Е. В. Грязнова, И. А. Ланская, Т. А. Козлова

Виртуальная реальность как категория психологии в рамках информационной концепции

Сделана попытка обосновать необходимость уточнения определения понятия «психологическая виртуальная реальность» и разграничения его смыслового содержания с такими понятиями как «субъективная реальность» и «идеальная реальность». Сделать это предлагается на основе информационной концепции виртуальной реальности, разработанной автором и представленной в работах, ссылки на которые даются в статье. Основная идея заключается в том, что психику и виртуальную реальность любого происхождения следует рассматривать как информационные феномены.

Основу методологии информационной концепции виртуальной реальности составляет информационный подход и диалектический метод. Также применяются методы анализа, сравнения и обобщения.

Проводится анализ исследований, посвященных разработке категории «виртуальная реальность» в рамках «виртуалистики» как направления в психологии. Основная проблема в определении психологической виртуальной реальности заключается в том, что исследователи сравнивают между собой не все виртуальные феномены, а только два из них: психологические и компьютерные. Причем, сравнение происходит по одному из параметров – способности создавать иллюзорную реальность.

В ходе исследования было показано, что категория виртуальной реальности, используемая в современном научном знании, не отражает информационной сущности данного феномена. Для поиска самостоятельного значения этой категории необходимо использование понятия «виртуация» как полярной категории «информация», обозначающий способ существования информации на уровне психики вне взаимодействия, в пассивном состоянии.

В современной психологической научной литературе категория «виртуальная реальность» чаще используется в исследованиях психологической зависимости от компьютерных систем виртуальной реальности. При этом смысл самой категории виртуальной реальности понимается как программный продукт. Понятие «психологическая виртуальная реальность» остается до конца неопределенной. Что влияет на сознание людей: виртуальная реальность, информационная или каждая из них? Может ли оказывать воздействие на психику информация в закодированном состоянии, и если да, то каковы механизмы этого воздействия? Возможно термин «виртуация» поможет объяснить процессы виртуализации и девиртуализации информационных процессов в сложнейшей системе нашей психики.

Ключевые слова: виртуальная реальность, информация, виртуально-информационная реальность, психологическая виртуальная реальность

Ссылка для цитирования:

Грязнова Е. В., Ланская И. А., Козлова Т. А. Виртуальная реальность как категория психологии в рамках информационной концепции // Перспективы науки и образования. 2020. № 2 (44). С. 308-316. doi: 10.32744/pse.2020.2.24

E. V. GRYAZNOVA, I. A. LANSKAYA, T. A. KOZLOVA

Virtual reality as a category of psychology within the information concept

Attempts to justify the need to clarify the definition of "psychological virtual reality" and to distinguish its semantic content with such concepts as "subjective reality" and "ideal reality". It is proposed to do this on the basis of the information concept of virtual reality, developed by the author and presented in the works, references to which are given in the article. The basic idea is that the psyche and virtual reality of any origin should be considered as information phenomena. The basis of the methodology of the information concept of virtual reality is the information approach and dialectical method. In this study, methods of analysis, comparison and generalization are also used.

Analyzes the research devoted to the development of the category "virtual reality" in the framework of "virtualistics" as a direction in psychology. The main problem in defining psychological virtual reality is that researchers do not compare all virtual phenomena, but only two of them: psychological and computer. If anything, the comparison is one of the options – the ability to create an illusionary reality.

Showed that the category of virtual reality used in modern scientific knowledge does not reflect the information essence of this phenomenon. To find an independent meaning of this category, it is necessary to use the concept of "virtualization" as a polar category "information", denoting the way information exists at the level of the psyche outside of interaction, in a passive state.

In modern psychological scientific literature, the category "virtual reality" is more often used in studies of psychological dependence on virtual reality computer systems. At the same time, the meaning of the virtual reality category itself is understood as a software product. The concept of "psychological virtual reality" remains to the end uncertain. What influences people's consciousness: virtual reality, information or each of them? Can information in a coded state have an impact on the psyche, and if so, what are the mechanisms of this impact? Perhaps the term "virtualization" will help to explain the processes of virtualization and devirtualization of information processes in the most complex system of our psyche.

Key words: virtual reality, information, virtual-information reality, psychological virtual reality

For Reference:

Gryaznova, E. V., Lanskaya, I. A., & Kozlova T. A. (2020). Virtual reality as a category of psychology within the information concept. *Perspektivy nauki i obrazovania – Perspectives of Science and Education*, 44 (2), 308-316. doi: 10.32744/pse.2020.2.24

Introduction

The information concept of virtual reality was developed by us and presented in detail in one of our works [9].

Here we state the necessary provisions on which we will rely in this work:

1. It is known from information theory that any kind of information defines itself only in interaction as reflected diversity. However, outside of interaction information does not cease to exist. According to our concept, outside of interaction it exists virtually as an undifferentiated variety (for example, when its content is encoded and hidden). This is true for any kind of information (abiotic, biotic, psychic, technical and social).

2. On the basis of dialectics and its principles we introduce the concept of “virtual-information reality”, which is formed as a unity of two opposites: information and virtuation.

3. Virtual-information reality forms on the basis of coexistence of diversity of information (diversity in the active state) and virtuation (diversity in passive state).

In psychological science it is proved that the psyche arises at a certain stage of life development [4, 23].

Conventionally it can be defined as a link that integrates the biological and social ways of being a person. The world of the psychic is very rich, complex and diverse. The psyche perhaps is one of the most unique phenomena of the universe that man studies. Many of its properties and manifestations are still barely understood. The unique and inexplicable manifestations of mental phenomena in the framework of psychological science try to explain para-scientific, extra-scientific and other types of non-scientific knowledge. Nowadays, there are mysterious manifestations of the psyche which cannot be explained by psychology yet. However, it has a rich categorical apparatus in its arsenal which adequately describes the phenomena being studied already. In situations when the scientific research proposes a new concept, scientists are trying to find a use for it but not successfully always. The same situation is happening with the concept of “psychological virtual reality”.

Materials and methods

In the article the following research methods were used: analysis, comparison, generalization, principles of dialectics, information approach, information concept of virtual reality.

Research result

Consider the specific situations that explain our assumptions. For example, N.A. Nosov in his works on virtualistics (this was the name of a new direction in psychology), the concept of “psychological virtual reality” designated the plurality of subjective realities [19].

His followers went even further designating the concept of virtual reality phenomena long studied by psychology, having in this science quite understandable and definite designations. For example, N.I. Ikonnikova writes: “Virtual reality is the result of the interaction of the “I” of a person with events, phenomena, things that exist in books, works of art, historical

literature, computer games. In other words, virtual reality is an apparent of “other” reality that a person perceives as genuine and important for him because he takes an active part in it but not as a physical person, but as a mental one” [14, p.133].

What new has the author introduced into the categorical apparatus of psychology? As we can see there is a clear identification of the concepts of “subjective reality” and its elements with the concept of “virtual reality”. And any substantial increment of the category “virtual reality” did not happen.

We do not pretend to introduce new concepts into psychology. We are only trying to explain that considering the category of “virtual reality” and the human psyche from the position of the information approach it is possible to justify the application of the concept of virtual reality to the designation of certain states of mental phenomena. According to this approach, the psyche and its components have an information nature, and therefore have the ability to exchange information with information elements of all levels of the Universe. In psychology the position is used that consciousness, subconscious and unconscious these are special ways of transmission storage and processing of relevant types of information. It is the ability to information interaction provides mutual influence of mental and information phenomena of the outside world. Therefore, it is more logical to designate information states of the psyche on the basis of polarities: actual (active) and virtual (passive) states.

For example, using categories and concepts of information approach and information concept of virtual reality we can offer to designate “...a potential set of personal properties and states of mentality”, allocated by V.N. Druzhinin [5], as mental information virtual, i.e. the quantitative and qualitative stock of the information stored in mentality and used by it in the course of activity.

Only understanding mental, subjective and ideal types of information it is possible to correlate them with concept “virtual”. Investigating the origin of the term “virtual” in our works, we have shown that initially one of its many meanings is revealed as the dynamism of the idea (Democritus, Aristotle, Plato) [9, 10]. Subsequently, the term is developed in the works of medieval philosophers and theologians (Thomas Aquinas, D. Scott, Nicolaus Cusanus), and then used in Modern times in the works of C. Pierce, G. F. W. Hegel, E. Becher, etc. to denote the mode of existence of the idea. “Ideal” in itself is quite difficult to understand and explain the concept even intersected with the term “Virtuous”. As you know in the twentieth century, especially in Russia, the category of “ideal” did not have a clear understanding. For example, in the works of A.F. Losev and M.A. Livshits it is defined as a kind of objective reality. Thus, M.A. Livshits understands the ideal as an objective standard or sample [17].

D.I. Dubrovsky in his works defines the ideal as a set of human subjective experiences [6; 7].

For E.V. Ilyenkov the ideal is not only subjective or logical but also objective and social. From his point of view, the ideal is objectified thought forms [15].

Comparing the works of philosophers and psychologists, in which the problem of the ideal and the problem of the virtual is studied, it can be seen that both categories are interpreted almost equally. They are both used to refer to phenomena of subjective, objective and social realities. It should be noted that most often in the works of contemporaries there is a designation as a virtual reality of such phenomena of the psyche as altered states of consciousness. For example, V.P. Rudnev points out: “In a broad sense Virtual reality is any altered state of consciousness: psychotic or schizophrenic paranoid delirium (see: psychosis, schizophrenia, dream), narcotic or alcoholic intoxication, hypnotic state, change

in perception of the world under the influence of anesthesia. Virtual reality also occurs in pilots at supersonic speed, in prisoners, submariners, in people experiencing stress (for example, during an air or car crash), in claustrophobics (transpersonal psychology), almost everyone who somehow forcibly limited in space for a long time" [21, p. 124].

T.N. Berezina in her works renames dreams and hallucinations into virtual reality [2].

So, what has changed in the understanding of the phenomenon of dreams or hallucinations if the term "virtual reality" just replaced it?

To convince in meaningless of the replacement of one concept into another, let's compare two versions of the description of the same phenomenon by different terms. N.I. Ikonnikova states: "... as a mental phenomenon, virtual reality affects the work of the whole organism. For example, under its influence, pressure, heart rate and sweating can be changed, muscles tense up". [14, p. 131].

Now let us compare this definition with the description of D.I. Dubrovsky's subjective reality: "The Phenomenon of subjective reality can be the cause of bodily changes as an information cause" [7, p. 253].

Studying and comparing the works of philosophers and psychologists devoted to the study of mental phenomena with the works of the so-called "virtualists", it can be seen that the latter identify the concept of "subjective reality" and "virtual reality", or rather replace the most developed scientific category.

Some virtualists try to justify the need for such a replacement explaining this by the fact that philosophy and psychology do not have right categories to designate new phenomena. But are we talking about new, previously unknown to science phenomena? For example, S.S. Horuzhy defines psychological virtual reality as: "... a special kind of image of reality one way or another formed in consciousness: unlike ordinary images, products of consciousness and imagination, it acts as the actual environment of a certain human activity. In other words, a person perceives himself as residing in a given reality and as such acts - so that this reality has the characteristics of ordinary empirical reality, but, of course, is deprived of some of its basic predicates" [13, p. 54].

In what ways this "special image of reality" differ from hallucinations, illusions, and even the mere fact of imagination? In philosophical and psychological literature it is proved that any ideal image of an object is not the object itself but its ideal copy. How can our psyche operate with other objects? Telepathy, teleportation etc. phenomena are not scientifically proven, they are spheres of parapsychology and another para-scientific knowledge. It is quite clear that any copy of a material object and even an ideal one is always flawed that is why it is a copy. It turns out that there are no signs by which you can distinguish imagination, illusion, fantasy etc. from the phenomena of virtual reality.

It should be noted that the categories of ideal and virtual are identified in doctoral dissertations. For example, S.I. Orekhov believes that virtual reality is one of the forms of objectified existence [20].

This approach duplicates the concept of an ideal of E.V. Ilyenkov. It is not surprising that the consciousness in such works is becoming virtual. Thus, N.L. Sergienko writes that consciousness is virtual by its nature [22].

The category of ideal consciousness according to the authors no longer reflects the essence of consciousness. As a consequence of the innovation in the categorical apparatus of science of the concept of "virtual" there was an exception from this list of the category "ideal". In The new philosophical encyclopedia we no longer find articles on this topic, but we can read all about the concepts of "Virtuality" and "Virtual reality" [24]. Unfortunately, the content of these articles leads to a dead end.

The baton was picked up by the modern generation of scientists. For example, the scientific novelty in one of the dissertations is as follows:

- "The reason for the emergence of virtual reality as a space of socialization is determined: it is the result of awareness of the mismatch of existence with reality and the desire of man in the name of achieving the fullness of his own being in the actual world to minimize the difference between them. Being by nature the embodiment of the ideal world, virtual reality, mastering a person, becomes an internal source of his social activity. It is revealed that the ideal can only imitate virtual reality and in this case it does not become a space of socialization (this is the fate of ideologies, utopias, futurological concepts, etc., as long as the values they offer do not seize the minds of people).

- It is established that in the limit virtual as space of socialization has supra-individual (at this level the values dominating in society and vital reference points manifest themselves) and individual (at this level the individual follows own, different from the generally accepted, representations about the due) measurements; it is defined that socialization by means of virtual space – a necessary condition of dynamism of history" [16, p. 9]. Comments, as they say, are unnecessary.

The discussion of the results

In our opinion such interpretations of virtual reality arise because the authors do not deepen into the philosophical analysis of this concept. The search for the essence of the phenomenon involves a comprehensive study of it. This means that it is necessary at least find common, generic features characteristic of all phenomena that are united by one category. The study of numerous works devoted to the study of virtual reality showed that the authors often compare only two types of reality – computer and psychological. Generalizations are made on the basis of a single similarity between them, psyche and computer programs that allow human consciousness to work with images. In one case these images are the product of subjective reality and in the other - information, created first by subjective reality and then recreated with the help of technology. However, once you apply this definition to the concept of virtual particles in physics, it stops working. In addition, the identification of virtual reality with altered States of consciousness, States of affect, etc. generally excludes from the list of virtual - computer virtual reality.

As you know, computer virtual reality got its name because of the advertising appeal of the term "virtual". In fact, the reality created by computer systems is specially encoded information. It would be more logical to call it "computer information reality" which, of course, does not sound as original virtual reality.

The researchers in modern works are increasingly turning to the problems of psychological dependence on computer games and communication, while still using the established terminology in psychology [1; 11].

Computer programs that can simulate reality as realistically as possible, creating for the human consciousness the illusion of presence in it, continue to be called "virtual reality". In the field of psychological and pedagogical education the terms e-education, digital educational resources, distance education, etc. are widely used [3; 18].

This suggests that in psychological science there is a categorical apparatus that allows you to describe and study the phenomena of new types of psychological dependence, new types of communication. Dependence appears not from programs but from the sensations

that they are able to cause in the human psyche. It remains only to fill the category "psychological virtual reality" with independent content.

In our turn we propose to proceed from the position which unites all virtual phenomena of their generic feature information as an attribute, as an integral quality (not information in an actual state, but in a way of its existence out of interaction). From these positions the ideal and the virtual appear no longer as some different phenomena in nature but as different ways of existence of information. If you call a spade a spade, it turns out that a person needs not virtual reality, but information. Information in its various manifestations affects the psyche and virtuation as the same information, but outside the interaction is passive. This position can be compared with a book: if it is open and the reader knows the language in which it is written then he reads it, and the information obtained during the reading has an impact on the mind. Otherwise the book is an artifact. There is no information interaction, there is no impact. But in a closed book there is information, it does not cease to exist at the same time. This state of information should be called virtual reality.

Thus, D.I. Dubrovsky proves that the ideal is one of the many types of information [6; 7]. The information approach to the definition of psychological virtual reality allows us to consider different types of subjects, among which there are new ones-information quasi-subjects that interact with the real subjects [8].

On the basis of these and many other works we define the concept of "ideal" as information that has become, in the process of processing by consciousness, its property, i.e. knowledge. In the contrast to this, the virtual remains hidden for consciousness, and is ready for actualization. For example, the subconscious information is virtual for consciousness. It passes to the level of consciousness by decoding under certain conditions. These complex processes studies psychology explaining the mechanisms of interaction of elements of the human psyche. Ideal, social, symbolic etc. all these are different information states of the material world. Consciousness being informational by nature, acts as a tool that helps a person to work with information of different levels: to extract it from the depths of the subconscious and unconscious, from the outside world, etc.

The category of psychological virtual-information reality is used by us in the studies of negative consequences of the influence of information culture on the transformation of the personality of a modern man [8; 10].

Conclusion

To underline the written above, psychic virtual reality can be designated as a special way of existence of psychic information. Virtuation (non-reflected diversity) of the psyche is a neuro-dynamic code on the basis of which information is encoded, becoming passive outside of interaction. But it exists, is existing and does not disappear which means that it is real, there are its objects (codes, virtual) and it should be designated as virtual reality. Being actualized, virtualization becomes information (reflected diversity) creating an information reality. The dialectic unity of these two components forms a virtual information reality at the level of mental interaction.

However, it is the virtual state information on the mental level and its relationship with relevant information, mechanisms of virtualization and devirtualization and other phenomena of the psyche, which can be described with the concept of categories of information of virtual reality, requires an appeal to fundamental psychological science.

We study the influence of information computer reality on the transformation of human generic qualities: consciousness, language, activity and communication. Open processes of mentality are available now to us, more precisely, we can see some outcomes, result already. But how many more hidden information processes occur as a result of which our generic qualities are transformed. The influence of virtual reality, as encoded information on the essential qualities of a person, requires scientific research in psychology and its specific scientific knowledge.

REFERENCES

1. Arkhipova M.V., Belova E.E., Gavrikova Y.A., Pleskanyuk T.N., Arkhipov A.N. Reaching generation Z. Attitude toward technology among the newest generation of school students. *Advances in Intelligent Systems and Computing*, 2019, 726, pp. 1026-1032. DOI: 10.1007/978-3-319-90835-9_114
2. Berezina T.N. Can mental activity change physical reality? *Parapsychology and Psychophysics*, 1999, no. 1, pp. 125-141.
3. Bondarenko T.G., Kolmakov V.V. Distance learning as an active educational technology: evaluation of the feasibility of implementation. *Azimuth of Scientific Research: pedagogy and psychology*, 2018, vol. 7, no. 3, pp. 53-57.
4. Chuprikova N.I. The mind and mental processes (the system of notions of General psychology). Moscow, Sadra LLC Publ., 2015. 606 p.
5. Druzhinin V.N. Structure and logic of psychological research. Moscow, 1994. 163 pp.
6. Dubrovsky D.I. Subjective reality and the brain. Philosophy and the future of civilization: TEZ. docl. and speeches of the IV Russian Philosophical Congress. In 5 T. T. 1. Moscow, 2005. pp. 250-265.
7. Dubrovsky D.I. The problem of the ideal. Subjective reality. Moscow, Canon+ Publ., 2002. 368 pp.
8. Gryaznova E.V., Pascal V.V., Makarova O.V., Sysoev V.V. Subjects of communication in the information space: to the question of species diversity. *Azimuth of Scientific Research: pedagogy and psychology*, 2018, vol. 7, no. 4(25), pp. 297-301.
9. Gryaznova E.V., Ursul A.D. Information and virtual reality: conceptual foundations. Nizhny Novgorod, NNGASU Publ., 2012, 186 p.
10. Gryaznova E.V., Vladimirov A.A., Maltceva S.M., Goncharuk A.G., Zanozin N.V. Problems of Virtualization and Internetization of Social Space. *Lecture Notes in Networks and Systems*, 2020, 91, pp. 119-124.
11. Gryaznova, E.V., Nikishina, O.A. Methodological culture of the teacher-researcher. *Perspektivy Nauki i Obrazovania*, 2018, vol. 33 (3), pp. 68-73.
12. Gryaznova, E.V., Treushnikov, I. A., Maltseva, S. M. Disturbing trends in the Russian education system: The analysis of scientists' and teachers' opinions. *Perspektivy Nauki i Obrazovania*, 2019, vol. 38 (2), pp. 47-57.
13. Horuzhiy S.S. rod or crop failure? Notes to the ontology of virtuality. *Voprosy Filosofii*, 1997, no. 6, pp. 54.
14. Ikonnikova N.I. On the problem of inter-determination of ways of human existence. *Philosophical Sciences*, 2003, no. 8, pp. 130 - 140.
15. Ilyenkov E.V. The problem of the ideal in philosophy: Hegel and hermeneutics. Moscow, URSS: book house "LIBROKOM" Publ., cop. 2011. 138 p.
16. Khazieva N.O. Virtual reality as a space of socialization: socio-philosophical analysis of the problem: Abstract Diss. PhD Philosoph. Sci., Kazan, 2014. 19 p.
17. Livshits M.A. about ideal and real. *Questions of philosophy*, 1984, no. 10, pp. 120-145.
18. Monacolin A.V., Yu. N Lapygin. Digital educational resources of the University: design, analysis and examination. *Vestnik of Minin University*, 2019, vol. 7, no. 2. doi: 10.26795/2307-1281-2019-7-2-5.
19. Nosov N. A. Psychological virtual reality. Moscow, B. I. Publ., 1994. 195 pp.
20. Orekhov S.I. Virtual reality: a study of ontological and communication foundations: Abstract Diss. PhD Philosoph. Sci., Omsk, 2002. 45 p.
21. Rudnev V.P. Dictionary culture of the twentieth century. Moscow, 1997. 384 p.
22. Sergienko N.L. Consciousness and culture: analysis of semantic organization: Abstract Diss. PhD Philosoph. Sci., Krasnodar, 2002. 43 p.
23. Sorokoumova S.N., Elshansky S.P., Puchkova E.B., Sukhovershina Yu.V. Cognitive styles and personalization of training of psychology students. *Vestnik of Minin University*, vol. 8, no. 1. <https://doi.org/10.26795/2307-1281-2020-8-1-10>
24. The New Philosophical Encyclopedia: In 4 vol. Inst. of Phil. of Russ. Acad. of Sc., V.S. Stepin [et al.]. Moscow, Thought Publ., vol. 2: E-M. 2001, 634 pp.

Информация об авторах

Грязнова Елена Владимировна

(Россия, г. Нижний Новгород)

Профессор, доктор философских наук, заведующий
кафедрой философии и теологии

Нижегородский государственный педагогический
университет им. К. Минина

E-mail: egik37@yandex.ru

ORCID ID: 0000-0003-3093-2602

Ланская Ирина Алексеевна

(Россия, г. Нижний Новгород)

Кандидат педагогических наук, доцент кафедры
языкознания и иностранных языков

Российский государственный университет
правосудия (Приволжский филиал)

E-mail: lanira07@mail.ru

ID ORCID: 0000-0002-6090-0823

Козлова Татьяна Александровна

(Россия, г. Нижний Новгород)

Преподаватель кафедры философии и теологии
Нижегородский государственный педагогический
университет им. К. Минина

E-mail: egik37@yandex.ru

ORCID ID: 0000-0001-8614-781X

Information about the authors

Elena V. Gryaznova

(Russia, Nizhny Novgorod)

Professor, Doctor of Philosophy, Head of the
Department of Philosophy and Theology
Kozma Minin Nizhny Novgorod State Pedagogical
University (Minin University)

E-mail: egik37@yandex.ru

ORCID ID: 0000-0003-3093-2602

Irina A. Lanskaya

(Russia, Nizhny Novgorod)

PhD in Pedagogical Sciences, Associate Professor of the
Department of Linguistics and Foreign Languages
Russian State University of Justice
(Privolzhsky Branch)

E-mail: lanira07@mail.ru

ORCID ID: 0000-0002-6090-0823

Tatyana A. Kozlova

(Russia, Nizhny Novgorod)

Lecturer in the Department of Philosophy and Theology
Kozma Minin Nizhny Novgorod State Pedagogical
University (Minin University)

E-mail: egik37@yandex.ru

ORCID ID: 0000-0001-8614-781X