The conception of sustainable development: from environmentalism to ethics and philosophy of science

Introduction

The fate of the conception of sustainable development of modern humanity is a rather bizarre one. Gro Brundtland formulated its original classic form in 1986 (WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, 1987). It has been refined many times at UN summits. In 2015, the sustainable development plan became an official UN document “Transforming Our World: the 2030 Agenda for Sustainable Development” (UNITED NATIONS, 2015). Its central feature is the characteristic of a prosperous human community. In essence, it is a process of steadily maximizing the prosperity of all people on our planet.

We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature (UNITED NATIONS, 2015).

The main problem with the 2030 Agenda was that it did not fully meet the criteria for scientific theories. Therefore, as soon as the question of understanding the content of the plan was raised, many problematic aspects became known. Not surprisingly, therefore, the implementation of the plan has always encountered insurmountable problems. The authors of the 2030 Agenda insisted on ensuring people’s prosperity, but in reality, for too many people it was little more than a dreaming exercise. They sought the personal good, but not the prosperity of all the people of the planet. This meant that they deviated far from the content of ethics.

The unsatisfactory state of the 2030 Agenda prompted a flood of suggestions for improvement. Their authors did not use a unified research strategy. In the vast majority of cases, they did not mention it at all. Nevertheless, the critics of the 2030 Agenda, all together, have contributed to a better understanding of it. This analyzes also needs clarification. Having analyzed the relevant academic literature, we conclude that it presents the following research trends (T).

T1: First, some researchers have looked at the refinement of the sustainable development plan at the UN summits.

T2: Secondly, other researchers have clarified the content of the notion of sustainable development.

T3: Thirdly, over the years an increasing number of researchers have focused on the relationship between the conception of sustainable development and ethics.

T4: Fourthly, the authors of this article are pursuing a strategy whose foundation is the philosophy of science.
METHODOLOGY

Our immediate task is to critically analyze the above four trends. This requires a solid methodological basis. This is the theory of conceptual transduction, which acts as an expression of the main achievements of modern philosophy of science (KANKE, 2021). It pays tribute to both intratheoretical and intertheoretical methods. Intratheoretical methods are methods of prediction (deduction), experiment (adduction), data processing (induction) and updating initial theories (abduction). Intertheoretical methods characterize the correlation between the new theory and the previous one. Their difference from each other can be minor, substantial and excessive. In the first case, researchers use the identification method, assuming that the new theory corroborates the old one. Secondly, they interpret the content of the outdated theory based on the new theory. In the third case, researchers use a symbolization method (the outdated theory is a symbol of the new concept). Modelling methods, e.g. mathematical modelling, ensure assimilation of the achievements of the auxiliary sciences. Intertheoretical relations cover the whole field of science. Knowledge must be complete.

Our critical method is that we, from the standpoint of the theory of conceptual transduction, determine the strengths and weaknesses of each trend and try to present its most developed version. We believe that the voluntary or involuntary suppression of the successes of the philosophy of science in our time is unacceptable. The persistence of those authors, who, despite a series of failures, continue to look for an alternative to science in the 21st century, is surprising.

RESULTS

T1: Improving the conception of sustainable development at UN summits

Many researchers consider the improvement of the conception of sustainable development mainly based on the materials of the UN summits. Indicative in this sense is the article by Tomislav Klarin (2018), who uses materials from two dozen summits. The decisive idea is that instead of a one-sided ecological approach, the concept of the unity of three dimensions or pillars of sustainable development is proclaimed.

The essence of the concept of sustainable development derives from the Triple bottom line concept, which implies the balance between three pillars of sustainability - environmental sustainability focused on maintaining the quality of the environment which is necessary for conducting the economic activities and quality of life of people, social sustainability which strives to ensure human rights and equality, preservation of cultural identity, respect for cultural diversity, race and religion, and economic sustainability necessary to maintain the natural, social and human capital required for income and living standards. (KLARIN, 2018, p. 68).

The theory of three dimensions of the conception of sustainable development is highly questionable. The fact is that these measurements do not agree with the taxa of knowledge accepted in science, which are the branches of science, their disciplines and subdisciplines, which consist of basic theories. In pursuit of scientific clarity, one should focus on the taxa of scientific knowledge. Otherwise, confusion grows. In the analyzed case, it is in the characteristics of environmental and especially social sustainability. It remains unclear which branches of knowledge are critical for the supporters of the conception of sustainable development in the context of environmental and social stability. Let us take the liberty of affirming that all branches of scientific knowledge are of the greatest importance for the future of humankind.

We do not know the exact number of branches of science. For definiteness, we will assume that there are only 22 of them. Of course, this should take into account the trend of knowledge set by ecology. We are talking about systemic formations, the subjects of which are natural formations on an equal basis with people, including various kinds of organisms. People are unable to avoid unity with other phenomena. They must realize this unity through interdisciplinary connections and reduce them to intertheoretical relations. We mean that not branches of science, not disciplines and subdisciplines, but the basic theories, of which there are many thousands represent the fundamental level of scientific knowledge. The number of
dimensions of the conception of sustainable development is not 3, not 22, but tens and even hundreds of thousands (their exact number is unknown). It is permissible to assume that this number is equal to 22, but in this case, each of the branches of science, as a rule, consists of a three-digit number of basic theories.

The main problem of T1 trend supporters is that they do not bother to present their theories scientifically. Otherwise, one should at least list the principles of theories with an indication of their belonging to certain branches of science. The indicated authors also do not take into account another circumstance. There is a division of labour in modern science. Along with the basic sciences, there are auxiliary (formal) ones, which contribute to the development of the basic sciences. Examples of auxiliary sciences are, for example, mathematics, computer science, ethics and philosophy of science. If researchers do not look to the advances in auxiliary sciences, then the true nature of basic science remains in a fog. In our opinion, this is exactly the situation in the case of the conception of sustainable development.

T2: Clarification of the notion of sustainable development

Quite often, researchers focus their attention primarily on the notion of sustainable development. Tom Kuhlman and John Farrington, criticizing the three pillars concept, concluded, “[a]lthough we use up natural resources at the expense of future generations, we also generate capital (including knowledge) which raises future well-being. A major question is to what extent one compensates for the other”. (KUHLMAN, FARRINGTON, 2010, p. 3436).

Donald Hector (2014, p. 19) distinguishes between sustainability and sustainable development. Sustainability expresses environmental-preservationist positions, and sustainable development the prudential conservationist. The task is consistently to combine these two positions in the interests of developing the integral coexistence of people and nature. Hector does not explain exactly how to achieve their alignment.

Other authors seek to concretize the notion of sustainable development. Anna Salomaa and Sirkku Juhola insist on the need to assess sustainability transformations. Their conclusion sounds somewhat pessimistic.

It appears that, despite the increasing rhetoric for multi-sectoral sustainability transformations, this concept has not yet sparked wide efforts by academics to assess them empirically. These findings demonstrate the need to advance the debate regarding the methods for capturing these complex social phenomena. (SALOMAA, JUHOLA, 2020, p. 1).

The group of authors notes that scientists have achieved some success in measuring the indicators of sustainability, especially in relation to some processes and products (FINKBEINER et al., 2010). Below we will give a more comprehensive assessment of the efforts of the T2 proponents. Their frequent reference to the achievements of sciences deserves approval, but not the desire to determine the meaning of the notion of sustainable development, regardless of the corresponding theory as a whole.

T3: Finding the ethical essence of the conception of sustainable development

The fate of the conception of sustainable development closely relates to ethics. Many researchers believe that this state of affairs is quite natural. Liene Amantova-Salmane expresses precisely this point of view. “All forms of sustainability in society depend on the human conduct. Therefore, the ethical aspects of reality are of larger significance in ensuring sustainability. Ethical sustainability needs to be realized in order to get sustainable political and social systems and processes”. (AMANTOVA-SALMANE, 2017, p. 11).

A more cautious position is to recognize the beneficial effects of ethics on sustainable development under certain conditions, not always (AHMAD, RAMAYAH, 2012). The position of Kurian Priya and Robert Bartlett is quite original. They believe that not only the conception of sustainable development needs ethics and justice, on the other hand, but ethics and justice themselves also need the concept of sustainable development (PRIYA, BARTLETT, 2010).
Our position is that ethics should be considered when one wants to clarify the content of the conception of sustainable development. However, in this case, one should be as careful as possible with the definition of its nature.

Why cannot the concept of sustainable development do without ethics? Various arguments have been put forward on this score. Mohammad Salamat believes that the economy is dominated by a self-interest attitude that blocks beneficial social and environmental transformations of a collective nature. Ethics and morality are an antidote to individualism (SALAMAT, 2016).

Bert de Vries believes that the 2030 Agenda expresses primarily the scientific, planning and emancipatory attitudes of Sustainable Development Goals (SDGs). “This worldview is no longer evident and dominant, and it is time to systematically explore complementing worldviews. Explicit use of worldviews, as sets of values and beliefs, and ethics enriches the interpretation and implementation of the SDGs”. (DE VRIES, 2019, p. 1). In this regard, de Vries is optimistic for such traditional ethical systems as utilitarianism, the ethics of duty and virtue.

Helen Kopnina is quite critical of the 2030 Agenda, believing that it presents anthropocentric ethics, which does not correspond to the current historical situation. According to her observations, a modern Western man demonstrates his interest in ethics much more definition than his historical predecessors do (KOPNINA, 2018). She tends to see this fact as an indication of the relevance of an ethical approach.

Martina Keitsch (2018) believes that there is a need to complement environmental ethics, including its two branches, anthropocentrism and biocentrism, with the social values of responsibility, openness and communication. As you can see, enthusiasm in the search for the ethical content of the conception of sustainable development is not accompanied by clear methodological guidelines. Below we turn to their characteristics.

**T1: The conception of sustainable development in the light of the philosophy of science**

First, let us give answers to four famous questions of Kant.

(1) What can I know? - Most advanced theories and therefore best practices.

(2) What ought I to do? - Develop the best theories and practices.

(3) What may I hope for? - That I will be able to overcome the difficulties that arise.

(4) What is man? - A creature capable of steady theoretical and practical progress.

It is reasonable to continue these science-oriented questions, correlating them with the conception of sustainable development.

(5) What to do when considering a problem theory? - First of all, to present it in a scientific form, i.e. point out the principles, laws and variables of the theory. Theories must be part of disciplines and therefore subdisciplines and branches of science.

(5a) Was this done in the case of the concept of sustainable development? - No, it was not. The preamble of the 2030 Agenda articulates good intentions for people, the planet, human prosperity, peace on earth and global partnership. These intentions are similar to the principles of scientific theories. Nevertheless, they do not correspond to certain branches of science. Therefore, they are not scientific principles.

(5b) Based on (5a), how should the conception of sustainable development be assessed? - As a form of quasi-scientific knowledge that does not possess the form of clarity that is inherent in scientific theories.

(5c) Nevertheless, UN summit participants have made progress in improving the concept of sustainable development. - There was certainly progress, but it remained quasi-scientific. Thousands of researchers used a false methodology. Once directed on the wrong path, they continue to follow it.

(6) Is the thesis about sustainable development controversial? - It does not if we proceed from its specified content. We are talking about such a long-term development that ensures the successful transfer of the historical baton from one generation to another. According to its
status, science is such that it always ensures the development of theories and, accordingly, the phenomena it represents. In this case, one or another desired and feasible scenario is selected. Not every scenario is feasible; however, there is always a wide choice in this regard.

(7) Does science provide balanced long-term development? - Of course, it provides and does it through interdisciplinary relationships. The conception of sustainable development has drawn attention to systemic formations, but their true nature has not been determined. According to scientific data, it consists of the coordination of a certain set of relativities. Let us consider the correlation of three theories, $T_a$, $T_b$ and $T_c$. Any pair of theories has relativity about the third theory. For example, the $T_a \{T_b\}$ and $T_b \{T_c\}$ are, respectively, the relativity of the theories $T_a$ and $T_c$, about the theory of $T_b$. Accordingly, one can write the expressions of relativity for other theories. Harmony occurs if the mutual influence of theories is the same. For example, $T_a \{T_b\}$ is equal to $T_b \{T_a\}$. If $T_a \{T_b\}$ is greater than $T_b \{T_a\}$, then $T_b$ suppresses $T_a$. In this regard, we can recall, for example, the notorious anthropocentrism, which consists of the fact that people suppress natural factors.

(7a) Is it permissible to extend the example of $T_a$, $T_b$ and $T_c$ to the three pillars of the conception of sustainable development, ecology, economics and social factors? - In no case. Not the branches of science mutually influence each other, but their basic theories. The supporters of the quasi-scientific conception of sustainable development, without considering the mutual influence of theories, are losing scientific ground under their feet.

(7) Does the scientific point of view make it possible to clarify not only the qualitative content of sustainable development but also the status of its quantitative parameters? - Of course, it does. Science has accumulated vast experience in solving multicriteria decision-making problems and assessing the results achieved, in particular, through the Harrington desirability function (HARRINGTON, 1965).

(8) Does the philosophy of science clarify the question of the meaning of ethics for the conception of sustainable development? - Undoubtedly, it clarifies. In the philosophy of science, researchers distinguish between natural, axiological and auxiliary (formal) sciences. For example, physics is natural, economics is axiological, and mathematics is an auxiliary science. Auxiliary sciences allow you to reveal the potential of the natural and axiological sciences. What type of science does ethics belong to? Historically, it happened that ethics was included in the category of axiological theories. In this case, it was necessary to present its concepts as having an independent meaning. No attempts to define as such, for example, the concepts of duty, utility and responsibility have led to success. In this regard, it is reasonable to check the consistency of enrolling ethics in the category of auxiliary sciences. Otherwise, you should abandon it. The history of the development of sciences shows that the rejection of ethics inevitably leads in all axiological theories to recurrences of injustice, the domination of some groups of people over others. Therefore, the principle of justice, according to which one should seek to maximize the prosperity of all stakeholders, belongs directly to axiological theories. It turns out somewhat unexpectedly that ethics is an auxiliary science.

(9) Was this circumstance taken into account in the concept of sustainable development? - Partly, yes, since directly the conception of sustainable development consists of the requirement of the equal importance of all generations of people, both present and future. Unfortunately, this requirement is combined with an understanding of ethics as an independent and not an auxiliary science. All authors whose works were considered in section $T_3$ to adhere to this erroneous position. As a result, ethics still arrives in a metaphysical shell. That is why unreasonably high hopes are pinned on traditional ethical systems.

(10) How is the philosophy of science different from science? - Philosophy of science is one of the sciences and an auxiliary one. It is to clarify the methodological and conceptual content of all sciences.

(11) How does the conception of sustainable development relate to science? - It is an organic part of science. Removing the conception of sustainable development or some of its organic part, for example, ethics, outside of science will certainly lead to some costs. It is unacceptable after Amantova-Salmane to attach to science, although actual, nevertheless, only an instrumental value. “Science is a crucial tool for the ethics of sustainable development, it is even
more reasonable to allocate the mission of science education and provide people with tools which allow them to maintain a critical spirit related to scientific advances”. (AMANTOVA-SALMANE, 2017, p. 5).

(12) Shouldn’t we be afraid of absolutizing science in the conception of sustainable development? – We see no reason for this. Science is the most developed knowledge, the result of the centuries-old activity of scientists. Continuous attempts to oppose the developed knowledge with the undeveloped have never led to success.

(13) Consistent use of the achievements of the philosophy of science to characterize the conception of sustainable development leads to its transformation. Is not this transformation tantamount to its complete negation? – The considered transformation of the conception of sustainable development does not lead to its denial. The positive part of the conception of sustainable development remains within the framework of the strategy for the comprehensive development of science. It is necessary to understand that the only panacea for all the hardships of humankind, including hunger, poverty, destructive wars, is a strategy for the full development of science, including ethics. It has no reasonable alternatives. Strategy for the full development of science expresses in the most definite form the possibilities for the successful development of modern humankind.

DISCUSSION

The conception of sustainable development, largely thanks to the activities of the UN, has become the main symbol of the aspirations of modern humanity. It is not surprising that many researchers are making significant efforts to clarify its content. Unfortunately, they do not use a clear, science-based methodology. Following it, the conception of sustainable development should be considered, first, from the standpoint of the philosophy of science. As a rule, researchers ignore this possibility. What do they oppose to it? Analysis of the literature convinced us that these are three trends.

First, UN summit participants are improving the conception of sustainable development mainly from an environmental and, to a lesser extent, ethical perspective, which leads to the concept of three pillars. The two mentioned approaches and the idea of the three pillars represent the achievements of modern science in an extremely truncated form. The second trend is to clarify not so much the conception of sustainable development as a whole, but rather the notion of sustainable development. Here scientific findings are used more boldly than in the first case. Nevertheless, an alienated attitude towards them persists. In our opinion, sustainable development is ensured mainly through long-term planning. This circumstance is of decisive importance in the development of the notion of sustainable development.

The third trend, ethically oriented, is of particular interest. It could be recognized as scientifically sound if the status of ethics was correctly established. Unfortunately, many authors do not translate the traditional ethics, be it utilitarianism, deontic or are teleological theories, as well as anthropocentrism, on a scientific track. In the central section of the article, we consider the conception of sustainable development from the standpoint of the philosophy of science. We hope that it was in it that we managed to give the whole article a methodologically and conceptually holistic look. The insufficiency of those approaches that consciously or spontaneously are opposed to the philosophy of science became obvious.

CONCLUSION

The conception of sustainable development is intended to express the basic aspirations of the modern human community, its hopes for a favourable future. Despite repeated attempts to clarify its content, it remains undetermined scientifically and, therefore, is largely debatable. The novelty of the article lies in the fact that the authors consider the conception of sustainable development in the light of the achievements of the philosophy of science. We believe that there is no alternative to this research method. Following it, the renewal of the conception of sustainable development leads to its significant transformation. The positive content of the conception of sustainable development is part of the strategy for the full development of science, taking into account its ethical content.
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The conception of sustainable development: from environmentalism to ethics and philosophy of science

Conceção do desenvolvimento sustentável: do ambientalismo à ética e filosofia da ciência

Concepción del desarrollo sostenible: del ecologismo a la ética y la filosofía de la ciencia

Resumo
Consideramos a concepção de desenvolvimento sustentável à luz das conquistas da filosofia da ciência, mais claramente representada pela teoria da transdução conceitual. Quatro tendências no desenvolvimento da concepção de desenvolvimento sustentável são consideradas: o desenvolvimento da concepção de desenvolvimento sustentável nas cúpulas da ONU, o esclarecimento do conceito de desenvolvimento sustentável, a correlação da concepção de desenvolvimento sustentável com a ética e sua caracterização na perspectiva da filosofia da ciência. As três primeiras tendências, sem metodologia distinta, não levam a inovações significativas. A quarta tendência nos permite traduzir o conteúdo da concepção de desenvolvimento sustentável, incluindo sua orientação ética inerente, em trilhos científicos. Acontece que, na forma mais plena, as aspirações da humanidade moderna e suas esperanças de um futuro favorável são expressas pela estratégia de desenvolvimento da ciência, que considera o conteúdo positivo da concepção de desenvolvimento sustentável.

Palavras-chave: A concepção de desenvolvimento sustentável. Filosofia da ciência. Desenvolvimento total da ciência.

Abstract
We consider the conception of sustainable development in the light of the achievements of the philosophy of science, most clearly represented by the theory of conceptual transduction. Four trends in the development of the conception of sustainable development are considered: the development of the conception of sustainable development at the UN summits, clarification of the concept of sustainable development, correlation of the conception of sustainable development with ethics, and its characterization from the perspective of philosophy of science. The first three trends, having no distinct methodology, do not lead to significant innovations. The fourth trend allows us to translate the content of the conception of sustainable development, including its inherent ethical orientation, into scientific rails. It turns out that in the fullest form the aspirations of modern humankind and its hopes for a favourable future are expressed by the strategy of all-round development of science, which considers the positive content of the conception of sustainable development.

Keywords: The conception of sustainable development. Philosophy of science. Full development of science.

Resumen
Consideramos la concepción del desarrollo sostenible a la luz de los logros de la filosofía de la ciencia, representados más claramente por la teoría de la transducción conceptual. Se consideran cuatro tendencias en el desarrollo de la concepción del desarrollo sostenible: el desarrollo de la concepción del desarrollo sostenible en las cumbres de la ONU, la clarificación del concepto de desarrollo sostenible, la correlación de la concepción del desarrollo sostenible con la ética, y su caracterización desde la perspectiva de la filosofía de la ciencia. Las tres primeras tendencias, al no tener una metodología distinta, no dan lugar a innovaciones significativas. La cuarta tendencia nos permite traducir el contenido de la concepción del desarrollo sostenible, incluida su orientación ética inherente, en carriles científicos. Resulta que, en la forma más completa, las aspiraciones de la humanidad moderna y sus esperanzas de un futuro favorable se expresan en la estrategia de desarrollo integral de la ciencia, que considera el contenido positivo de la concepción del desarrollo sostenible.

Palabras-clave: La concepción del desarrollo sostenible. Filosofía de la ciencia. Pleno desarrollo de la ciencia.