, two important aspects of this relationship must be considered. Firstly, while it is true that humanity's destiny on planet Earth depends on the preservation of nature, this is still an anthropocentric perspective. Secondly, human interference in nature is cumulative: even if the effects of previous environmental and human disasters are reversed, new ones will emerge, without the possibility of starting again. This jeopardizes the development of our conscientious will. Nature is unforgiven, wrongs are cumulative, and moral forgiveness does not solve ethical transgression. Harms against nature are situated in another domain, different from that of forgiveness. Hence, responsibility for technologies that affect nature differs from moral responsibility for another individual.

According to Jonas [19], to understand what has been happening to nature, it is necessary to abandon anthropocentrism and narcissistic selfishness, recognizing our ignorance about the many extra-human phenomena on which our very lives depend. Conscientious action implies recognizing that we are not entirely sure about our commitment to nature.

This new model of acting must go beyond human behavior. There are other elements underlying human life on Earth, and that must be considered beyond instrumental purposes. Humanity, with its anthropocentric scientific perspective, has never assumed responsibility for nature, but is time to do so, as *there is a vastly different concept of responsibility that concerns not the* ex post facto *account of what has been done, but the forward determination of what is to be done* [34].

If humanity is to survive, responsibility must be directed towards the group, towards the collective, and at the same time towards the future. Thus, the relationship between mankind and nature must assume a prospective character, as *the indefinite future, rather than the contemporary context of the action, constitutes the relevant horizon of responsibility* [35]. New types of action require new ethical standards, which can act as a predictive responsibility compatible with the human domain; after all, everything humanity transforms ends up being managed by it or identified with the human condition [19].

Transgenerational responsibility leads to ethical questioning. Thus, according to Jonas, *before the question of what force* [will represent the future in the present]*, comes the question of what insight or value-knowledge will represent the future in the present* [36]. Technological power created an entirely new world, in which common sense intermingles with scientific investigation as scientific debates are popularized. Therefore, utopia became not a poetic project, to be sung in a chorus as the Greeks did, but the very real possibility of a bleak future. As such, one must be humble enough to recognize the multiple possibilities ahead of technological power: only then can its purposes be assimilated.

Reason has replaced fear, which in turn replaced virtue and wisdom. And it is through fear that modern systems of protection against technology are built, since *it is moot whether, without restoring the category of the sacred, the category most thoroughly destroyed by the scientific enlightenment, we can have an ethics able to cope with the extreme powers which we possess today and constantly increase and are almost compelled to wield* [37]. From here, Jonas describes his ethics of fear, consistently focused on the collective and based on the application of political philosophy, that is, of State justice. Thus, the universal apocalyptic potential of modernity's harms leads to a collective prognosis in which responsible action is crucial to avoid mankind's annihilation.

For him, four precepts justify ethical behavior: 1) collectivity is the reason for the existence of a rule of responsibility in political philosophy, that is, a rule determining the application of justice; 2) humanity is not entitled to suicide; 3) the great technological risks show the pride and excessive comfort of current human existence, and therefore there is no need to generate more conditions to preserve humanity; and 4) human existence must be safe from experiences that put it at risk or in a state of vulnerability [19]. As we have seen, Jonas seeks to integrate extra-human elements into traditional Kantian ethics, overcoming the instrumental rationality responsible for converting the *sapere aude* maxim into Bacon's "knowledge itself is power".

Final considerations

In many ways, current science and technology and their relationship to humanity and nature date back to the *Aufklärung*. In this model, ethics is centered on the individual; the Other is secondary to the Self, and nature is an object of instrumentalization. In individualistic culture, otherness is perceived as something secondary.

The serious social, political and ecological crises humanity has been facing since the second half of the twentieth century have uncovered the

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epistemic and ethical weaknesses in the edifice of modernity as a whole, and of the *Aufklärung* in particular. The current model of production and consumption – which explores nature as an external, supposedly inexhaustible object – is compounded by the power of new technologies to interfere in nature and in life. For the first time in human history, our generation is capable of irreversibly impacting life on Earth. Thus, it is urgent to think of new epistemic matrices for science, new models of production and consumption and new ethical references that contemplate our responsibility towards life on planet Earth as a whole.

In the current crisis of instrumental rationality, Hans Jonas' epistemology, conscious that mass extinction is a real possibility, resurges to remind us that a new ethics based on responsibility towards future generations must be established. Thus, Jonas replaces the Enlightenment motto *sapere aude* with a new, non-instrumental proposition: "dare to be conscious".

One must step out of the shadow of instrumental reason to understand that ethics cannot be limited to the interests of present generations. We cannot act only in the name of our immediate interests. Otherness, in the form of future generations, ethically challenges us. We are responsible for them.

An ethics of responsibility for future generations is inseparable from a new conception of care for the Other. To be open to otherness is an essential aspect of human relations; we are constituted by our relationship with Others, and this relationship is what makes the Self possible. Care is not a moral concession of the self, but rather an ethical response to a radical challenge. In this perspective, nature itself is integrated into otherness, ceasing to be an inert object to become an Other, different from human beings, but on which we depend to exist. Thus, bioethics must overcome the casuistic understanding it has developed so far, moving on to understand itself as an ethics of caring for life and for the other.

References

1. Temple GC. Aufklärung e a crítica kantiana no pensamento de Foucault. Cad Ética Filos Polít [Internet]. 2009 [acesso 9 mar 2019];(14):225-46. p. 227. Disponível: https://bit.ly/39wEnAN
2. Temple GC. Op. cit. p. 228.
3. Smith A. A mão invisível. São Paulo: Penguin; 2013. Edição Kindle.
4. Bacon F. Novum organum. São Paulo: Nova Cultural; 1999.
5. Le Prestre P. Ecopolítica internacional. 2ª ed. São Paulo: Senac; 2005.
6. Soares GFS. Direito internacional do meio ambiente: emergência, obrigações e responsabilidades. São Paulo: Atlas; 2001.
7. Soares GFS. Op. cit. p. 44.
8. Mazzuoli VO. Coletânea de direito internacional: Constituição Federal. 10ª ed. São Paulo: Editora Revista dos Tribunais; 2012.
9. United Nations. Report of the United Nations Conference on the Human Environment [Internet]. Estocolmo: ONU; 1972 [acesso 9 mar 2019]. Disponível: https://bit.ly/324Js00
10. Brasil. Decreto nº 5.472, de 20 de junho de 2005. Promulga o texto da Convenção de Estocolmo sobre Poluentes Orgânicos Persistentes, adotada, naquela cidade, em 22 de maio de 2001. Diário Oficial da União [Internet]. Brasília, 21 jun 2005 [acesso 9 mar 2019]. Disponível: https://bit.ly/3g4Luml
11. World Commission on Environment and Development. Our common future. Nova York: Oxford University Press; 2009.
12. Trindade AAC. Direitos humanos e meio ambiente: paralelo dos sistemas de proteção internacional. Porto Alegre: Fabris; 1993.
13. Morand-Deviller J. Os territórios do direito: reflexões sobre a generalidade e a impessoalidade da regra de direito. In: Marques CL, Medauar O, Silva ST, coordenadores. O novo direito administrativo, ambiental e urbanístico: estudos em homenagem a Jaqueline Morand-Deviller. São Paulo: Editora Revista dos Tribunais; 2010. p. 62-9.
14. Shelton DL. Developing substantive environmental rights. J Hum Rights Environ [Internet]. 2010 [acesso 27 jul 2020];1(1):89-120. Disponível: https://bit.ly/2BE6YYu
15. Leite JRM, Ayala PA. Dano ambiental: do individual ao coletivo: extrapatrimonial. 3ª ed. São Paulo: Editora Revista dos Tribunais; 2010. p. 23.
16. Lucht M. Does Kant have anything to teach us about environmental ethics? Am J Econ Sociol [Internet]. 2007 [acesso 3 mar 2019];66(1):127-50. DOI: 10.2307/27739624
17. Ferry L. A nova ordem ecológica: a árvore, o animal e o homem. Rio de Janeiro: Difel; 2009. p. 26.
18. Rolston H III. Critical issues in future environmental ethics. Ethics Environ [Internet]. 2007 [acesso 9 mar 2019];12(2):139-42. Disponível: https://bit.ly/3eYZJba
19. Jonas H. O princípio responsabilidade: ensaio de uma ética para a civilização tecnológica. Rio de Janeiro: Contraponto; 2006.

20. Jonas H. O princípio vida: fundamentos para uma biologia filosófica. Petrópolis: Vozes; 2004.
21. Agamben G. Profanações. São Paulo: Boitempo; 2007.
22. Levinas E. Totalité et infini: essai sur l'extériorité. Paris: Kluwer Academic; 2000.
23. Junges JR. Bioética: perspectivas e desafios. São Leopoldo: Editora Unisinos; 1999.
24. Beauchamp TL. Principlism in bioethics. In: Bermúdez PS, Seoane AJ, editores. Bioethical decision making and argumentation. Coruña: Springer; 2016. p. 1-16.
25. Fischer ML, Cunha T, Renk V, Sganzerla A, Santos JZ. Da ética ambiental à bioética ambiental: antecedentes, trajetórias e perspectivas. Hist Ciênc Saúde Manguinhos [Internet]. 2017 [acesso 9 mar 2019];24(2):391-409. DOI: 10.1590/s0104-59702017000200005
26. Organização das Nações Unidas para a Educação, a Ciência e a Cultura. Declaração universal sobre bioética e direitos humanos [Internet]. Paris: Unesco; 2006 [acesso 9 mar 2019]. Disponível: https://bit.ly/2HznRCP
27. Comte-Sponville A, Ferry L. A sabedoria dos modernos: dez questões para o nosso tempo. São Paulo: Martins Fontes; 1999.
28. Jonas H. Op. cit. 2004. p. 26.
29. Jonas H. Op. cit. 2006. p. 47.
30. Zirbel I. Pensando uma ética aplicável ao campo da técnica: Hans Jonas e a ética da responsabilidade [Internet]. 2005 [acesso 24 set 2019]. Disponível: https://bit.ly/2X12fHw
31. Jonas H. Op. cit. 2006. p. 22.
32. Jonas H. Op. cit. 2006. p. 63.
33. Jonas H. Op. cit. 2006. p. 34.
34. Jonas H. Op. cit. 2006. p. 167.
35. Jonas H. Op. cit. 2006. p. 44.
36. Jonas H. Op. cit. 2006. p. 64.
37. Jonas H. Op. cit. 2006. p. 65.

Participation of the authors

Both authors contributed to thematic delimitation and argument structuring, besides developing the critical study on Kant and Jonas, systematizing its conclusions, carrying out a critical review of the content and approving the final version. Castor Bartolomé Ruiz contributed to the philosophical analysis of concepts, and Joelson de Campos Maciel developed arguments about the legal dimension of environmental bioethics.

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