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Cyberspace as a New Existential Dimension of Man

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Abstract

Since the second half of the twentieth century, especially from the 1990s to the present, we have seen significant sociocultural changes that have mostly been influenced by information technology. In the area of information technology, it is mainly the Internet that is the essential part of all modern communication technologies such as smartphones, iPads, and so on. The Internet is a new communication space, also called cyberspace, in which we not only communicate but also work, learn, buy, have fun, and so on. It does not seem to be a mere “tool” of our new way of communication, but a dimension that becomes part of our existence. We then have to ask how our existence is changing under the influence of new technologies. How do we change the value system in cyberspace communication? What are the possibilities and risks of communication in cyberspace? These are just some of the issues that arise in connection with communication in cyberspace to which we will seek answers. In the chapter we use the phenomenological and hermeneutic method. Through the phenomenological method, we examine the basic structure of cyberspace (Clark, Ropolyi) and, using a hermeneutic method, examine the differences between communication in cyberspace and old media (Lohisse, Postman, Bystřický).

Keywords: cyberspace, communication, existence, information, time, space, thinking

1. Introduction

In the beginning of the chapter, we want to clarify the concept and basic structure of cyberspace. The term cyberspace was used for the first time in 1984 by a sci-fi writer, Ford Gibson, in his novel *Neuromancer*. The etymology of this word reveals that it describes a cybernetic space that is not identical with three-dimensional physical space; it is a place that merely simulates the real one. Simulations may be visual or acoustic but also more sophisticated, for example tactile, when a special pair of sensory gloves is used. Cyberspace is constructed using communication technologies, particularly the Internet. Sometimes cyberspace and the Internet are understood as identical places. However, we think that the term cyberspace embraces more than just the Internet. We agree with D. Clark [1], who notices that we need to use the word cyberspace even in connection with discovery of telegraph. Two people in two different points on the globe enter the acoustic communication space that does not share three dimensions. However, modern media offer a superior kind of cyberspace—the Internet—that we can use to communicate not

only acoustically but also visually, through services such as skype, for example. We also need to distinguish cyberspace from other kinds of space, for example, social, economical, or mental space.

We should also distinguish cyberspace from virtual reality. The term “virtual reality” is used to describe something artificial, constructed, or less real. In contrast, cyberspace does not necessarily mean something unreal. When we make a phone call or use skype to communicate with somebody, we do not take it as something virtual, despite the fact that this communication takes place in cyberspace. Another difference is also in the sense of emphasis. Virtual reality emphasizes reality, while in the case of cyberspace, it is the actual place that we emphasize. Though the term reality incorporates also space, it spreads even further and gets closer to the philosophical term of being—existence or possible existence. Based on understanding such elementary terms as reality and space, the terms of virtual reality and cyberspace are derived from them. The meaning of virtual reality will be defined by the relation between reality and virtual reality and that of cyberspace by the relation space-cyberspace.

D. Holmes [2], in reference to Ostwald, states that cyberspace means communication space of a number of people: “individuals do not exist in cyberspace, but in virtual reality.” In this case the term of cyberspace is limited to exist only for social communication. But why could not we call this space cyberspace, when all kinds of communication, individual or collective, happen in the same technological space? Why could not we call this space cyberspace, when all kinds of communication, individual or collective, happen in the same technological space? We believe we should think of cyberspace as of the traditionally understood physical space and not solely as something that we derive from social relationships; we should see it in a more contextual sense—in the sense of relations between objects. We borrow this term and use it to express the mental space in which we think and construct and then transfer our constructions into the technological world that could be properly seen as cyberspace.

In order to understand cyberspace better, it might be useful to learn more about its internal structure, or more precisely its hierarchy-based levels. According to Clark [1], there are four levels in cyberspace: physical level, logical level, information level, and human level.

The physical level of cyberspace is composed of physical devices that are interconnected. These are computers, servers, sensors, transmitters, the Internet, and communication channels. Communication “flows” between these technical devices through cables, optical fibers or electromagnetic waves. This physical level is the easiest to touch physically, especially devices, as they are easy to locate.

Cyberspace, according to Clark, is built from various components starting with the lowest level and ending with the highest one. The lowest level is represented by a program that performs basic operations, data transfer, and formatting. These services serve applications such as database or web. For example, by combining database and web, we get creative and active web content. On the top position of the web, we can find services such as Facebook, which is yet another platform for further applications. The essence of cyberspace lies in continual and rapid increase of possibilities and services that are based on creation and combination of new logical constructions. Cyberspace, as a logical level, then means a series of platforms for new creations and constructions that consequently become innovations. Cyberspace is very flexible and recursive, building platforms on further and further platforms.

Clark believes that creation, obtaining, and transfer of information are the essential functions of cyberspace. Information here takes various forms, for example, music, video, or websites. Information about information is generated here (metadata), and information that informs about other information is produced, for example, by Google. The character of information in cyberspace changed with

computers being connected to other computers; they started processing the structure of data. Data is saved not only statically on hard drives or USB memory sticks, but more and more it is created dynamically on networks, where physical localization loses its importance.

Clark sees the highest level of cyberspace in people, who are not only passive users but also contributors to the content that it offers. If people contribute to Wikipedia, then Wikipedia exists. If people tweet, then also Twitter exists. Cyberspace is meant to serve people, for communication, for a content that is constantly refreshed. This is the reason why people are the most critical component in cyberspace. Also Cocking [3] sees it similarly, when he claims that today people present themselves more and are more engaged in various activities with others through computer technology. We can also state that the Internet, or cyberspace, offers a great way to express oneself and communicate in a modern society [4].

Ropolyi [5] contemplates the Internet in similar intentions, though with small variations. Ropolyi understands the Internet as a complex, multilayered system in which four levels are identified: the technological, communicational, cultural, and organismic levels. Ropolyi says—with respect to the first level—that the Internet is a system of computers that are able to rapidly and securely access information inside the worldwide network. As a technological tool, the Internet is connected to other technological tools that support different human and social needs, ranging from shopping to international financial transactions. Ropolyi understands the next level of the Internet as a space for different types of communication. He believes that the Internet represents an active agent within such communication, as it only facilitates, prompts, and enables specific types and forms of communication. A range of content, including text, audio, and image, can be communicated over long distances thanks to the Internet. The third level, according to Ropolyi, is cultural, which must be understood in the widest possible sense and which contains different human ambitions, intentions, values, plans, and products. The Internet as a universal medium may grasp the same cultural values and activities as the real world. It also creates a new cultural world in which self-realization can be accomplished in many different ways that would simply be impossible in the real world. Finally, according to Ropolyi, the Internet is an independent organism that can be examined separately from the technology inside its structure. This globally distributed organism develops in the same manner as any other evolutionary system. People themselves, along with their thoughts, actions, and ambitions, are a part of this organism.

The structure of cyberspace represents a hierarchy-based system of technical and semantic layers (physical, logical, information, and human) that are heavily linked to each other. The most important goods in this space are information, which is used by people, thus creating their new living space.

2. Information as the basic unit of cyberspace

Information that is stored in cyberspace can be seen as its basic building block. Information, or more precisely communication of information, builds up the very cyberspace, and without this building block, cyberspace would remain just a possible construction (*in potentia*). Cyberspace thus presents a platform for communication of information, rather than an independent entity.

What precisely is information that we communicate in cyberspace? We can see it as a correlation of two entities: physical and conceptual. By physical entity we can mean, for example, computer hardware or radio waves. Information, regardless of physical media that is used to spread it, is coded in a binary code or “binary digit” (0 and 1). New communication technologies that are based

on a binary number system are therefore known as digital media. Meanings are programmed and stored in computers as data, which can in semiotic transcription represent text, sound, images, and so on. Correlation of the physical and nonphysical world is well known in linguistics and semiotics. For example, human speech is a correlate of sounds (phonemes) and meanings. Correlation of the material and nonmaterial world is well known, for example, in linguistics or semiotics. For example, human speech is a correlate of sounds (phonemes) and meanings. Human articulated sounds, if performed in the correct order, can be decoded, and their meanings can be understood. Also handwriting is a correlate of signs and meanings. If symbols are written syntactically and grammatically correctly, then they can be decoded, which means they can also be understood. The difference between human language and “talking” through cyberspace lies in the fact that material correlate of information is constructed using modern technologies. Information coding, in contrast to speech and writing, is not performed directly and immediately, but through modern technologies in the form of binary code. This “information” cannot be approached semiotically and, as such, lies outside the human natural comprehension—this information we call simply “data.” Information that people work with has already been processed by computers and therefore is regarded as proper information. Ontologically, we need to distinguish data and information. Data is composed of binary values, with a given functional structure, while when processed by computer system, it is turned into information. For instance, data that represents a rose become information about the very rose when this data is transposed into the human semiotic system. The image of rose will then be matched to certain ideas, desires, and so on. Thus, information is always richer than simple data that is formed by logical and functional algorithms.

Růžička [6] and Cejpek [7] distinguish data and information similarly. They mention one more important difference between information types. Růžička [6] explains: “One can speak of data when the world is measured, weighed, counted...” For him, the structure of facts is less formal than that of data: “Facts are less formalized than data, but they can still be deprived of context. ...Data is the result of a mathematical formula. ...In my opinion, factum is a testimony, a description of the world that, in a given scope, is problem-free and undisputable.” He talks about quality of information: “...neither data nor facts is identical with information. The quality of information will reveal when a dialogue comes in which the world in question is challenged, or: when facts talk, questions are needed...”

Similarly, Cejpek [7] distinguishes between information and knowledge, when he says: “...in a more detailed view of given information, we need to distinguish between information and knowledge.” Or, as he continues: “Information as such does not mean recognition, but constitutes certain pre-requisite and basis.” He bases his idea on Patočka, philosopher [7], who claimed that “the term of information cannot explain understanding and knowledge...”

When compared, we can place Růžička’s facts to Cejpek’s information and Růžička’s information quality to Cejpek’s knowledge **Table 1**.

| Name | Information type 1 outside of semiotic system | Information type 2 isolated information | Information type 3 information in context |
|---------|---|---|---|
| Cejpek | Data | Information | Knowledge |
| Růžička | Data | Fact | Information quality |

Table 1.

Comparison between two similar semantic approaches to structure of information.

The first contact with information that comes from a data source may appear to be isolated and simple or even measurable. Both authors emphasize that we can only count data blocks, not information blocks. Essentially, even information seen for the first time is not isolated or unbreakable, as we use semiotic rules, based on a system of relations, to understand it. However, both of these authors agree that deeper assessment brings higher information quality or knowledge that affects us, since it widens and re-configures the horizon of our knowledge. Such deeper understanding then brings serious consequences not only into the way we understand given information but also knowledge or knowledge-based society.

Information is a basic, ontological unit in cyberspace and can be also seen through the lens of classical metaphysics. Similarly to Aristotle's metaphysics, also information is made of its matter (material correlate) and form (idea correlate). It has its potency as data and validity as information or information quality.

3. Cyberspace as a new existential dimension of man

If a significant part of our life, for example, our visions and ideas, is reflected in cyberspace, then we can say it becomes a new extension of our life. If we daily spend a few hours in cyberspace, then the bond with our life will be very strong. Lohisse [8], points out that media (including cyberspace, as a communication channel for modern digital media—note by authors) are not mere tools that do their job only when we use them, but they expand and their effect grows. More specifically, this influence can be seen in the adaptation of our cognitive functions and abilities (attention, memory, imagination, thinking, etc.) to cyberspace communication. And this adaptation changes our existence. Our existence extends to a new dimension that is virtual in nature. The virtual dimension, or the cyberspace in which we communicate, thus becomes a new existential dimension of man.

The very first thing that will attract our attention when we study the phenomenon of cyberspace is its character. Paradoxically, we can describe cyberspace as a non-space place, as there is no 3D physical dimension in it. Despite this feature, we still regard it as a space, even though we mean it predominantly in a visual or audiovisual sense. Thus, this new technological space lies within a human, in the very mental dimension we use for constructing vision or ideas. The difference is in the fact that human's mental space is given biologically, while cyberspace is constructed technologically.

The second thing that may attract our attention in communication in cyberspace is the speed of communication. Communication is almost instant, typically with no delay. Besides this, there are no firm physical marks that could be used for distinguishing movement, which is something we need when we want to measure time. Immersed in cyberspace, we are not able to measure time. In order to do it, we need to step outside. Events in cyberspace resemble a dream in which we cannot say time. Cyberspace and dreams both share two features—no fixed points that could be used for measuring and no perspective for the observer. When we dream, we first need to wake up, only then we can measure the time spent. With new technology, for example, Google Glass or electronic lenses, leaving cyberspace would not be so easy because Google Glass, or let alone electronic lenses, would be quite an integrated part of the human body.

The speed of communication and absence of physical space in cyberspace eliminated linear or successive time. We could also call it simultaneous time, borrowing the term from a simultaneous exhibition in which the grand master plays multiple games of chess at a time with a number of players. The idea of linear or gradual time

breaks up into a pattern of present events. Something similar happens also in communication in cyberspace, for example, when we surf the Internet [9].

Time and space are two basic coordinates of our life, marginalization or omission of which can greatly affect our life. According to I. Kant, time and space represent a priory aesthetical forms of consideration, the first and fundamental processing of impressions that we get through our senses. If this is changed, then there is a great chance that our everyday real life will get changed as well. Time and space will not be as important as they use to be. For example, a medieval man saw time as a gift; it meant a chance to fight for salvation. In the modern period, time might have meant a space for self-realization. Nowadays, influenced by cyberspace, time not only becomes “just now,” but it is also empty. The result of time made present is seen in the youngest generation as a lack of interest in history, but also future, as these people live their lives more and more in chatrooms, on Facebook, sharing photographs, videos, and other similar experiences. In such a social space, information about the past but also future, about plans or vision, would feel very disruptive. Rankov [10], inspired by Lévy, comments that time (with tradition and culture) spreads into hypertext, which we read not linearly, but consecutively. In other words, information that was once spread is now stored in database or in cyberspace, where it is distributed, combined, and broken into chunks. Also, time is not the same as it was in the past. Despite the fact that everything speeds us and modern society suffers from chronic lack of time, we are killing the time more and more by surfing on the Internet, useless chatting, or sending emails.

Similarly to time, also space—or more precisely our ideas of space—have changed. We take space very differently from how we understood it in the past, for example, in the Middle Ages or Modern Period time. A man in the Middle Ages could learn about distance between, for example, Rome and Paris by actually walking or riding a horse from one place to another for 3 or 4 weeks. His experience of the distance would be equal to the trouble he went through during this journey. In the Modern Period, with the discovery of America sailing all over the globe, the idea of space was changed. Though our Earth was still huge, it was not limitless as it was a sphere. In the nineteenth and especially twentieth century, with development in modern transport and information technology, the Earth became even smaller. We can travel to the most distant places within hours, and when we use telecommunication technology, we can make this journey in an instant. Telecommunication technology (auditory and visual) eliminates physical dimension in space. We take this form of online communication as an absolutely standard service and do not realize the loss of real space.

Referring to I. Kant's epistemology, with aesthetic forms of outlook, such as time and space, also our category of thinking changes. Kant distinguishes 12 categories as an a priori matrix that contributes to our thinking. In more recent philosophy, influenced especially by L. Wittgenstein and M. Heidegger, a discovery was made—our thinking, including category pattern, is firmly bound to our language. This means we think and learn in the language that we communicate in. Spoken word is understood to be a privileged medium, mother of all media. However, it is not the only medium as we also use written word, printed word, and electronic media, including the Internet—which we generally use to enter cyberspace. If we then think with media, then each kind of media must affect the form or structure of our thinking. Lohisse [8] provided convincingly evidence on how thinking (collective mentality) was influenced by four types of media through the cultural history of mankind: spoken word, written word, printed word, and electronic media. According to him, spoken word was potent to draw and unite people deeply. The era of spoken word featured cyclic time and collective consciousness. This was broken with the beginning of written word. Writing, especially phonetic one, reorganized human thinking into a linear template, which also initiated a shift to

linear understanding of time. Written word became a tool to divide the society that started to see the phenomenon of power and individuality. This trend was even more evident in the era of printed word, which separated the author and established a standardized text, fostered individuality of man and subject-object view, and also triggered the mass phenomenon. Lohisse sees electronic media, but specifically the Internet, as fundamentally different, changing our imagination and the way we think and learn. The Internet uses a technological language, and we have to adapt to this language in our communication. Our language will therefore be changing into a techno-language. Besides this, speed and amount of information will be shaping our thinking toward discontinuity, simplicity, and superficiality of content. On the other hand, the Internet might give us a chance to improve our skills to quickly respond to varying content that we find in cyberspace, which is something our predecessors would probably have a problem with. It is rather difficult to map how thinking of a modern man changes, but it becomes apparent when compared with people in history. N. Postman [11] offers an impressive example of a nineteenth century dispute between Lincoln and Douglas. They both were able to maintain their debate on an exceptionally high rhetorical level for long hours and keep their audience interested. They could still continue their debate after a longer break. Postman showed the contrast with television, which through often miss-matching images deforms abstractive thinking, once highly cultivated by printed word. Pravdová [12] points out that “it is enough when images, can be distinguished, in contrast to words, which need to be understood.” A similar situation happens also in the era of the Internet. The cyberspace Internet favors image thinking, unconcentrated and not too continual logically. In the context of these changes, Sartori [13] points out that man changes anthropologically and *Homo sapiens* turns into *homo videns*, which testifies to change from abstract to image thinking.

Communication in cyberspace triggers changes in understanding time, space, and structure of thinking. In order for us to communicate in cyberspace, we need new information technologies; these become an everyday part of our life. This is yet one more effect that cyberspace brings. Originally, modern information technologies were not mobile, just as the heavy computers we saw in the 1990s. With light and small notebook computers and presently also iPads and smartphones, this technology is easy to carry. They are part of our life not only at home but also in the streets, offices, and generally in any possible place that we go to. These modern devices that help us enter cyberspace are generally at hand. With Google Glasses, which do not require physical manipulation, cyberspace becomes somehow a part of the body. Google has a vision—such glasses could be transferred into electronic lenses. This would mean a very close bound between body and modern information technologies. With these communication changes, we start thinking about cyborgs, where technologies become a part of the human body. With everyday usage of smartphones or iPads and physical connection between them and the human body (they are at hand, in the pocket, etc.), we can start speaking of mental cyborgism because combining the human body and technologies happens at a mental level. However, if such technologies became a real part of the human body, it would mean real cyborgism, or direct connection of the human body and technology. We agree with R. Cenká and I. Lužák [14] that “technosphere is taking over biosphere” and that this trend will continue. This makes us wonder what will happen with human naturalness. Will we still be able to talk about the old human, or will it be a new kind of human? These questions might look like a sci-fi, but in a few years’ time or decades, they could describe reality.

Another problem with identification with media is the one of cyberspace identifications with social groups or one’s own avatar. It is not quite about what social group or what avatar it may be, but about the need to get somehow inside a

group, identify oneself with the group, or change identity. Our identity can then be constructed in accord with our participation in various groups.

We can call the changes that we studied in this part of subchapter (changes in time, space, structures of thinking, and identification with technologies) formal, because they are results of using mental or physical connection to information technologies. Of course we could mention other formal influences, and we may, for example, study changes in the attention, memory, social contacts, and more. In the background of this approach is the idea of technological determinism, such as M. McLuhan, L. A. White, J. Lohisse, and other authors. The starting point for this approach is the idea that new communication technologies have a profound impact on human cognitive changes and consequently changes in culture and society. Along with formal influences, there are also changes based on content influence. We see content as particular communicated information that may take various forms—perhaps as symbols (images, sounds, and so on) or meanings (scientific, social, entertaining, and similar). Formal influence of cyberspace, though harder to be recognized as it is not a direct product of communication, has a stronger influence on shaping a man than communicated content, because it structurally changes his ideas and thinking. S. Gáliková Tolnaiová [15] calls the formal type of influence stronger version and the second, content type, weaker version of media influence. It is chiefly the first—formal type—that contributes to the new anthropogenesis, influencing man mentally, psychically, and also physically to certain degree.

4. Positives and negatives of formal influence of cyberspace

The usage of information technologies and especially communication in cyberspace has its positives but also negatives. Modern communication technologies, similarly to other tools, can act as a good servant but a bad master. It is very difficult today to find the borderline between these two polarities because the bound between us and them is so strong that we are more or less unable to reliably distinguish and realize how much they influence us. Middle-aged and older generation, having lived without the influence of modern media, is more likely to debate this than younger, or the so-called digital generation, as they were growing up surrounded by new technologies that became an inseparable part of their life. Therefore it is extremely important to learn to see the perspective, build up a mental a psychological protective barrier when approaching media, and distinguish positives from negatives in communication in cyberspace.

We can now speak more on positives and negatives of the four formal influenced areas (time, dimension, structure of thinking, and identification) in cyberspace:

1. Time. When we communicate in cyberspace, we experience enormous speeding up of information transfer, which nowadays reaches almost the speed of light. Then there is a huge increase of amount of information, which still grows exponentially. This means we can access almost any information quickly, but selecting and processing are more demanding and time-consuming, which lead to sketchiness. The lack of time further causes another effect—deprivation of time that should be dedicated to holiday, family, bringing up children, and so on. Paradoxically, one may be killing the time by surfing the Internet, chatting to friends, or sending emails simply to maintain the feeling of being engaged or belonging to a group. Besides this, information in cyberspace is not stored and communicated linearly, but hypertextually, in a fanlike pattern, which leads to favoritism of simultaneous time over linear time. With linear time being broken comes also lack of interest in the past, history, culture, and traditions but also indifference regarding the future. This is typical of the modern digital

youth. Bauerlein [16] carried out research at high schools and universities in the USA and found out that year after year students are less and less aware of history and civic education, and generally their knowledge in subjects that have something to do with history is less and less adequate. Volko [17] carried a knowledge research at one of the Slovak universities and acquired a similar result, which he commented: “Quality of general knowledge is, mildly speaking, inadequate. Students that will in the future work in media, struggle when asked to say for example when Slovak National Uprising started, they cannot define holocaust or think of two Slovak classical music composers.”

2. Space. A positive aspect of communication in cyberspace is in its ability to defeat geographical locations. We can now communicate with someone who lives in Australia or the USA not only orally but also visually. We even can watch events happening in various places on the globe. This may bring its negative aspect—we can lose the sense of value of the real surrounding, our homeland, traditions, and culture in a given place. With communication on the Internet, importance of such a place declines, and people lose their roots. The Internet and also globalization tear the bound between geographical location and social role. With no geographical and social roots, one can easily become homeless in cyberspace.

Cyberspace of electronic media does not only consist of online telecommunication or online tele-seeing of the world; it is a world of new opportunities in virtualization of reality. Virtualization of reality may take various modes of reality or creation of brand new, fantastic worlds. Communication, or contact with virtual worlds, brings some pros and some contrast. In playing games young people can learn manual and visual skills and learn about the world but also become completely immersed and become addicted or virtualize the real world.

3. Structure of thinking. In communication within cyberspace, some structural changes in thinking and consequently in learning occur. Each media has its own semiotics, and the most fundamental media, for example, spoken word, found their new cultural epochs. Therefore, media are tools for our thinking and learning. Bystřický [18], for instance, says that “we also use different ways of thinking with increased use of technologies, not in terms of changing the actual availability of such abilities; we rather fundamentally alter strategy of their use.” Thinking in cyberspace is influenced by discontinuity of images, short texts, and similar, which does not help us to train concentration and continual refinement of ideas. On the contrary, a text in a newspaper or book requires us to concentrate and pursue the logical chain of ideas that are expressed. Book and newspaper thus develop abstract and logically continual thinking, while television and especially the Internet nourish visual and discontinuous thinking. According to G. Sartori, image-based media, such as television and the Internet, alter the way we think, imagine, and learn. He is convinced that a new type of human is rising—*homo videns*—whose perception and knowledge are greatly modified by media images. In his idea, the turn from conceptual language of texts to media images also brings deprivation of abstract thinking, and, as Solík [19] adds, also emotional changes. We do not need to think; seeing a picture is enough. Sartori [13] explains: “Television brings metamorphosis that affects the very core of *Homo sapiens*. It is not a mere tool for communication, but also an anthropological instrument that constructs a new kind of human existence.” *Homo sapiens* then changes to *homo videns*, which introduces decline in erudition and cultural decadence. It is similar in the case of the Internet that, unlike television, is interactive. If used by

someone culturally illiterate, only what seems to be interesting will be picked, namely, entertainment. We could see this aspect of structuring in thinking as negative. Positive aspect could be seen in rapid access to information and, under certain condition, also access to information offered by “collective intelligence,” collective source of information, for example Wikipedia.

Another structural change in thinking in communication in cyberspace occurs in net-based or hypertext-based source of information. We could describe this type of communication or information as rhizomorph. Eco [20] used this term to distinguish it from the previous, treelike (*arborescent*) thinking. A picture of tree, for example, in the Middle Ages thinking (*arbor porphyriana*), represented a neat structure of hierarchy-based and logical thinking, from the essence of being, all the way down to its peripheral symptoms. However, rhizomatic thinking is non-systematic, incomplete, and netlike and has no beginning and no end. Thus the Internet, based on its own technological and netlike (rhizomatic) structure, promotes “loop connections” and consequent disintegration of the so-called linear code. U. Eco explains that rhizome excuses and supports disharmony, because rhizome creates loop-like processes. Eco even says that “To think means, in rhizome, to advance blindly and rely only on assumptions.” The Internet, characteristic for its hypertext, or perhaps rhizomatic connection of information, will not support abstract, linear, and logical thinking, which may constitute a threat for modern society. Spitzer [21] states that digital natives instead of thinking in hermeneutic circle (from fragments to the whole picture and the other way round) get only superficial information surfing on the Internet: “Digital natives do not go through this hermeneutic circle: they haphazardly click here and there and never return to a good source; they look only horizontally (do not dig deeper).” Višňovský [22] notices that there is a difference between printed information and online information. When we read online, we do not read horizontally, line by line, but slide vertically along the text.

4. Identification. In communication on the Internet, there are two sorts of identifications: mental and physical connection with media that helps us get inside cyberspace or mental identification with content in cyberspace. The first type of identification constitutes mental or mentally physical cyborgism. It is currently possible to connect technology (artificial arm) to the nervous system and control it by thought. We can expect similar applications also in the field of information technology—for example, Google’s Google Glass and later possibly electronic contact lenses. Some technologies may, in the future, be implemented also in the human body. This could bring its positives for some people who suffer from injuries after accidents and also provide immediate access to information. On the other hand, it could bring a fundamental dependence on technology and potential danger of abusing this technology to spy on people or control them.

At the present time, self-identification with content in cyberspace through social groups, or avatars, is still more and more common. The effort to find one’s place among a social group and be able to share one’s knowledge and experiences may be taken as desirable. One can sometimes feel the need to live a better life in cyberspace, for example, in a videogame called *Second life*. This can induce therapeutic, liberating effects. People can feel a need to become somebody else in life and demonstrate this also in social life, as we can see, for example, in a videogame called *cosplay* (a portmanteau of the words *costume play*). In Japan, but now also in other counties in the Western world, cartoons and cartoon characters are idols for teenagers. Young people identify themselves with these characters, which manifest the most in their costumes. Sometimes this new identity is so strong that young people will not want

to abandon the idea [9]. Everything depends on the extent and manifestation of such identification. If it causes alienation or addiction, it becomes a negative situation.

Analysis of positive and negative changes in communication in cyberspace reveals that we need media education. D. Petranová [23] explains it is critical thinking that is the most important objective, and this can help us treat media with reserve, analyze information correctly, think independently, free ourselves from stereotypes, and so on. This all should improve our personal freedom.

5. Conclusion


We have known communication in cyberspace, especially in the cyberspace Internet, for slightly over a generation span, and we can already say that it has significantly influenced our cultural and social life; it even initiated a new existential dimension. The Internet cyberspace is a medium through which we create our ideas, communicate, and learn. Basing on analysis of older types of media, for example, written word and printed word, we know that these managed to restructure human thinking and acting completely. This leads us to believe that something similar is happening, and will be happening, also in connection with the Internet cyberspace. Media, including the Internet, influence us simply because we use them. The mere fact that we are connected to the Internet and use it in our communication in cyberspace is all what it takes; how we use it is not so important. We call the first type of influence, which is the result of being connected to technology, formal influence. The second kind of influence, triggered by communicating certain content, is defined as content influence. In this article we tried to point out that formal type changes are more crucial and paradigmatical and even constitute a new anthropogenesis. We specifically studied changes in our ideas of time and space, structure of thinking, and identity in cyberspace. These changes do not manifest merely in communication in cyberspace but affect also our everyday life. This is the reason why it is necessary to know their scope, positives, and negatives. New communication technologies influence our mentality but also our physical body. The question is how much is just enough to refine our personality, knowledge, and freedom and how much is simply too much, so they will start dictating and conducting us. We therefore need to learn to trust media with reserve, be critical, and spend at least part of the time we have without the influence of media, especially away from the Internet cyberspace.

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References

- [1] Clark D. Characterizing Cyberspace: Past, Present and Future [Online]. 2010. Available from: <http://web.mit.edu/ecir/pdf/clark-cyberspace.pdf> [Accessed: 15 December 2013]
- [2] Holmes D. Communication Theory. Media, Technology and Society. London: Sage; 2010. p. 243
- [3] Cocking D. Plural selves and relational identity. Intimacy and privacy online. In: Van de Hoven J, Weckert J, editors. Information Technology and Moral Philosophy. Cambridge: University Press New York; 2009. pp. 123-141
- [4] Sprondel J, Breyer T, Wehrle M. Cyber Anthropology Being Human on the Internet. [Online]. 2011. Available from: <http://www.hiig.de/wp-content/uploads/2012/04/CyberAnthropology-Paper.pdf> [Accessed: 16 November 2014]
- [5] Ropolyi L. Philosophy of the Internet. A Discourse on the Nature of the Internet. [Online]. 2013. Available from: http://elte.prompt.hu/sites/default/files/tananyagok/philosophy_of_internet/book.pdf [Accessed: 06 January 2015]
- [6] Růžička M. Informace a Dobro [Information and Good]. Praha: Ježek; 1993. p. 84
- [7] Cejpek J. Informace, Komunikace a Myšlení. Úvod do Informační Vědy [Information, Communication and Thinking. Introduction to Information Science]. Praha: Karolinum; 2005. p. 234
- [8] Lohisse J. Komunikační systémy [Communication Systems]. Praha: Karolinum; 2003. p. 200
- [9] Gálik S. Filozofia a médiá [Philosophy and Media]. Bratislava: Iris; 2012. p. 104
- [10] Rankov P. Informačná Spoločnosť—Perspektívy, Problémy, Paradoxy [Information Society—Perspectives, Problems, Paradoxes]. Levice: LCA Publisher Group; 2006. p. 175
- [11] Postman N. Ubavit se k Smrti. Veřejná Komunikace Ve věku zábavy [Amusing Ourselves to Death: Public Discourse in the Age of Show Business]. Praha: Mladá fronta; 2010. p. 208
- [12] Pravdová H. Determinanty Kreovania mediálnej kultúry [Determinants of Creating Media Culture]. Trnava: FMK UCM; 2009. p. 361
- [13] Sartori G. Homo Videns: La Sociedad Teledirigada [Online]. 1997. Available from: http://ifdc6m.juj.infed.edu.ar/aula/archivos/repositorio/0/116/HOMO_VIDENS.pdf [Accessed: 15 December 2013]
- [14] Cenká R, Lužák I. Kyberpriestor a fenomén mystickej smrti [the cyberspace and the phenomenon of “mystical death”]. In: Gálik S, editor. K Problému Univerzálnosti a Aktuálnosti Fenoménu Mystickej Smrti. Łódź: KSIĘŻY MŁYN Dom Wydawniczy Michał Koliński; 2013. pp. 227-262
- [15] Gáliková Tolnaiová S. Anthropological risks and the form that evil takes in the electronic media era. In: Jozek M, editor. Contemporary Images of Evil. Krakow: Wydawnictwo Naukowe Uniwersytetu Pedagogicznego; 2013. pp. 33-56
- [16] Bauerlein M. Najhlúpejšia Generácia. Ako Digitálna éra Ohlupuje Mladých Američanov a Ohrozuje Našu Budúcnosť [The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes our Future]. Bratislava: Vydavateľstvo Spolku slovenských spisovateľov; 2010. p. 208

[17] Volko L. Internetová komunikácia ako súčasť mediálnej kultúry [internet communication as part of media culture]. In: Magál S, Mikuš T, Petranová D, editors. Megatrendy a Médiá. Limity Mediálnej Internetovej komunikácie. Trnava: FMK UCM; 2011. pp. 87-96

[18] Bystřický J. Média, Komunikace a Kultura [Media, Communication and Culture]. Plzeň: Aleš Čeněk; 2008. p. 96

[19] Solík, M. Semiotic approach to analysis of advertising. In: European Journal of Science and Theology. 2014;**10**(1):207-217

[20] Eco U. Od Stromu k Labyrintu. Historické Studie o Znak a Interpretaci [from Tree to Labyrinth. Historical Studies of Sign and Interpretation]. Praha: Argo; 2012. p. 653

[21] Spitzer M. Digitální Demence [Digital Dementia]. Brno: Host; 2014. p. 343

[22] Višňovský J. Aktuálne otázky teórie a Praxe žurnalistiky v ére Internetu [Current Issues of Journalism Theory and Practice in the Internet Era]. Trnava: FMK UCM; 2015. p. 350

[23] Petranová D. Mediálna výchova a kritické Myslenie [Media Education and Critical Thinking]. Trnava: FMK UCM; 2013. p. 108