

## JUSTIFICATION OF THE VIRTUAL INDEX IN PHILOSOPHY

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**Abstract.** The article provides a philosophical justification for the concept of «index of virtuality», the use of the index method is the novelty of the study. The virtuality index acts, in the author's opinion, as a certain relative generalized indicator that serves to characterize the change in such a phenomenon as virtual reality. The basic components of the virtuality index are distinguished: immersion, involvement, interactivity. Immersion characterizes the coverage of the senses of a person who is in an artificially created environment. Involvement indicates the rational and emotional components of the mental sphere of a person. The user's interaction with an artificially created immersion environment reflects the interactivity indicator. Each of these values affects the value of the virtuality index. The author distinguishes two extreme cases: virtual realities with a low and high virtuality index. Virtual realities with a low virtuality index involve two main channels of human perception: vision and hearing, are characterized by minimal user involvement and weak interactivity. Virtual realities with a high virtuality index cover a large number of channels of human perception, have a high level of involvement and interactivity of the user, the events of the real and virtual worlds become indistinguishable for the user.

**Key words:** philosophy; virtual reality; virtuality index; low virtuality index; high virtuality index.

### INTRODUCTION

Despite the many publications related to the problems of virtual reality, this form of being is still insufficiently studied. The need for works focused on the philosophical understanding of virtual reality is still high, there is an urgent need to conduct research, the subject of which is the dynamics of virtual reality. It should be noted that the relevance of the topic of virtual reality has significantly increased in the context of the current COVID-19 pandemic, which has completely changed the familiar world. In order to adapt to the prevailing circumstances, many areas of human life have been transferred to a virtual format, and the digital transformation of the world has accelerated significantly. The aim of the scientific research is the philosophical

substantiation of the concept of "index of virtuality". The object of research is virtual reality. The subject of research is: the dynamics of virtual reality as a procedural interaction of a subject with an artificially created external environment. Achievement of this goal presupposes the formulation and solution of the main tasks: to reveal the philosophical content of the concept "index of virtuality"; to identify the components of the virtuality index, to characterize each of them, to schematize the virtual index, to outline the prospects for the further development of the virtual index.

Currently, virtual reality in science is being studied from the standpoint of several approaches. There are psychological, technical, socio-cultural, ontological approaches,

a detailed analysis of which was made by the author of the article and presented in his monograph [1].

The development of science and technology and their growing influence on the life of people make us consider the problems of a person's existence in the world, his knowledge of this world from a different angle. Modern devices, ranging from mobile phones and tablet computers, to the latest developments in the field of virtual reality, are focused on the physical basis of receiving information. The fact that the problems of the physical foundations of obtaining information, the presence of a person in immersive environments are more discussed by specialists in the field of computer and information communication technologies than by philosophers, seems to us, to say the least, paradoxical.

We adhere to an ontological approach aimed at studying the ontological nature of virtual reality, which makes it possible to carry out systemic generalizations of a content and conceptual nature. Note that among the array of works related to the problems of the virtual, practically no attention is paid to the development of such a basic ontological characteristic of virtual reality as movement, in general, and its dynamics, in particular. This study is devoted to the study of the dynamics of virtual reality, the author attempts to describe it using the index method, which is already original and constitutes the novelty of the study. The theoretical foundations of the study were laid by the author of the article, earlier he introduced the concept of "index of virtuality" into the scientific discourse, and also highlighted and determined the essential properties of virtual reality: "immersion" and "interactivity". The present study deepens the previously put forward author's original concept, presents further concretization and clarification of the author's concepts. The index of virtuality is already considered as some relative generalized indicator of the dynamics of virtual reality, which expresses the ratio of its basic components (immersion, involvement, interactivity).

In our concept, we consider virtual reality as the created impression of a person about being

in an artificially created world. The concept of "virtual reality" is defined by us as the created impression of a person about being in an artificially created world. It is emphasized that virtual reality does not entirely belong to either the sphere of subjective reality or the sphere of objective reality, it is a product of the interaction of subjective and objective components and is formed as a procedural interaction between a person and some artificially created technical means of the surrounding digital environment. Virtualization, i.e. the emergence and existence of virtual reality is a process of replacing reality with its simulation image, modeled by modern technical means. Events of virtual reality arise and are held in the zone of dialogue, in the space "between", they do not entirely belong to either side and as a result of the dialogue, the content of a specific virtual event is developed.

In the study, virtual reality is viewed as a dialectical unity of the objective and the subjective. The research carried out clarifies and concretizes the concepts necessary to describe the dynamics of virtual reality, expands the horizons of comprehending virtual reality, brings the problem of the virtual to a new theoretical and methodological level. The theoretical significance of the research lies in the fact that the formalization of the virtual index makes it possible to describe the dynamics of virtual processes, which is of great importance for the further comprehension of virtual phenomena. The practical significance lies in the use of the research results in the design and creation of immersive environments with a potentially high virtuality index for users. The scientific novelty of the research lies in the consideration of virtual reality from new methodological positions. The index method was used in the work, the extrapolation of the index method to the field of virtualistics provided new methodological possibilities and made it possible to identify and formalize the general laws of the dynamics of virtual reality. The author was guided by the principle of comprehensive consideration of the object under study, used such general scientific methods of cognition as analysis and synthesis, abstraction, formalization.

## THE VIRTUALITY INDEX AND ITS COMPONENTS

In science, an index is understood as a certain relative generalized indicator that expresses the ratio of the magnitudes of a phenomenon in dynamics [2]. We believe that the index of virtuality, in turn, can serve to characterize the change in such a complex phenomenon as virtual reality. In our works, we substantiate that virtual reality is formed as a procedural interaction between a person and some environment artificially created by technical means. We believe that virtual reality differs from any other ontologically similar formations in that it is the point of intersection and the overall result of its following basic components such as immersion-immersion, involvement-involvement, interactivity-interactivity. If we conventionally designate these components through their first letters: Im, Inv, Int, then the virtual index will be schematically represented in its most general form as a set of these components: Index VR = Im Inv Int. Note that each of these quantities makes its own contribution to the value of the virtuality index. However, based on the specifics of the user's stay in the virtual world in each specific case, the weight of an individual component in the virtuality index will be different. Taking into account this fact, the above pattern takes the following form: Index VR = Im<sub>m</sub> Inv<sub>n</sub> Int<sub>p</sub>; where the coefficients are m, n, p > 0. Let us dwell on each component of the virtuality index in more detail.

### *Im – immersion.*

Directly under immersion, we consider the embrace of the organs of sensory perception of a person who is in an artificially created environment. The main ones are visual, auditory, olfactory, gustatory, tactile sensations. This concept reflects the integrated synchronous activity of the user's perceptual systems when immersed in an electronic environment. Accordingly, virtual reality, covering the maximum number of perceptual organs, has a high degree of immersion, relies on a wide range of technical devices – simulators of the artificial world, among them: VR helmets and glasses, interactive boards and screens, tactile gloves, VR vests and suits, VR attractions.

Currently, VR clubs have appeared, which are gaining more and more popularity among users, they are actively rented by them for various events, in order to get new emotions from immersion in collective virtual reality.

Technologies for imitating touch or tactile sensations are currently developing quite successfully. Human interaction with the artificial environment is carried out either with a mouse equipped with a spatially controlled cursor, or with “digital gloves” that provide tactile feedback. The movements of the user's hands and fingers are read by gloves or other position tracking systems, the more accurately technical systems reproduce human movements, the greater the immersion effect. The system that provides a full range of tactile sensations in an artificially created world is a virtual suit, which is a tight-fitting jumpsuit equipped with multiple sensors that track the movements of all parts of the body.

At the moment, the pandemic situation caused by the spread of coronavirus infection has triggered an extraordinary surge in interest in virtual travel. Of course, virtual reality cannot yet replace traditional travel, but suits with enhanced sensory sensations provide a high degree of user immersion in a virtual tour of the sights of the world [3]. Virtual reality technologies are already influencing not only distant and contact organs of human perception, but also deep sensitivity receptors (proprioceptors). Thus, hardware devices successfully transmit muscular inertial and vibrational sensations to a person. The next step in virtual reality technologies will be interoceptors: currently controlled microscopic electronic mechanisms are being tested, which are supposed to control metabolic processes in human internal organs. Among the publications of recent years, devoted to technical means of virtual reality, we note the monograph by S. Gringard, which provides an overview of the existing arsenal of virtual technologies and outlines possible directions of their development in the future [4].

Despite all the advances in modern technology, virtual reality has become widespread among users, covering only two channels of perception: sight and hearing. In this budget option, we also see virtual reality, but

with a low degree of immersion. However, this version of virtual reality is now quite in demand and competitive. So, J. Lanier draws attention to the fact that the user may often think that he, touching virtual objects, feels their texture, while there is no stimulation of the tactile receptors. The reason lies in the fact that human consciousness tends to finish building an illusory world to a holistic image [5].

In this regard, let us touch on the concept of "synesthesia", which first appeared in science more than a hundred years ago and was unusually actualized in the realities of the digital world. In neurophysiology, the phenomenon of synesthesia refers to the inherent ability of a person to perceive, when irritation of one sense organ causes a reaction in another sense organ, which was not directly stimulated. Since the brain operates with holistic images, and not with individual fragments, it has the ability to complete the picture of perception. Thus, a synesthete can hear a voice and at the same time see it as a color or a shape, feel its characteristic scent or physical touch. Among the works devoted to this difficult to express, but clearly experienced phenomenon, we note the works of R. Saitovik, thanks to which scientific interest in synesthesia is revived and it again becomes the subject of discussion after decades of oblivion. So, R. Saitovik notes the uniqueness of human perception ability, believes that the study of synesthesia is a way to solve the difficult problem of consciousness and understanding and principles of the functioning of the brain [6]. Thus, in virtual reality, synesthesia can be viewed as an integrative function of the brain that compensates for the incomplete perception of a virtual object.

The substitution of direct perception of the world is carried out by broadcasting specially selected auditory, visual, tactile sensations to a person, transmitted using special devices. The formation and development of a perceptual image of virtual reality appears as a dynamic process determined by external and internal factors, unfolding in the context of a certain space and time. In view of the imperfection of existing technologies, a person realizes that this situation is the result of an impact on his sense organs. The absence of a border between the perception of the real and the virtual world is

still an ideal, the achievement of which is a matter of time.

It is necessary to identify a significant difference between the concept of «immersion» and «involvement». In the case of involvement, we are no longer dealing with the impact of hardware on a person, that is, with the use of a computer. not with his sensory perception, but with the rational and emotional components of the inner world of a person, that is, we are already increasingly shifting to the sphere of the ideal.

#### *Inv – involvement.*

It is defined by us as an emotionally-colored psychological state of the user that is stable over time, which is characterized by his consistently high concentration of attention on virtual objects and events. User involvement in virtual reality also implies that the user is so focused on the events of the virtual world that he is ready to spend indefinitely in it. There is a kind of time-wasting effect. Involvement is characterized both by the intensity of the user's attention to the objects of the virtual world, and by its immunity to interference, which is expressed in the ability to resist involuntary distractions from the virtual world caused by the action of various interference-stimuli. Engagement requires physical, mental and psychological energy from the user of the virtual world to spend on experiencing the events of the virtual world. The phenomenon of involvement is a kind of indicator of user satisfaction with the virtual world; it shows how much he likes the virtual world, that he is willing to voluntarily give him his time and energy resources. The involvement of even one user during one session of interaction with the virtual world can vary and range from more than zero to one hundred percent. The width of the range of changes in user engagement over time, in turn, can also be a certain indicator of his relationship to the virtual world. The essential point is that different users have an unequal degree of involvement in the virtual world of the same functional and technical characteristics. You can try to represent the user's involvement in the virtual world in quantitative and qualitative terms. Thus, quantitative characteristics can reflect how much time the user spends in the

virtual world, how often he visits it. Qualitative characteristics demonstrate the effectiveness of user actions in the virtual world.

In this regard, the emergence of such a variety of virtual reality as "cinematic virtual reality" is of considerable interest, already designated by some researchers as the leading direction in the development of VR technologies for the next thirty to forty years. In this direction, the latest technological advances in the field of virtual reality and existing cinematic practices are organically intertwined. It is worth noting that, indeed, due to the novelty and rapid development of virtual reality technologies, many important aspects have been overlooked. Currently, when creating virtual products, the accumulated experience of filmmaking is taken into account, filmmaking is actively used, close attention is paid to the script, its form and functions, that is, what was previously in the background. So, in his works J. Matir focuses on the mechanisms of purposeful involvement of the viewer in virtual reality [7]. Effective user engagement in the virtual world is the effective use of drama and surprise. In this regard, S. Bouchard's work "Anxiety enhances the sense of presence in virtual reality" is interesting; the virtual world [8]. The user's involvement with virtual events is closely related to the establishment of the effect of human presence in the artificially created world [9, 10]. In this context, in turn, the concept of "suspension of disbelief" introduced by S.T. Coleridge at the beginning of the 19th century, in the reasoning of the English romantic poet about the charm of poetry, reality and fiction are intertwined in a bizarre way [11]. In the XXI century, the initial meaning of this concept was significantly expanded, now it is used to fix the state when the user, accepting the assumptions of the virtual world, ceases to feel its illusory nature. Involvement of the user in the illusory world is carried out by purposeful "suppression of disbelief." To achieve the desired effect, "cinematic virtual reality" focuses on those moments that seem simple and obvious at first glance. In cinematic virtual reality, the following are considered in detail: the rules of interaction between the user and the environment should be clear, navigation should be simple and intuitive, movement in the

environment should be smooth, with a gradual increase or decrease in speed, all of the above will allow the user to move without distraction from virtual events, which he is captured [12, 13].

### *Int – interactivity.*

Note that the overwhelming majority of researchers in the analysis of virtual reality quite justifiably single out such an essential property of it as "interactivity". Undoubtedly, the property of "interactivity" is one of the main characteristics of the virtual world, which determines its ontology. So, many manifestations of things in reality, which are mistakenly defined by some scientists as virtual, are not such due to the lack of interactivity. Interactivity in virtual reality indicates the process of interaction between the user and the environment, their mutual influence on each other, which, as a result, determines the specifics of the course of the virtual action. The user can enter a virtual reality artificially created by computer means, contact with other people in it, transform it, while experiencing sensory and emotional experiences that are indistinguishable from real ones. At the same time, feedback is needed so that the virtual environment itself is malleable, responsive to the user's influence. Interactivity is something more than just a user's navigation on the network, it is his ability to control the electronic environment in real time, to be a participant in the formation of its form and content. The key factors that determine interactivity include the range of possibilities for the action of the subject of virtual reality, as well as the speed of reaction of the electronic environment and its resistance to impact.

We note that "interactivity" is one of the main specific features of virtual reality. The user has the opportunity to penetrate into an environment artificially created by computer means, transform it, contact in it not only with other people, but also with virtual characters, while experiencing emotional experiences and sensations indistinguishable from real ones.

An example of such virtual reality is also computer-technical virtual reality, which includes virtual reality that occurs in the process of communicative network interaction. In this case, the interactive environment is a social

communication virtual environment that creates an artificial image of the real world and gives a person a comfortable illusion of being-in-the-world together with Others, for example, in various social networks. Interactivity is the main component of new media technologies. The term "new media" itself appears at the end of the twentieth century with the advent of digital, computer, information, network technologies and communications. New media are digital and interactive. Interactivity is a consequence of the incredibly fast growth of access points to the Internet space and the process of digitalization of media and media convergence. Digitalization is understood as the translation of the content of communication into a digital format, which levels the boundaries and removes such a barrier as the delivery time of the message. In the foreground of new media today are various social networks, which allow their users to establish communication relationships, acquire unique experiences, and ultimately create their own virtual reality around them. Virtual reality always presupposes interactivity as an interaction with a simulated environment (with the "Other"), felt through the resistance of the environment and its expectation of the user's response, i.e. the environment resists the person, and the person resists the environment.

The number of regular users of communicative network interactions is currently in the millions. Initially, virtual communication was aimed at building communities of people with similar interests and activities. However, it was noticed that virtual communication, in addition, performs a side specific function - existential, since many active users have long been accustomed to spending most of their free time in virtual communication and have become "inhabitants" of the network, living life in another world.

#### HIGH AND LOW VIRTUALITY INDEXES

Based on the above, we can distinguish virtual realities with a high and low virtuality index. The formula  $Index\ VR = Imm\ Invn\ Intp$  has two limits Low-Index VR and High-Index VR. Between these extreme expressions are virtual realities with an average virtuality index.

#### *Virtual reality with a Low-Index VR.*

Virtual reality with a Low-Index VR in a generalized form is represented as follows:  $Low-Index\ VR = Im_2\ Inv_{min}\ Int_{min}$ . Virtual reality of this type involves only two main channels of perception: vision and hearing, characterized by minimal user involvement and weak interactivity. A person who interacts with such a reality describes it as a non-real environment created by hardware. The user treats virtual reality as an outside observer, realizes that he is interacting only with an artificial simulation of the real world, and his focus on virtual objects and events is relatively low.

#### *Virtual reality with a High -Index VR.*

Virtual reality with High-Index VR in a generalized form, we will express this way:  $High-Index\ VR = Im_{max}\ Inv_{max}\ Int_{max}$ . In such virtual realities, a large number of human perception channels are involved, and a high level of user engagement and interactivity is observed. Here, the observer's position, external to the environment, is leveled, and the user's focus and reaction to the objects of the virtual world are high. For example, users deviate from objects flying at them, or try to touch objects in the virtual world as if they really existed. The events of the real and virtual worlds become indistinguishable for the user.

Among the virtual realities with a high index, there are also those where a minimum of perception channels are involved. The low level of immersion in them is compensated by a high level of engagement and interactivity. High engagement can be provided by high-quality content and quest technologies that form the basis of the virtual world. Well-thought-out content and organization of events in the virtual world can effectively engage the user; monopolize his consciousness, which we had the opportunity to observe, in particular, during the user boom of the game Rockemop Go.

The high virtuality index of Pokémon Go is achieved through a high degree of engagement and interactivity. The game is based on the so-called quest technology. In a quest, a task is always assumed in which you need to find

something: an object, a hint, a message in order to move on. If we talk about the technical features of the game Pokemon Go, then the software developers for the first time managed to effectively combine mobile technologies: mobile Internet, satellite GPS navigation, digital camera. As a result, a game action unfolds on a real map of the area in the scenery of the surrounding world with the help of a mobile Internet and a digital video camera: catching Pokemon in real time. In the case of the Pokémon Go app, the main task for the user is to find and catch Pokémon. At the same time, a thorough examination of the real world has become a necessity in this game for the further advancement of the user. The creators of the game conceived so that Pokemon can live anywhere: in the user's apartment, on a busy avenue of the street, in a diner, for more rare species of Pokemon, you need to arrange whole expeditions to parks, to industrial areas, or even go out of town to the forest and to water bodies. The high degree of involvement in Pokémon Go has many testimonies that for users this game becomes a real adventure in the scenery of the real world. So, in pursuit of Pokémon, people wander into hard-to-reach places, fall off cliffs, and get into traffic accidents, etc. [8].

The boom in the game Pokémon has already passed, but the popularity of the game is still high, if you think about the prospects for the development of virtual realities with a high index, you can expect that a large number of applications, such as Pokemon Go, will appear on the market in the very near future due to their high demand and unprecedented commercial efficiency. As you can see, the emergence of the new game Pokémon Go did not leave anyone indifferent in the world. Before that, no computer application had become so "viral", did not cause such a violent reaction in society and on such a global scale: not only in a single country, but also at a global level.

### CONCLUSION

Based on the research done, the following conclusions can be drawn:

1. The index method, which dominates in the field of statistical research, based on the use of indices that measure complex socio-

economic phenomena, can extend beyond its traditional applicability and be used to study the characteristics of changes in virtual reality. The extrapolation of the index method to the field of virtualistics creates new methodological opportunities, in particular, it allowed us to identify and formalize the general patterns of the dynamics of virtual reality.

2. The virtuality index acts as a relative generalized indicator that serves to characterize changes in such a phenomenon as virtual reality. The basic components of the virtuality index are highlighted: immersion, involvement, interactivity.

3. By immersion, we mean the coverage of the sensory perception organs of a person who is in an artificially created immersive environment. Virtual reality, which covers a large number of perception channels, has a high degree of immersion.

4. Involvement is defined by us as a stable over time emotional-colored psychological state of the user, which is characterized by its consistently high concentration of attention on virtual objects and events. The user's involvement in the virtual world can be represented in quantitative and qualitative terms. So, quantitative characteristics can display how much time a user spends in the virtual world, how often they go there. Qualitative characteristics demonstrate the effectiveness of user actions in the virtual world.

5. Interactivity indicates the process of interaction between the user and the environment, their mutual influence on each other, which as a result determines the specifics of the virtual action. Interactivity can be measured and quantified, for example, it can be represented as the number of user and environment interactions per unit of time, the rate of reaction of the electronic environment to the impact, etc.

6. The index of virtuality can be schematically represented:  $\text{Index VR} = \text{Im Inv Int}$  (where: Im-immersion, Inv-involvement, Int-interactivity). Based on the specifics of the user's stay in the virtual world in each specific case, the weight of the individual component in the virtuality index will be different, then the above pattern takes the following form: Index

VR = Imm Invn Intp; where the coefficients  $m$ ,  $n$ ,  $p > 0$ .

7. We distinguish two limiting cases: virtual reality with (Low-Index VR) low and (High-Index VR) high index of virtuality. In the first case, for the user, the boundary between the real world and its artificial simulation is obvious, in the second case, the person is captured by the virtual world so much that he perceives it as real. Between these extreme expressions are virtual realities, where the virtuality index takes an intermediate value.

#### REFERENCES

1. **Elkhova O. I.** Virtual Reality Ontology. Ufa: BSU, 2011. 228 с.
2. **Encyclopedia** of statistical terms. Vol. 1. Methodological foundations of statistics. Moscow: Rosstat, 2011. Pp. 86-102.
3. **Chen A.** Is virtual travel here to stay, even after the pandemic subsides? [Electronic resource]. URL <https://www.nationalgeographic.com/travel/2020/04/can-virtual-reality-replace-real-tourism-during-pandemic-and-beyond/> (accessed 24.06.2021).
4. **Greengard S.** Virtual Reality: The MIT Press Essential Knowledge series (Kindle Edition). USA: MIT Press LTD, 2019. 264 p.
5. **Lanier J.** Information is an alienated experience. N.Y.: Basic Books, 2006. 258 p.
6. **Cytowic R. E.** Synesthesia. The MIT Press Essential Knowledge series. Cambridge: The MIT Press, 2018. 288 p.
7. **Mateer J.** Directing for Cinematic Virtual Reality: how the traditional film director's craft applies to immersive environments and notions of presence // Journal of Media Practice. 2017. Vol. 18, Iss. 1. Pp. 14-25.
8. **Bouchard S.** Anxiety Increases the Feeling of Presence in Virtual Reality // Teleoperators and Virtual Environments. 2008. Vol. 17, No. 4. Pp. 376-391.
9. **Heeter C.** Being There: The subjective experience of presence // Presence: Teleoperators and Virtual Environments. 1992. Vol. 1, No. 2. Pp. 262-267.
10. **Gumbrecht H. U.** Production of presence: what meaning cannot convey. Stanford, California: Stanford University Press, 2004. 179 p.
11. **Kolridzh S. T.** Izbrannyye trudy. Moscow: Iskustvo, 1987. 347 p.
12. **Bennett B.** The normativity of 3D: cinematic journeys, "imperial visuality", and unchained cameras // Jump Cut: A Review of Contemporary Media. 2013. Vol. 55. Pp. 1-23.
13. **Ross M., Munt A.** Cinematic virtual reality: towards the spatialized screenplay // Journal of Screenwriting. 2018. Vol. 9, No. 2. Pp. 191-209.
14. **Koerber B.** Two men fall off a cliff playing "Pokemon Go". [Electronic resource]. URL <https://mashable.com/article/pokemon-go-fall-off-cliff> (accessed 24.06.2021).

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#### МЕТАДААННЫЕ

**Заголовок:** Обоснование виртуального индекса в философии.

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**Аннотация:** В статье дается философское обоснование авторского понятия «индекс виртуальности». Индекс виртуальности выступает в концепции автора как некоторый относительный обобщенный показатель, служащий для характеристики изменения такого явления, как виртуальная реальность. Автор выделяются основные компоненты индекса виртуальности: погруженность, вовлеченность, интерактивность. Погружение характеризует охват органов чувств человека, находящегося в искусственно созданной среде. Вовлеченность указывает на рационально и эмоционально составляющие внутреннего мира человека. Взаимодействие пользователя с искусственно созданной иммерсионной средой отражает индикатор интерактивности. Каждое из этих значений влияет на значение индекса виртуальности. Автор выделяет два крайних случая: виртуальные реальности с низким и высоким индексом виртуальности. Виртуальные реальности с низким индексом виртуальности задействуют два основных канала человеческого восприятия: зрение и слух, характеризуются минимальной вовлеченностью пользователя и слабой интерактивностью. Виртуальные реальности с высоким индексом виртуальности охватывают большое количество каналов человеческого восприятия, имеют высокий уровень вовлеченности и интерактивности пользователя, события реального и виртуального мира становятся для пользователя неразличимыми.

**Ключевые слова:** философия; виртуальная реальность; индекс виртуальности; низкий индекс виртуальности; высокий индекс виртуальности.

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