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TÍTULO: Delitos en realidad virtual.

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RESUMEN: Este artículo analiza el fenómeno de la "realidad virtual" y su influencia en la transformación digital de la sociedad moderna de interacción social. Por separado, los autores analizan los problemas de los delitos cometidos con la ayuda de la tecnología de realidad virtual y sus calificaciones. Los autores sostienen, que como parte del desarrollo de la tecnología de realidad virtual, hay espacio para los efectos manipuladores sobre las emociones y la conciencia de la víctima y el efecto psicoemocional es comparable en fuerza al efecto de los eventos en el mundo real; sin embargo, muchos actos criminales que requieren contacto con la víctima ahora se pueden realizar de forma remota.

PALABRAS CLAVES: Realidad virtual, delincuencia, tecnología de la información.

TITLE: Crimes in Virtual Reality¹.

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ABSTRACT: This article discusses the phenomenon of “virtual reality” and its influence on the digital transformation of the modern society of social interaction. Separately, the authors analyze the problems of crimes committed with the help of virtual reality technology and their qualifications. The authors argue that as part of the development of virtual reality technology, there is room for manipulative effects on the emotions and consciousness of the victim and the psycho-emotional effect is comparable in strength to the effect of events in the real world. However, many criminal acts requiring contact with the victim can now be performed remotely.

KEY WORDS: Virtual Reality, Crime, Information Technology.

INTRODUCTION.

Information technologies have completely changed the modern world, and the digitization of social relations drastically change the landscape of interaction between people, the nature and direction of social reality, which, according to many researchers, becomes post-social or post-humanitarian [1; 2].

Currently, information technologies are firmly included in our public and private life, help us in our work, leisure, parenting, provide us with the necessary information and data for making important decisions, organize and control our activities, help in ensuring justice (digital forms of justice in many European countries), order, and law. The main incentive for the introduction of any information technology is the ability to make the world around us safer, more interesting, more comfortable, and more accessible. Much further, in this sense, the class of digital technologies has

advanced, both improving our world and creating new virtual worlds for work, games, and social interaction.

Virtual reality technology has a huge and not yet fully implemented potential for changing the existing practices of life, production, and education. There is a lot of digital twins of real spaces and objects accumulated, which contributes to the dynamic digitization of the world. Such virtual environments can be designed for specific tasks, public and personal interests, and needs. In addition, the virtual world can adapt to the needs of the user and change depending on the tasks to be solved.

Data building technologies for digital environments that model and create digital copies of existing objects, or create fundamentally new ones that have no analogs, in reality, are commonly referred to as virtual reality technologies. Today, virtual reality technologies blur the line between the reality we are used to and its digital embodiment, drastically changing both the various spheres of society and the traditional forms of human interaction.

DEVELOPMENT.

Conceptual framework.

Although the above-mentioned technology is quite popular in technical literature and media, it is rather difficult to formally define the concept of “virtual reality”. There are a number of reasons for this.

Firstly, this technology, or to be more precise, a whole class of technologies, develops extremely quickly and has “fluidity”, intertwines with other digital technologies, moves fairly quickly from one application to another [3]. Therefore, the scope of this modern phenomenon is quite difficult, and sometimes impossible to describe.

Secondly, the term “virtual reality” is widely used in philosophy and psychology to refer to any fictional (speculative) worlds as opposed to the real world. As some authors note, “most often BP is characterized by modern researchers either as a world of ideas (or symbols, or even simulacra) or as

some special content of consciousness” [4, p. 162]. In these terms, the information space of the Internet represents a virtual reality, like the world created in a work of art.

This research uses the narrow definition of the term “virtual reality” as an information technology with special properties. For example, we can use the following definitions given in the scientific literature on the humanities, where virtual reality is often understood as “technically constructed using computer-assisted interactive environments; as the generation and operation of objects, real or imaginary, on the basis of their graphical representation, simulation of their physical properties and the ability of influence and independent presence in space, as well as the creation of such objects by means of special computer equipment” [5, p. 191].

Overview of approaches.

Technical Internet publications define virtual reality as “the world created by technical means, transmitted to a person through his sensations: sight, hearing, smell, touch, and others. Virtual reality imitates both impact and reaction to impact” [6]. For example, if a user wears a virtual reality helmet and uses driving simulation software, then he will see a computer simulation of the view from a race car seat. By controlling the steering wheel, which he holds in the real world, the user can influence the object of the virtual world. That is, the picture will simulate driving a car in accordance with the user's steering.

Despite the difficulty of defining the term “virtual reality” (hereinafter - VR), even in the narrow sense, there are several immanent signs inherent in VR. First, VR is a model or simulation of the present, or the fictional world (environment). This distinguishes it from another term “augmented reality”, where computer-constructed objects are introduced into the real world [7]. Secondly, it is a computer simulation (digital). Thirdly, such a simulation should, to some extent, create for the user (or a group of users) a sense of the reality of the world through feedback, realistic movements, or other means.

At the same time, virtual reality is, above all, an environment of social interaction in various forms. At present, the use of VR for gaming prevails; the use of VR for business and personal meetings is growing [8]. Using VR to organize business meetings, multiplayer game modes imply at least audio and video contact. In the virtual world, a person is often seen by other users as a human-like avatar (in the virtual reality environment, an avatar is a three-dimensional graphical representation of a VR user), whose appearance may reflect features of a user's appearance, or it may be completely different (for example, they may be of the opposite sex). Although the voice and appearance in the virtual world can be changed, this does not exclude the possibility that actions in the digital space through verbal and visual contact can cause real harm.

Modern studies distinguish verbal offenses as a separate criminological category. At the same time, the substantive part of the objective side of verbal crimes actualizes the method of committing a crime in the form of verbal representations. They can be recognized both as a tool and a means of achieving a criminal result [9, p. 35]. That is, the transfer of a message becomes an obligatory element, since, according to the nature of the crime, this is an essential factor for the public danger. Thus, with the help of VR technology, it is possible to commit a whole range of crimes from “slander” Art. 128.1 of the Criminal Code of the Russian Federation to “public calls for terrorist activities or public justification of terrorism” [10].

The widespread use of the virtual computer environment for social interaction creates a classic contradiction between the need for free information sharing and the expansion of tools for this, as a factor of economic growth, and the need to impose restrictions on the free use of certain types of information - as a factor of state and public security [11].

Main part.

Recognizing the possibility of committing a crime using virtual reality technology, we face a number of factors that complicate the investigation of such delicts.

First, it is the difficulty of determining jurisdiction. The specificity of virtual reality is that almost all modern VR applications are an attempt to recreate a holistic world or environment, a virtually holistic world, actually located in different jurisdictions. Physically, most virtual reality platforms are located abroad and served by foreign legal entities outside of Russian territorial jurisdiction.

Part 3, Art. 12 CC RF establishes that foreign citizens and stateless persons who do not reside permanently in the Russian Federation and have committed a crime outside the Russian Federation, are subject to criminal liability under the Criminal Code of the Russian Federation in cases where the crime is directed against the interests of the Russian Federation or citizens of the Russian Federation or against stateless persons permanently residing in Russia. In addition, extraterritorial jurisdiction may be provided for by an international agreement concluded and ratified by the Russian Federation. In practice, criminal cases are not initiated in every case, even if there is a basis. If a crime scene, a criminal, or evidence of a crime is located abroad, the possibilities of the investigation become severely limited [12].

Secondly, one of the principles of cyberspace is anonymity, which, firstly, provides advantages for all forms of criminal fraud and deception. Anonymity and impersonality allow a criminal to take on a different person, to flee from justice, to remain outside public censure and condemnation, giving rise to a feeling of impunity and security.

Thirdly, it is a wide media reach. This factor is decisive for the virtual world, which user can be any person with Internet access.

The above challenges, both from a criminological and criminal point of view, are quite common. From this point of view, VR is just another computer technology that creates problems for the law enforcer. A unique characteristic of VR as a means of achieving a criminal result is the ability of such a virtual environment to create the illusion of realism for the user or manifest itself in the form of consequences in the real world.

Experiments show that users of virtual reality may be afraid to approach the edge of a virtual high-rise building, demonstrating the same psycho-emotional reactions similar to those in the real world.

Dizziness, nausea, stomach pain, shaking hands - here is an incomplete list of reactions to virtual heights [13]. As some foreign researchers note, the feelings caused by what is happening in VR, in turn, can have real physical consequences. The user may be literally scared to death (or, at least, to a state of heart attack) with a game where he feels quite real. Even if the user is not physically injured, it can be a serious stressful test difficult to reconstruct on the Internet or in a video game without using the VR environment [14].

This property of virtual environments has its own positive application, for example, there are successes in using VR to combat autism [15] or in psychotherapy of phobias [16]. At the same time, this is an unprecedented chance for hackers or other cyber attackers to “crack” the victim's emotions. Previously, cybercriminals only had access to the property, business reputation and other obvious values for crime victims, now they can literally get into the victim's head.

The virtual world provides certain advantages in the context of the variation in provoking psycho-emotional reactions. In the real world, it is economically expensive and difficult to organize a man's fall from the edge of the Grand Canyon, a monster attack from a science fiction film or a harem with 100 beautiful concubines. VR creates an opportunity for effective manipulation of consciousness and emotions since the plot is limited only by the imagination of the developer. Recent studies show that with the help of a virtual environment, you can trigger almost any emotion lasting up to 8 minutes [17].

Russian criminal law includes elements of crimes that directly or indirectly imply psycho-emotional pressure on the victim. VR can be a more effective means of achieving criminal goals in the real world. For example, the involvement of minors in the commission of acts that represent a danger to their life, Art. 152. 2 of the Criminal Code of the Russian Federation may be committed in virtual reality, where the minor will carry out such actions with a constantly favorable outcome.

In the same way, “death games” can be materialized, which are often qualified as an organization of activities aimed at encouraging the commission of suicide [18]. VR can help criminals to suppress the will of a minor, to intimidate him, to overcome the fear of the victim to commit suicide.

Numerous studies prove that virtual reality is an excellent means for manipulating the psycho-emotional state of a person [19], especially when using gamification [20].

The development of software and hardware affects the increase in the realism of the developed virtual worlds. This is expressed in the degree of detail of the objects of the virtual world, the mechanics of the interaction of objects of the virtual environment, the implementation of the interaction between the user and objects of VR, and in many other things. As some studies show, greater realism means a more significant psycho-emotional user response to what is happening in the computer environment.

According to foreign researchers, the frequency of using VR for social interaction will grow rapidly. According to some forecasts, the number of virtual reality users will reach 170 million worldwide this year. In recent years, there has been a twofold increase in the number of people using VR [21]. It is possible to predict the growth of crimes committed in the virtual reality environment since this was observed when the number of Internet users grew. Many of the researchers have identified the spread of the use of the global network as the main factor in the growth of the number of cybercrime [22], hence the number of criminal acts in VR should increase due to the growth of VR users.

Another feature of VR that can create new opportunities for criminals is the integration of real environments with devices able to affect the user in the real world. For example, for several years already one of the most rapidly growing segments of the virtual reality system market has been “teledildonics” [23]. Since there is no definition of this term in the scientific literature [24], we refer to the definition given on a publicly available resource. Wikipedia defines teledildonics as “a technology used for remote sex, in which tactile, temperature and other sensations are transmitted between partners through a two-way communication line. It is implemented using a computer-controlled electronic sex toy that complements telepresence technology with a sense of sexual contact” [25]. The wide distribution of this technology means that a hacker could potentially get involved in unauthorized intimate contact.

Some foreign authors note that the substitution of a partner in sexual intercourse or unlawful access to the body of a virtual reality user through an intimate communication interface contains signs of crimes against sexual freedom. In foreign scientific literature in the field of law, such an intentional act is considered either as sexual harassment or as rape [26].

Since there is no sexual intercourse, from the point of view of Russian criminal law such actions should be qualified as violent acts of a sexual nature according to Art. 132 CC RF, and not rape according to Art. 131 CC RF [27]. A person with respect to whom sexual actions were committed through virtual reality, since he/she may not immediately realize that unauthorized actions, finds him-/herself in a helpless situation, because the victim could not understand the nature and significance of the actions performed, or resist the guilty person.

The practice of law enforcement understands the helpless state in the context of Art. 132 of the Criminal Code of the Russian Federation most often as the state of alcoholic or narcotic intoxication, but as some authors note, “decisive is the fact that the victim in such a state is unable to realize what is happening and to resist, and this is covered by the intent of the perpetrator, allowing him to perform sexual intercourse against the will of the woman” [28]. The first attempts to break into virtual sex devices were made in 2015 [29]. As some cybersecurity experts say, “most devices for sex technology and related software are terrible in terms of confidentiality and often security” [30].

Thus, as a result of the development of virtual reality technology, hackers have access not only to the psyche but also to the body of potential victims. It is tough to say whether the commission of violent sexual acts in a virtual environment is comparable to the damage caused to the victim in the real world, but it will be more difficult to bring such a criminal to responsibility. In addition, for the criminal, this means a significant reduction in risk when committing the act.

Also, the spread of so-called "feedback" suits causes a risk of an increase in crimes related to causing harm. Such technologies are based on electrostimulation, transmitting to the user "notifications" in the form of a physical effect about what is happening to him in the real world. At

the moment, the permissible power of such effects on such technologies is not regulated, and the degree of pain depends on the individual characteristics of the person. Accordingly, there is a risk of causing real harm from a strike in virtual reality. Currently, there are only prototypes of such suits, but their mass distribution is a matter of the near future.

We also note that the complexity of regulation and regulatory coding of VR is also related to their anonymous nature: *first*, they are the product and object of human activity; people who create, program, and exploit these *objects*, lay the value-rational, moral and emotional psychological components in the initial code of the latter; *secondly*, the digital algorithms the VR is built on act as new “subjects of history”, since they fundamentally influence human interactions, are intermediaries and participants in digital relations.

The above is especially characteristic of modern and future security systems using these technologies and autonomous algorithms as both objects entailing most risks and threats to national and international security, and subjects that protect vital interests, infrastructure facilities, etc. On the other hand, digital technologies are also the object of terrorist threats and autonomous terrorist actors carrying out digital unlawful strikes.

CONCLUSIONS.

Summing up, we shall note that currently people, algorithms, and digital technologies together form the modes of operation, participate in ensuring the regime of legality and the rule of law, create specific relationships, forms, and methods of interaction of a completely different structure and character.

All this is a challenge to the legal community, which should not only carry out the conceptual and legal framework of the categorical and conceptual apparatus, form legal definitions and doctrinal and legal bases for regulating the processes of development, implementation, and operation of innovative digital technologies, but also the perfections of the legal technique that ensures fixation and regulatory coding relationships in the digital age.

We also state that virtual reality technology provides the criminal with completely new possibilities. First, VR allows manipulating the emotions and consciousness of the victim at a completely new level. The psycho-emotional effect is comparable in its power to the effect of events in the real world, at the same time it can be achieved remotely via the Internet. Secondly, due to the integration of real-world devices into the virtual environment, the consequences of actions in VR extend to the real world. This means that many criminal acts that implied contact with the victim can now be performed remotely.

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