

[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

COMMUNICATION SERVICES IN THE AGE OF DIGITAL CIVILIZATION: CONVERGENCE WITH ARTIFICIAL INTELLIGENCE

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Abstract:

The article makes a case for the need to completely rethink the modern conceptual framework used to describe the processes occurring in the area of communications. Instead of multiple, difficult-to-define and contradictory terms, such as 'new media', 'social media', 'social networks' and so on, we suggest a summarising concept of 'digital communication services'. Analysis of those digital services indicates that they increasingly use artificial intelligence (AI) in the field of technology communications. The article describes some of the consequences of its use.

Keywords: new media, social media, social networks, digital communication services, artificial intelligence

Introduction

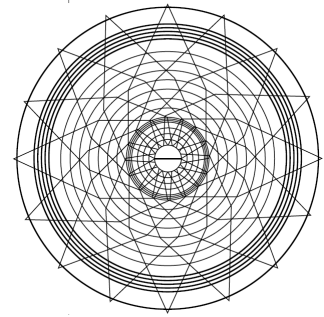
Describing modern society, researchers use such concepts as fluidity, eluding, McDonaldisation, risks, gamification, simulacrisation, mobility of people, capital, images, information on a global scale, technological and communication growth, the emergence of global microstructures operating on the principles of self-organisation and more. These and other phenomena that society has had to face in recent decades have given rise to a number of original concepts, such as those of M. Castells, J. Urry, M. McLuhan and others.

We believe we can offer another viable theoretical concept, describing everything that happens in the modern world as a process of transition from an analogue civilisation to a digital one. The distinction between analogue and digital civilisations is linked to basic communication technologies. Analogue civilisations use various systems of encoding, storing and transmitting information, all of which closely replicate the displayed reality. An example of analogue technology is a film camera. The image is captured on a clear plastic film coated with silver-based chemicals that react to light. When the film is developed (chemically processed in the laboratory), it is used to print the image that has been photographed. In other words, the image one gets is the equivalent of the scene that one wanted to capture. The same applies to recording sounds with a cassette recorder. The recording one is making is a collection of

[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



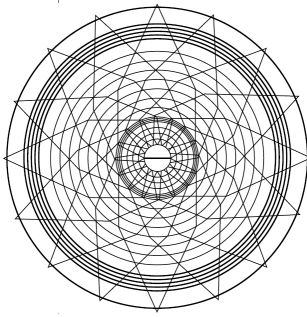
magnetised areas on a long roll of plastic tape. Together, they are analogous to the sounds that one originally heard. It is curious that the expression 'analogue clock' has already appeared, describing devices with mechanical movement and old-fashioned design.

In a digital civilisation, information-coding systems are used that have nothing to do with the displayed reality. Any information is encoded using two characters: signal presence: one; absence: zero. This change in coding systems has brought about the creation and development of computer technologies for the accumulation, storage, processing and transmission of data, as well as the organisation of communication and telecommunication networks. There is integration of software and hardware, communications and telecommunications, and information resources (that is, stocks of knowledge) in a single information space, as a single information and telecommunications infrastructure. A characteristic feature of digital civilisation is the creation of powerful cross-border information and communication networks, connecting all countries and continents, penetrating into every home and simultaneously affecting both each person individually and huge masses of people. Understood in this way, digital civilisation is based on a complex, multi-level self-developing system, which we denote by the term 'information and communication universum'. A detailed analysis of the formation and development of the category 'civilisation' is presented in the monograph: Dzyaloshinskiy I.M. Philosophy of digital civilization and the transformation of media communications (Chelyabinsk: SUSU Publishing Center, 2020). It also substantiates the possibility of introducing the concepts of 'analogue civilisation' and 'digital civilisation' into scientific circulation.

By no means do we suggest that there are no alternatives to the terms analogue civilisation and digital civilisation. Obviously, in addition to the change in the coding method, other, much more significant transformations take place in the course of the transition to a digital civilisation. It is likely that sooner or later, a more precise definition for these two civilisations will be found. But for now, we are using these terms.

One of the important features of social communities, groups and societies in an analogue civilisation were specific communication services that provided connections between the members of human aggregations as well as between other types of aggregations. These communications were divided into four clusters: 1) interpersonal communication; 2) group communication; 3) corporate (organisational) communication; and 4) mass communication. We will not describe the set of communication services serving the above clusters, especially since there are numerous publications studying these topics.

We do not share the idea of M. McLuhan, who believed that it was communications that created communities. In fact, we adhere to a fundamentally different position: that there are more significant reasons bringing communities together. Furthermore, we believe that new means of communication appear precisely because when people come together, they need to interact regularly. However, one cannot argue that effective communication tools significantly facilitate and accelerate the processes of the formation and consolidation of communities.



[Scientific Articles]

Dzialoshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

Analysis of existing works allows us to identify several factors that stimulate the transformation of communication models. The first three factors are associated with the objective processes of transformation of the modern world:

- Rising living standards require the entire system to be restructured to meet the more complex needs of ever-increasing numbers of people.
- Breaking up of traditional communities, appearance of new social strata and groups of people with their own (more complex than the rest of the community members’) interests.
- Increased investment in high-tech industries and infrastructures in advanced communities, which have the necessary resources and increasingly recognised ambitious needs.

Two more factors have arisen as a result of changes in the consciousness and behaviour of people:

- The need for equal access to social and cultural benefits regardless of where one lives. In many countries with extremely uneven distribution of medical, cultural and educational institutions across regions, equal access to their services becomes critically important. The internet already allows one to receive highly qualified medical advice in any local hospital, watch theatre performances from the capital in any location, get certifications and use the advantages of distance learning wherever one lives.
- As it is unlikely that more advanced communities would blindly follow directives from government institutions, community management systems require complete rethinking.

Aspects of the conceptual framework

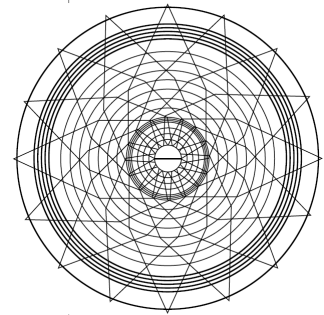
In recent years, such notions as ‘new media’, ‘social media’, ‘social networks’ and ‘social services’ started being used to describe communications. These phrases were coined by chance, while commentators sought words to describe various digital services. Some researchers suggested social media, others new media, others social networks. All of these concepts quickly gained popularity. At the same time, few can explain exactly what they mean and what the differences are between them. The concept of a ‘network’ is especially unlucky. In modern social science, this phrase has developed so many connotations and levels of reflection that it has become practically meaningless. Researchers talk about network theory (more precisely, about network theories), network approach, networked society, network culture, digital networks, social networks, inter-firm and organisational networks, knowledge networks, cognitive networks and so on. All this has prompted a number of scientists to believe that network is not a concept as such, but rather an ‘umbrella’ metaphor that unites a kind of gestalt or perspective of the social world (White et al., 1976).

It seems as though it is time to replace the above-mentioned, as well as many other concepts, with some other categories that more accurately convey the essence of the described or analysed phenomena. For example, T. Feldman suggested the concept of

[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



‘digital media’ and formulated his criteria for defining digital media and their distinctive characteristics (Feldman, 1997, p. 6). Some authors suggest using the phrase ‘electronic communication’ as a summarising concept. It is argued that the concept of electronic communication should be distinguished from the concept of ‘technically mediated communication’, which is much broader and involves the communication of individuals using any technical device: telegraph, telephone, pager and so on. There are also the terms ‘internet-mediated (mediated) communication’, or simply ‘internet communication’, which are equivalent to the term electronic communication, since the internet as a set of world networks underlies the dissemination of information in digital form (Privalova & Kuptsova, 2016).

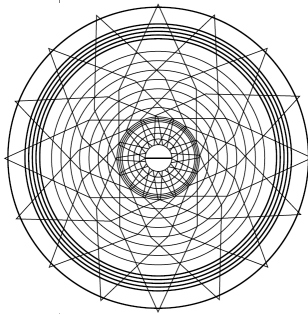
We believe that the phrases internet communication and electronic communication relate only to the technological aspects of the devices used. Therefore, we suggest using the concept of ‘digital communication services’, or, in short, ‘digital services’, as a general concept that can be used to designate all technological platforms, which are now called new media, social media, social networks and so on. Based on this basic concept, one can build a typology of digital services, avoiding the word ‘social’. (We will leave this task to other researchers.)

Delight gives way to misgivings

Initially, the development of digital services was greeted with enthusiasm. Thus, J. Hartley (2002) addresses the idea that modern media is in fact a public domain. P. Virilio supports this opinion: ‘Outdoors and meeting places have now been replaced by a screen, displays, shop windows’ (1994, p. 64).

However, scepticism gradually grew in relation to digital services. K. R. Sunstein (2007) argues that new media can weaken democracy because by using the internet as a platform for communication, users are divided into interest groups, thereby cutting themselves off from the global information field. Sunstein introduces the term ‘cyber-Balkanisation’, which describes the phenomenon of groups using the internet to communicate within their community, excluding any other existing points of view, opinions and questions. A possible consequence of this process is the extreme polarisation of groups with radical views, incapable of dialogue.

Many authors believe that digital services make it possible to manipulate mass consciousness and the behaviour of large groups of people on an unprecedented scale. Reports produced by Oxford University and research firm Graphika and Columbia University in collaboration with an Austin cybersecurity firm, commissioned by the U.S. Senate Intelligence Committee, provide evidence of how Russia interfered in U.S. elections using digital services (Howard et al., 2018). The use of YouTube and Instagram by Russian trolls has grown significantly since the 2016 elections. The number of YouTube video links posted by trolls on Twitter accounts since 2017 has grown by 84%. Both reports concluded that neither Facebook nor Twitter nor Google responded properly to disinformation campaigns by Russian trolls, even when they were aware of these (Orlova, 2018).



[Scientific Articles]

Dzhaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

Consequently, because talk about self-regulation of the internet is wishful thinking, this raises the issue of filtering the internet. Furthermore, government bodies are tempted to solve these problems in the simple way that these structures understand. Technical issues are fairly easy to resolve. According to published materials, in the People's Republic of China, for example, most providers now have software that allows continuous monitoring of citizens' behaviour in cyberspace. Since 2014, China has been maintaining a social scoring system that awards citizens 'points' for 'commendable' behaviour. The most common punishment for misconduct, from tax evasion to buying too many video games, is to be banned from air and rail travel. These penalties were introduced in May 2018, and by the end of that year, the National Public Information Credit Centre of China reported that 17.5 million plane tickets and 5.5 million train tickets could not be bought due to low scores. A total of 128 citizens were banned from traveling abroad.

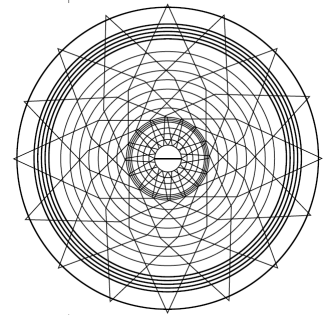
In the Democratic People's Republic of Korea (DPRK), since 2013, all phones have been equipped with a specially designed operating system that prohibits the user from opening video, audio and text files that do not have a special 'signature'. Such a signature is issued by the authorities, confirming that the file is ideologically acceptable and does not contain information that ordinary people are not supposed to know. 'Correctly produced files' with ideologically impeccable content have such a signature, while the rest of the files, including those created by one's friends, do not have it – hence, such files cannot be opened from an ordinary North Korean smartphone. The same approach is applied to personal computers, the number of which in North Korea is close to a million. In the DPRK, private individuals, as well as the vast majority of officials, do not have access to the internet. The internet is replaced by 'Kwanmen', the national intranet, which is not connected to the World Wide Web in any way, but nevertheless offers a fairly rich and varied content. Only certain privileged institutions offer their employees limited access to the internet once they have been given a security clearance. The system for 'mere mortals' is different: state information centres browse the internet and select content that, in their opinion, is of interest to specialists and the general population. Then, the useful content they find is uploaded to the Kwanmen network. These are usually popular materials in the natural sciences and technology (Lankov, 2018).

Other countries use CyberPatrol software. This is not just a system for controlling access to inappropriate content, but it can also determine a schedule for using the internet, limiting access at certain times of the day and on certain days of the week, as well as limiting the total amount of time spent on the internet. CyberPatrol allows one to control access to websites, newsgroups and chats, as well as games and other applications. Internet traffic filtering allows home and corporate users (educational institutions or businesses) to establish and describe an acceptable internet access policy. The built-in content filter allows an administrator to block access to specific WWW servers and, in addition, to manage and control the access of specific users. The list of unwanted sites, CyberNOT™, is located on the CyberPatrol home web server and is regularly updated, and users can download changes for free. This list contains twelve

[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



categories of prohibited content based on published criteria. Company experts regularly update and compile these lists and group them into the above-mentioned categories.

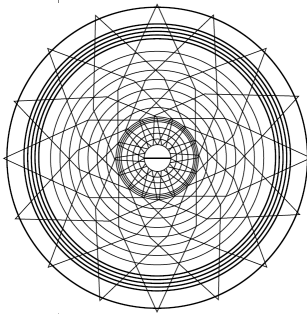
However, this begs the question: who, how and on what basis will what we can and can't watch be determined? What are the legal norms that govern the civil, business and political relations of the members of a democratic society regarding the internet? In a digital environment, the situation is complicated by the fact that legal initiatives are significantly lagging behind rapidly changing realities. Globally, the regulation of digital services faces formidable difficulties.

In Russia, the government also seeks to manage internet traffic. On July 1, 2018, Federal Law 374-FZ, also called the 'Yarovaya Package' or 'Yarovaya Law', came into force, which gave the state the right to impose obligations on telecom operators to store user traffic for a period of six months. Professionals, industry workers, some politicians and civil activists protested against this law, which, in their opinion, violates constitutional rights, negatively affects both internet business and the country's economic development, and creates risks for the cybersecurity of citizens (Rossiyskaya obshchestvennaya initsiativa, 2016). Protest rallies were held throughout the country (Orlov, n. d.).

In April 2018, State Communications Supervisory Body Roskomnadzor was ordered by Tagansky District Court in Moscow to block the Telegram Messenger app, which refused to provide encryption keys to FSB. Since Messenger uses Amazon and Google cloud services, Roskomnadzor blocked the IP addresses of these services en masse, which caused many sites unrelated to Telegram to fail. A wave of protests took place in Russia, which strengthened the finances and image of this messenger service. Public institutions and citizens are trying to fight the blocks in court.

An administrative statement of claim was filed with Moscow City Court to declare illegal the actions of the FSB of Russia, which demanded that Telegram LLP provide the necessary information to decode messages from all users. Also, collective and individual complaints from Russian users were sent to the Investigative Committee of Russia and the Ministry of Internal Affairs of the Russian Federation about checking the actions of the Roskomnadzor management for the purpose of deliberately creating obstacles in the operation of web resources by including entire subnets of IP addresses in the register. An administrative lawsuit was filed with the Moscow Arbitration Court to declare illegal the actions of Roskomnadzor to include IP addresses belonging to the British VPN service in the Unified Register.

Increasing tension in society is caused by the actions of law enforcement agencies in relation to citizens regarding communicative network actions (reposts, comments, demotivators, saving information, etc.) and communication in messenger services. In Russia, charges are often brought under Criminal Code articles 280, 'Public calls for extremist activities', 282.1, 'Organization of an extremist group', as well as under Article 148, 'Violation of the right of freedom of conscience and religion' and Article 354, 'Rehabilitation of Nazism'. All of these laws target acts of extremism, unleashing an aggressive war, violation of the rights of freedom of conscience and religion and so on.



[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

Those convicted under extremist articles are also included in the Rosfinmonitoring list, which makes it impossible for them to open accounts, receive bank cards and perform a number of other operations.

At the same time, it should be emphasised that at the moment there is no systematic approach to the issue of qualifying offenses in social networks: practically for the same acts, in some cases, articles of the Criminal Code are used; in others, the Code of Administrative Offenses (CAO).

Against the background of the large-scale use of digital services to control the behaviour of citizens in countries with clearly undemocratic regimes, let us consider the phenomenal success of the books of the American journalist and ex-editor of *The New Republic* magazine, F. Foer (2020) and Harvard Business School Professor Sh. Zuboff (2019). These authors argue that digital capitalism, associated primarily with Google, Apple, Amazon, Microsoft and Facebook, has in recent decades posed the greatest threat to humanity.

Digital services and artificial intelligence

Of particular interest is the trend towards combining digital services with artificial intelligence (AI). Over the years, the problem of AI has been considered by researchers from various angles. However, the authors place the main emphasis on the formalised side, its discrete representation in the computer. In this view, AI does not differ much from an algorithmic tool. At the same time, more and more talk about the human-machine complex immerses AI in a hybrid reality (Raikov, 2021). To many observers, this reality is a source of fear.

A review by N. Markotkin presents a panorama of the use of AI as a 'permanent overseer' of the lives of citizens in different countries (Markotkin, 2021). For example, the trend of combining digital services with AI is of particular interest. The Moscow Department of Information Technologies has developed the 'Smart City – 2030 programme'. In 2019, the authorities started the deployment of smart cameras on a mass scale. This project was intensified in 2020 in response to the coronavirus epidemic. At the moment, there is no legislation in Russia that would regulate face recognition. The Law 'On Personal Data' stipulates that the use of biometrics is allowed with the consent of the person concerned; however, this restriction can be lifted in exceptional cases: to counter terrorism, maintain public order and for defence reasons. The wording of the Law 'On Personal Data' is very vague, leaving a huge grey area for system abuse and untargeted surveillance (Kozlova & Khachaturov, 2019). Where and how this information is going to be used is anyone's guess.

However, far more alarming consequences are looming. Some of them have already been described in the scientific literature (Pashentsev, 2019).

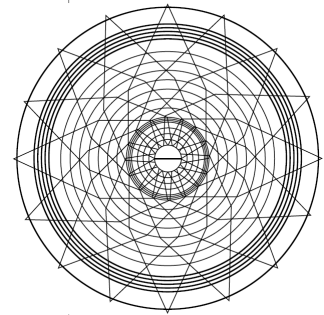
1. Using AI to create powerful text and other impulses that can transform the consciousness and behaviour of target audiences.

There is fairly reliable evidence of the effectiveness of such technologies. In 2015, Elon Musk joined Sam Altman in the development of the ambitious OpenAI (AI, Artificial Intelligence) project. Together, they decided to take AI to a whole new level. The

[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



businessmen founded OpenAI, a research institute that aimed at new discoveries in the field of AI that could be applied for the benefit of the whole society. However, in the end, the founders of the institute became so alarmed by what they had accomplished that they decided not to release their creation. The AI system, which stunned its creators, was designed to learn language patterns. It learned to do this at such a high level that it beat all the known automated systems in understanding the content. The OpenAI researchers then tweaked the algorithm to generate the response text. After that, they began to look at their achievement in a completely different way.

‘It looks pretty damn real,’ says David Luan, OpenAI’s vice president of text generation. Together with his colleagues, he demonstrated how a robot writer can be used for profiteering or hostile purposes. ‘It can happen that someone with malicious intent will generate high quality fake news,’ says D. Luan. Externally, the OpenAI tool is a regular web page where one can enter a request and see the generated text in response. After playing with this page and observing how the system responded to various requests, journalists agreed with D. Luan’s statement that this was amazingly real. Even when the response text was not entirely flawless, journalists required very little time to proofread it.

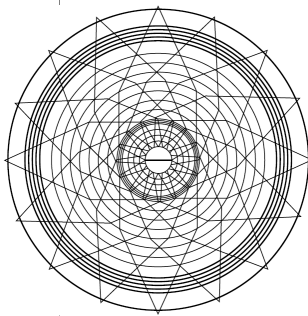
Jack Clarke, OpenAI’s director of information security, says technology like this could explode the scale of online disinformation and trolling. Many of today’s manipulators of mass consciousness are already using various robots. ‘As the cost of producing content declines, we can see an increasing number of bad guys emerge,’ he says.

Fake reviews aimed at altering the position of a product or business have already become a headache for search engines. More worryingly, they have become powerful weapons in political struggles.

OpenAI’s concerns about the risks of using smart text generators boil down to the use of misleading ‘fake’ publications to undermine elections or spread false information about competitors. They hope that their concerns about their own product can encourage AI professionals to be more transparent, thoughtful and socially responsible about what they create. ‘We are not sounding the alarm. We say that if the developers have two or three more years of such progress, then all negative scenarios for the development of AI will become urgent,’ says J. Clark (Skovoronok, 2019).

P. Pomerantsev comes to even sadder conclusions: he believes that the internet is a powerful factor in mass disinformation. He writes:

In the new world – the world of post-truth – absolutely everything can be said. Instead of Soviet-era jammers there is information noise. It used to be clear: what is jammed is forbidden, forbidden is the truth. Today, the hubbub of facts, post-facts and opinions is such that a common man in the street cannot distinguish important information from garbage, truth from fiction, information from manipulative fake. Information noise enters the information market, and the one who is believed wins. In Odessa, Manila, Mexico City, New Jersey, I hear the same thing. There is so much information, misinformation, everything in the world around me that I no longer know where the truth is. (Pomerantsev, 2020)



[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

2. Creation of 'deepfakes'.

'Deepfake' (from 'deep learning' and 'fake') is a method of synthesising a human image and/or voice based on the use of AI. Special software based on AI makes it possible to create clones that look, speak and act exactly like their templates. Deepfakes first appeared for fun. Today, however, there is a growing likelihood of malicious use of deepfakes when a clone of a famous figure is created. It becomes apparent that this technology offers a wide range of malicious uses. Actresses Scarlett Johansson, Maisie Williams, Taylor Swift, Mila Kunis and many other celebrities have already become victims of the creation of porn-deepfakes. Deepfakes fans have begun to use technology to create authentic digital videos of world leaders, including President Vladimir Putin, former US Presidents Barack Obama and Donald Trump and presidential candidate Hillary Clinton. Experts warn that deepfakes can be realistic enough to manipulate future elections and global politics, making them a potentially dangerous means of influencing the behaviour of individuals and large target groups. If properly prepared, deepfakes can provoke financial panic, trade war or even 'hot' war. Videos of Prime Minister Benjamin Netanyahu or other Israeli government officials talking, for example, about upcoming plans to take over Jerusalem's Temple Mount and Al-Aqsa Mosque, could spread like wildfire in the Middle East. Major media platforms like Facebook are doing research on the matter and trying to block this content as soon as it is identified. However, the problem is that there is still no workable algorithm that can detect a deepfake with 100% accuracy. Even highly realistic video scripts can actually be fake. The spread of deepfake technology is also potentially dangerous because it causes people to distrust any video or audio materials.

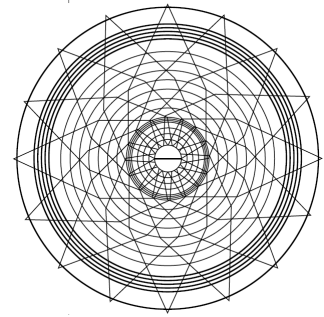
Microsoft opens limited access to 'Custom Neural Voice' – AI technology for converting text to speech. With it, developers can create their own artificial voices for digital assistants, chatbots, online learning, reading audiobooks and news text. Custom Neural Voice is part of the Azure AI Speech platform. To gain access to the Microsoft solution, companies must apply for access and obtain approval. The information technology (IT) company says the new technology provides more natural-sounding voices than similar solutions. A bank of sounds or phonemes is used to create 'voice fonts'. Microsoft's Neural Voice uses the power of multiple neural networks to accurately and realistically convey prosody (the tone and duration of each phoneme) and pronunciation. Microsoft technology is used by AT&T and Warner Bros. At the AT&T Experience Store in Dallas, U.S.A., visitors can 'talk' with cartoon character Bugs Bunny. The voice actor for Bugs Bunny has recorded over two thousand lines and phrases to create a voice font. Custom Neural Voice is used here in conjunction with augmented reality and 5G. The rabbit will help salon users find the hidden 'golden carrot' (Vyatskikh, 2021).

However, Microsoft went even further. It patented the method of the 'digital reincarnation' of people. In fact, the company has aimed at producing digital copies of a living or deceased person – which will be able to communicate. On the basis of images, voices, posts in social networks, emails, messages in Messenger and a number of other

[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



sources of data about a person, a psychological portrait of a bot will be formed. To download a chat bot, a tablet, smartphone or computer will be enough. In addition to the ability to communicate, the bot will also have an appearance recreated from the original. Voice synthesis is also planned.

3. 'Fake People' technology.

Following the sale of the first AI-generated artwork in early 2018, deep learning algorithms now work with portraits of non-existent people. NVIDIA recently shared the results of a Generative Adversarial Network (GAN) trained to independently generate images of people. A conventionally infinite array of images of real faces was taken as a basis, so the neural network recognises and applies many small details. It can paint hundreds of faces with glasses, but with different hairstyles, skin textures, wrinkles and scars, add age signs, cultural and ethnic traits, emotions, moods or the effects of external factors – from wind in hair to an uneven tan. Back in 2017, the same specialists from NVIDIA conducted a similar experiment, but then the facial images were too rough, and the fake was immediately recognised. Today, the neural network works incomparably better, drawing faces in high resolution. There is no problem in instructing it to create, for example, a non-existent illegitimate child of a famous person, as a provocation. The family resemblance in the picture will be one hundred percent convincing.

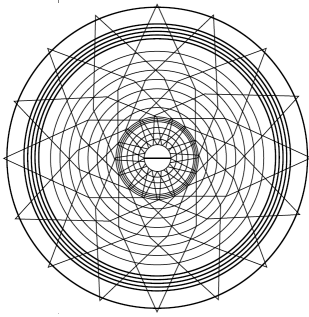
4. Targeted transformation of images.

An experiment at the Massachusetts Institute of Technology's media lab has been dubbed 'The Nightmare Machine'. Deep learning algorithms are used to transform ordinary, everyday images into scary, ominous pictures. These include photographs of popular landmarks such as the Roman Colosseum and Capitol Hill in Washington D.C., as well as the faces of politicians. Another section of the site features 'haunted faces', which had a hint of scars added. This technology makes it possible to quickly multiply and direct a shaft of negative images onto target audiences anywhere in the world, quickly adjusting to their hidden and often unconscious expectations, increasing the effectiveness of the impact. At the same time, the costs of such information-psychological operations using AI are significantly less compared to employing large numbers of people. Again, it is much easier to ensure the secrecy of an operation. Software does not 'talk', while a small group of specialists in charge of the operation is easier to control than the army of thousands of traditional propagandists.

In 2015, no one was particularly worried about fake photos. However, technology has evolved so quickly that any anonymous developer is now capable of embedding Hollywood stars in porn scenes. The Pentagon is currently spending millions of dollars to figure out how to identify AI-transformed photographs.

5. 'Poisoned data'.

The effects of training algorithms a neural network are highly dependent on the data used for such training. It may turn out that these data were incorrect and distorted, either by accident or by someone's malicious intent (in the latter case, this is called



[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

‘data poisoning’), which will affect the operation of the algorithm. Microsoft’s chatbot, named Tay.ai, was supposed to look like a teenage girl and engage teenagers on social media. But less than a day after its debut, Tay suddenly turned into a troll-loving Hitler and criticised a feminist. So what went wrong? It turned out that the ‘good’ internet users quickly taught the bot to swear and read excerpts from the book *Mein Kampf* by Adolf Hitler. This is a great example of data poisoning used for machine learning. The mathematical model used to analyse computer viruses processes an average of one million files per day, both neutral and harmful. As the threat landscape is constantly changing, changes in the model are propagated to client-side software in the form of antivirus database updates. Unfortunately, a hacker can generate malicious files that are very similar to harmless ones and send them to an anti-virus laboratory. Such actions gradually blur the line between harmless and harmful files; as a result, the model can generate false alarms.

6. Sentiment analysis.

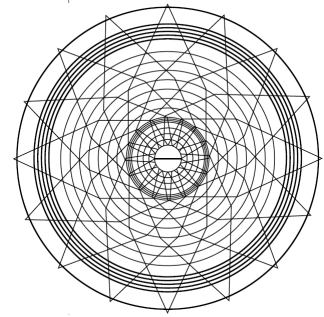
This is a class of methods of content analysis in computational linguistics, designed for the automated detection of emotionally coloured vocabulary in texts and thus the opinions of authors about the objects referred to in the text. Sentiment analysis is provided by a wide variety of sources, such as blogs, articles, forums, polls and so on. AI, machine learning and sentiment analysis allow predicting the future by analysing the past, which offers potential advantages to various government and non-government actors. Predictive weapons are particularly important – that is, methods of predictive analytics based on vast data and the use of AI, which allow recipients of data about future events to influence the future from the present for the benefit of the influencer and in disregard of the objective interests of the target of such influence. For example, in 2012, the Early Model Based Event Recognition Using Surrogates (EMBERS) programme was launched by Intelligence Advanced Research Projects Activity (IARPA). The programme predicts significant events such as social unrest, disease outbreaks and election results. EMBERS provides detailed forecasts, including the date, place, type of event and characteristics of the protesting groups, while calculating the potential error margin. The programme operates both open sources of information (for example, Twitter) and more complex and high-quality information products; for example, economic indicators, processing about five million messages a day. Over 50 forecasts with 30-day advance notice are issued by EMBERS on the chances of civil protests alone.

One can imagine that synthetic information products similar to ‘modular malicious software’ may appear in the coming years based on a combination of psychological influence techniques, complex AI systems and big data. However, they will affect not some inanimate objects, social networks and so on, but humans and masses as psychobiophysical beings. Such a synthetic information product might contain software modules with the potential to cause depression in large groups of people (Pashentsev, 2019), who will then be hit by some hidden suggestive software, appealing to their

[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



habits, stereotypes, psychophysiology and so on, with the goal of making people perform pre-defined actions.

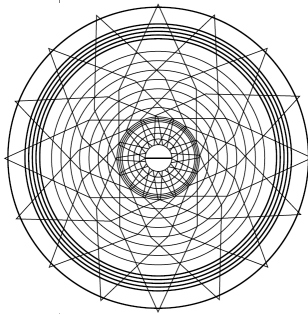
7. Technological censorship.

A new type of censorship has been added to self-censorship and political censorship: technological. Algorithms are now also judging journalistic content. At first glance, they are impartial, but they are still set up by ordinary people, with all their flaws. Here is just one example. A war for the Russian Cuisine Facebook page unfolded in mid-October 2019. This group, part of the project 'Russia Beyond', published traditional Russian recipes, as well as beautiful photos and videos with caviar, mayonnaise, pies and other gastronomic delights – and, importantly – in English, for a foreign audience. On October 15, the page disappeared from Facebook without a trace. There were 42 thousand subscribers. After a long investigation, the page was restored. However, its creators never found out what the trigger was: some chat, a press request, public outcry or something else. However tiny on the scale of the world's media, this episode may signify new and unpleasant challenges facing journalism. The media have long ceased to be 'gatekeepers' – guardians at the entrance to a magic garden with a large audience, who decided at the editorial level which news was worthy of being broadcast and which was not. They were replaced in this post by information dissemination platforms: aggregators, social networks and instant messengers. In short, technology companies. Perhaps not surprisingly, they began to carry out their own technological censorship (Pulya, 2019).

It should be said that in Europe, the use of AI technologies that violate the values of the European Union and human rights will be significantly limited. The European Commission is seeking to outlaw AI systems used for the 'mass surveillance of people'. The practice of 'social scoring' used in China for a centralised social credit rating system, as well as surveillance methods such as 'monitoring and tracing individuals in a digital or physical environment, and automatic aggregation and analysis of personal data from various sources' (Stolton, 2021) are prohibited.

Conclusion

Based on the above, we can come to the conclusion that the combination of digital services with AI not only opens up new perspectives in the development of communication processes, but also leads to the fact that numerous actions that a person performs in the communication sphere are increasingly controlled, prompted and performed by algorithms. It turns out that, on the one hand, modern algorithms help millions of people in various situations, and, on the other hand, by carrying out certain actions, they help to derive benefits for their owners, who, receiving information about customers, can use it at their discretion. However, an average user will never find out whose interests they support when they make decisions using persistent algorithms. Most likely, they don't even consider whether they trust algorithms, which reflect an unknown person's strategic and commercial interests.



[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

The awareness of possible and quite real threats to the development of human civilisation arising in connection with the uncontrolled use of AI, the lack of clear mechanisms for preventing or resolving the problems described above and fear that the relationship between AI and humans can only worsen over time have forced experts from various fields to look for appropriate means to deal with such potential risks and develop schemes to counter the malicious use of AI. Today, three main areas of such activity can be singled out: 1) control over research in this area; 2) legal restrictions; and 3) development of ethical standards. It seems that the media community should be more actively involved in finding ways to protect its audience from the malicious use of AI.

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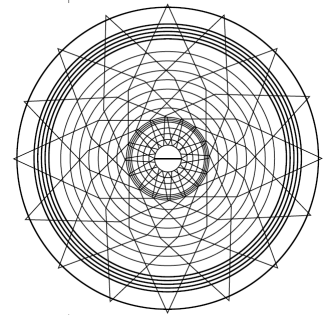
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Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



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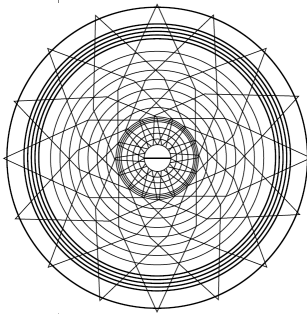
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[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*

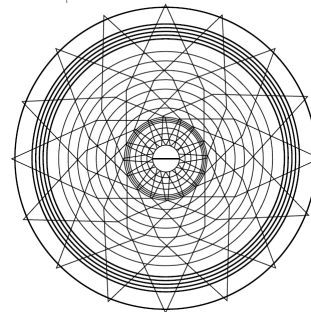
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[Scientific Articles]

Dzyaloshinsky I.

*Communication Services In the Age of Digital Civilization:
Convergence with Artificial Intelligence*



КОММУНИКАЦИОННЫЕ СЕРВИСЫ В ЭПОХУ ЦИФРОВОЙ ЦИВИЛИЗАЦИИ: КОНВЕРГЕНЦИЯ С ИСКУССТВЕННЫМ ИНТЕЛЛЕКТОМ

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Аннотация:

В статье обосновывается идея о необходимости переосмысления современного понятийного аппарата, используемого для описания процессов, происходящих в коммуникационной сфере. Вместо множества трудно определяемых и противоречивых терминов: «новые медиа», «социальные медиа», «социальные сети» и т. п. – предлагается обобщающее понятие «цифровые коммуникационные сервисы». Анализ так понимаемых цифровых сервисов свидетельствует о том, что в сфере коммуникаций технологий всё активнее используется искусственный интеллект. В статье показаны некоторые последствия такого использования.

Ключевые слова: новые медиа, социальные медиа, социальные сети, цифровые коммуникационные сервисы, искусственный интеллект