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**INTERNET TECHNOLOGIES AND TRANS-SCIENCE:
ORIENTATION FOR FUTURE**

Naira Danielyan (a)*
*Corresponding author

(a) National Research University of Electronic Technology, Bld. 1, Shokin Square, Zelenograd, Moscow, Russia,
124498, e-mail: vend22@yandex.ru, tel.: +79166046223

Abstract

This paper provides a philosophical analysis of the Internet technologies from the perspective of trans-science development. According to the author, these technologies should be explored as a qualitatively new sphere of human creative and constructive activities as they become a powerful generator and a good amplifier of cultural progress and innovations. It is proved that the active role of cognition is the most important aspect of the constructivism paradigm as the methodology of this type of technologies. The idea that trans-humanism is directed to the decision of trans-science issues, mostly having a constructive nature under the influence of virtualization of human consciousness and social relations, is developed. The article demonstrates by the example of the ‘instrumental rationality’ paradigm that any technologies including the Internet cannot be used in vacuum; they are interconnected and imply a number of political, economical and social aspects, which accompany them. As a result, they are becoming a characteristic of the public style of thinking. The author concludes on the basis of the analysis performed that the Internet technologies are able to settle the challenges arising under the influence of the current severe ecological crisis taking into consideration such concepts as stable social progress by means of searching reasonable answers to trans-science issues and passing the limits of trans-humanism.

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Keywords: Internet technologies, trans-science, trans-humanism, virtual reality, subject, constructivism ideas.



1. Introduction

The term trans-science is often used by participants of international philosophical forums and conferences. According to A. Weinberg, the trans-science period started with the first A-bomb tests in the middle of the XX century. It stipulated the shift from researching nuclear power by some scientists to team projects. He writes: “Many of the issues which arise in the course of the interaction between science or technology and society, for example, the deleterious side effects of technology, or the attempts to deal with social problems through the procedures of science – hang on the answers to questions which can be asked of science and yet which cannot be answered by science. The author proposes the term trans-scientific for these questions...” (Weinberg, 1972, p. 209). Biological effects of weak radioactive influence on the environment, consequences of applying nanotechnologies to prolong the life expectancy, emergence of virtual reality, creation of artificial intelligence, changes of human ethics under new technological impacts are among such questions.

At the same time, academic science has turned from laboratory researches to mass industrial applications. Nowadays its purpose is the realization of national goals. J.R. Ravetz believes, “a scientist turned into an academic entrepreneur” at the stage of the transition to the industrialized science (Ravetz, 2011, p. 143). This shift required not only an expertise from scientists, but their social responsibility.

Thus, the main trans-scientific peculiarity is to unite problems from various fields of human knowledge, i.e., it is based on a trans-discipline approach. A bright example is the emergence and spreading of the Internet technologies. In comparison with rather rational technological methods that were used in past, modern technologies are able to provide for numerous negative effects due to the availability of mechanisms possessing an opportunity to manipulate the human mentality. Moreover, there has been no comprehensive reflection of their properties so far. So, they might be accepted as the starting point of philosophical thought due to the fact that the traditional approach to understanding the technology cannot reflect all the range of arising challenges. As a result, the main question is how all the spectrum of technologies and the social life are being changed with penetration of the Internet technologies into all aspects of human existence.

2. Problem Statement

This article presents a philosophical analysis of trans-humanism that appeared as a reaction to trans-science effects. First of all, it is necessary to note the Internet technologies change the cognition process completely and this fact is obvious today. According to F.G. Yunger, it turns into “a chain of the sophisticated inventions, an artful system aimed at emptying bags and boxes that are kept in the hidden places of nature” (Yunger, 2002, p. 508). In general, the modern society is replacing the technological paradigm of industrial and post-industrial societies into a new one implying the substitution of various social and human values.

3. Research Questions

According to the Russian Trans-Humanism Society, the scientific trend studied in this article is defined as “a public movement and a system of views based on comprehension of achievements and

perspectives of science” (RTS). It is also “a rational and cultural movement confirming a possibility and desirability of fundamental transformations in human condition by means of human mind achievements especially in the technological sphere to strengthen man’s mental, physical and psychological abilities” (RTS). Thus, trans-humanism is mainly founded on trans-science breakthroughs in general, the Internet and nanotechnology ones, in particular. The author will further consider some effects of the Internet technologies paradigm on this phenomenon.

The level of virtualization of human consciousness and social relations is going through serious changes due to the development and availability of neurointerfaces which invention would be impossible without the Internet technologies. Such deepening into human sensitivity unavoidably leads to the emergence of ‘hybrid reality’ eliminating the distinction between virtual human personality and his physical realization in a body. Even nowadays, it is possible to claim that social nets and the virtual world, brought by them, result in man’s egocentrism. One concentrates more and more on one’s thoughts while losing the connection with the real world. As a result, the ideas concerning physical borders of communication and personal identification are also transformed, because person’s presence in the communication environment is perceived as virtual and real simultaneously. It is an absolutely new phenomenon of human existence having the constructive nature in its foundation.

From this position, the social character of a technology similar to the Internet is not universal or homogeneous. It is defined by logics of the technology in its basis, depends on social relations and conditions that appear to support some specific technological developments and assumes the negation of other opportunities. It cannot be considered as completely artificial and unnatural, since it helps to ignore or reject various natural obstacles that could restrict the communication process among people.

The conception of ‘instrumental rationality’ is applicable here. It is a special type of knowledge substantiation, regulating the rules of human behavior and figuring out the effectiveness of cognition tools. Its most important element is a procedure or a tool that allows estimating the borders of its applicability with other criteria (e.g., justice, common benefit, personal values). According to J. Ellul, the heart of any technology is to be defined as “a scope of methods, rationally processed and effective in any field of human activity” (Ellul, 1964, p. xxv). The society with this method spreading outside technologies, i.e., covering such spheres as social life, culture, spiritual life, etc., might be considered a technological one.

Undoubtedly, the Internet technologies promote instrumental rationality, since they take the more and more crucial position in the social aspect of life worldwide (Turkle, 1995). They do not only direct the ways of performing various kinds of human activity and existence, but also define the opportunities for realizing the whole range of procedures, abstract for a specific situation. There are a lot of examples of applying the Internet technologies in practice, illustrating this approach: uniting and spreading western mass media (Hannigan, 2002), a possibility of global harmonization of public policy in the communication sector (Raboy, 2002), standardization of management methods and labour conditions especially for low-skilled professions with the high level of computer means usage (Rochlin, 1997).

According to these examples, the Internet technologies, as any other ones, cannot be developed and used in vacuum. A significant part of the social effect belongs to the application of a technology by individuals or groups of people in a social situation. It supposes the consideration of a number of

political, economic and social aspects which accompany it. A.P. Ogurtsov writes, “there appears a new form of intersecting various research fields, new forms of the general scientific and technical complex strategy, where the fundamental knowledge arises from the applied one, which, in its turn, gives a strong impetus to technical innovations and new theoretical speculations” (Ogurtsov, 2011b, p. 472). This results in new prospects of trans-science development that are being shortly considered here.

4. Purpose of the Study

Scientific knowledge from the trans-science position is being understood as suggesting probable hypotheses, which pass through bifurcation points where the trajectory for further development is chosen. The subject of research appeals to complex, dynamic systems that include technical, managerial, social, and other levels. Any cognition process turns into a social act since the communication among representatives of different knowledge fields stimulates the emergence of special norms and standards that are not connected with a specific author, but are acknowledged by all the scientific community involved in the process. As a result, they become a characteristic of the public style of thinking. The consequence is a transformation of the communication language acquiring a universal character and “turning to linguistics and linguistic methods” (Ogurtsov, 2011b, p. 484). These norms and standards permit to cognize the whole range of science functions:

- to analyze languages of different knowledge fields;
- to discover “scientific discourse as a net of communications with their mutual intentionality and inter-reflection” (Ogurtsov, 2011a, p. 496);
- to study natural sciences in the context of communicative relations.

The author believes that this term is correct for social and humanitarian sciences, too.

However, these models have a number of drawbacks. Their acceleration, extension of their mobility and flexibility, reduction of a local attachment stimulate the arrival of micro-societies and new social institutions of global communications that can exchange some information in the form of text messages. A.V. Nazarchuk writes that “man becomes a message generator” (Nazarchuk, 2008, p. 69). Thus, a message starts performing a role of the fundamental item of the society. The whole set of messages, depending on their intention and content, forms the life style of a person, a micro-society or a social institution. It does not matter at all who is a message carrier, because its content gains the main significance. It means that its content and its author’s competence are more important than its sender. Yet, a message and its perception do not always correlate with each other.

The example of the Internet technologies allows making a conclusion that a sender often knows nothing about his message recipient. In turn, the recipient is often not sure whether the message has been sent to him personally. He cannot sort out frequently what should be perceived as the message information, accompanied by some intention, i.e., the objectification of the discussion gains some fuzziness. A.Yu. Antonovsky and V.A. Emelin consider that “the communication at the society level is still possible, but cannot form self-adjusting stable successions of messages” (Antonovsky, Emelin, 2012, p. 106), since the knowledge presentation loses its tough borders and changes regularly.

According to the above idea, it is possible to highlight the following social and cultural perspectives of trans-science development on the basis of the Internet technologies:

- forming a new life style;
 - appearing phenomenon of the ‘secularized eternity’ in the public consciousness because of a significant extension of human life expectancy and blurring the reality borders;
 - changing man’s life goal due to his status of a natural and social world creator.
- Their short description and clarifying are the purpose of this article.

5. Research Methods

The connection between internal scientific purposes and external social values and aims must be explicated as a basic *method* being used in this article. Scientific perception is considered within the context of the social terms of its existence and within the context of its social consequences as a special part of community existence, which is determined at every stage of its development by the general state of the culture of a given historical epoch and the value orientations and world outlook of that epoch. The modern scientific world creates a special situation of uniting the theoretical and experimental studies and the applied and fundamental knowledge, combined with the intensification of feed-forward and feedback. Hence, one observes the intensification of the communication processes among the principles and the presentation of reality, all of which are formed in various sciences and served as a basic principle for further research work.

6. Findings

The main consequence of using the Internet technologies is the unprecedented progress in robotics, software and hardware engineering. It will provide new opportunities to create the artificial intelligence and, as a result, to realize new social forms and psychical processes. These results correspond to the trans-humanism conception. The website of the Russian Trans-Humanism Society cites some of its “radical possibilities” that conform to the above mentioned trans-science issues and ways of their decision:

- super intellectual machines;
- significant extension of life expectancy;
- transfer of human consciousness into virtual reality” and some others (RTS).

On the grounds of the analysis that has been carried out in this article, one can conclude that the trans-humanism manifests itself in three aspects:

- practical activity;
- technological achievements;
- social transformations.

So, it is obvious that it is based on constructivism ideas significantly. Modern constructivism theory considers the construction of the surrounding world by subject in the limits of one’s perception and mentality (Lenk, 1993). The presence of the outer world is not denied. However, cognition stops are to be defined by the statement of its objective existence. It means that subject’s mind does not process the information received outside any method of searching thought, an object of the cognition process is a question which subject has not answered yet. Besides, one is not able to get it from one’s memory, direct observations, reading textbooks and reference books or asking specialists. While reasoning, subject forms

an objective field. It is a relatively narrow circle of phenomena concerning the search of an answer to a cognitively significant question directly. As subject constructs one's perception, the constructs obtained may not be coordinated with the real world, but correspond only to subject's experience. If the knowledge achieved conforms to the reality, it means the coincidence of the construct with the world perceived that can be both subjective and objective.

Any border between 'inner' (i.e., taking place inside the subject of cognition) and 'outer' (i.e., its environment) is removed in epistemology today. This means that reality is not just the result of subject's construction. Nowadays it is supposed with respect to rational and cognitive activities that subject acts on the basis of theoretical schemes and models, methodological rules, empiric information, and logic norms of reasoning. These schemes are used as the basis for making a decision regarding a mode of action to resolve a current problem. Such choice from a number of alternatives and a range of possibilities is stipulated by subject's constructive thinking and is, therefore, open for future revision. It can be concluded that subject is not a closed system, but it is rather open to the world (Danielyan, 2013).

On these grounds, it is obvious that trans-humanism is a synthesis of discrete doctrines being applied in the technological practice, especially in the Internet technologies. A human being is substituted by a virtual existence, i.e., the elimination of anthropocentrism principles that were laid in the foundation of traditional humanism and traditional science occurs.

Informational and computer revolution, brought by the Internet technologies, prepares the basis for deep social changes. They include all the levels of social integrity such as social organization, national economy and conditions of work, political and educational spheres. Spiritual and cultural spheres of the community are also changing essentially. The Internet technologies become a powerful generator and a good amplifier of cultural progress and innovations. It leads to contradictions and ambiguous processes. Electronic communication facilities for personal usage, television and, in particular, international communication facilities provide an opportunity to receive some necessary information practically from any part of the world. It widens a personal freedom, someone's independence from a location and a free choice of the information by itself. The two opposite processes in culture are under way: massification and demassification. Being internally connected, they cause a lot of unpredicted collisions and unexpected possibilities.

Undoubtedly, an individual possesses some freedom in the determination of his activity, because at every definite historical moment there is not the only, but several real possibilities for further development. The individual is more or less free in the choice of means to reach the aims, which he has set. At the same time, the results of the scientific and technological progress broaden humankind's capabilities. They increase the variety of ways being used for a definite target achievement. It is clear that the scientific and technical development as a rational activity has brought a lot of positive aspects in the enlargement of personal freedom. It should be recognized that some new rationality appears in the course of the scientific and technological progress. It occurs as a unification of alternative viewpoints at the world.

Apparently that influence of motivation and semantic factors of subjectivity on cognitive aims should be considered rather widely taking into account individual mental features, different personal preferences, etc. Understanding originality and specific positions of different subjects of scientific and

cognitive activity, according to aims of motivation and semantic spheres of the subject's perception, one should introduce this activity as a complex process of interaction among different positions, research programs, etc.

7. Conclusion

It is possible to conclude that the object sphere is expanded in the new scientific picture of the world due to including such systems in it as 'artificial intellect', 'virtual reality', 'cyborg-relations' that are the results of the progress in the field of the Internet technologies. Such radical extension of the objective sphere takes place in parallel with its radical 'humanization' as it has been demonstrated by the trans-humanism example. A person is included in the picture of the world not only as its active participant, but as its constituent principle. Thus, an individual must be not so the center of the world as an incentive to its growing perfection.

It is obvious that the decision of trans-humanism issues is to be coordinated with the 'stable development' conception. It is understood as the necessity of the immediate environmental protection on the assumption of further convergence of natural and humanitarian sciences aimed at getting more perfect knowledge (Los, Ursul, 2000). This approach raises a question concerning the borders of man's constructive activity, its involvement and correspondence to the real world. A human being is becoming more and more 'technological' with the evolution of the Internet technologies. However, he does not stop being sensible. He himself, his body and consciousness turn into an integral part of complex eco, socio-cultural and socio-technical systems (Danielyan, 2010).

In the context of the strengthening ecological and humanitarian crisis, the problem of human future can be considered as a task of preventing the human and nature degradation, achieving science and society co-evolution, forming the civilization based on the stable development by means of searching sensible answers on trans-science matters and exceeding trans-humanism limits. These are the Internet technologies that are able to settle these issues and define future perspectives of not only science, but the whole civilization development.

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