

RELEVANT INTERRELATIONSHIPS BETWEEN SCIENCE AND MASS COMMUNICATION

Oksana Kosiuk¹

¹Ph.D., associate professor Department of Social Communications Faculty of Philology and Journalism Lesya Ukrainka Eastern European National University, Lutsk, Ukraine

ORCID ID : 0000-0001-8093-1961

ABSTRACT

In the context of pandemic media audience focus their attention on scientific information. Therefore, studying this issue, we aimed to analyze modern mass communication activities as a historical phenomenon and compare it with scientific. With this objective we have researched database sources, explored web-sites of foreign and Ukrainian media, compared their subject areas, identified ways of communicating and covering scientific information, compared genre opportunities and considered the Covid-19 pandemic on a larger media-scientific scale. It has been defined that mass communication in its basic parameters is almost literal equivalent of popular level of scientific activity, so its problems and achievements are also associated with rational solution of global crises of civilization and culture.

INTRODUCTION

According to authors of “Mass communication in Media” publication, “mass media specialization, known as science journalism, began to develop in the United States in the 1950s and in Europe in the 1970s, and was penetrated by the idea that media function was to communicate scientific information as accurately as possible. Adequate scientific information communication was influenced by the fact that many specialists had come to journalism with basic education in natural sciences. Consequently, science journalism was formed within journalism itself, and penetrated into various media spheres in the form of scientific reports, where it began to dominate due to general journalism understanding as independent essential activity demanded by society” (Boyko, 2009, p. 19).

LITERATURE REVIEW

According to our assumptions, mass science communication / journalism seems to have been initiated by famous rationalist Gottfried Wilhelm Leibniz, who published “Acta Eruditorum” during the Enlightenment (Kotova, 1997). Back in the seventeenth century, mathematicians, philosophers, lawyers, and publishers could acquaint mass audience with scientific events, technical innovations, abstracts of scientific works, and phenomena reviews of scientific and technological progress. Cutting-edge scientists – creators of classical theories of rationalism, empiricism, sensualism, fideism – were involved in this work. We even inclined to consider science and mass communication, in the form of journalism, being phenomena of one paradigm, but obviously of different levels. Until the Enlightenment, they had been developing in parallel, and later started “intersecting” and “overlapping” each other.

Nowadays, science journalism is functioning in different formats: as science and popular science publications, columns in universal media, blogs, information repositories, hosting classifiers, etc. According to researchers, the main problem of science journalism is – absence of qualified staff. In the context of suggested concept (Kosyuk, 2016), this problem is unsubstantiated, because journalists must absolutely and completely rely on experts’ opinion, and only afterwards consider other participants’ testimony and impressions during communication process. But, of course, the more erudite a journalist is, the more productive his activity will be.

In this way, our vision of journalism is different from the post-Soviet view: mass media activity is not superficial, relaxing, spectacular, etc., but – on the contrary – extremely radiocentric.

Moreover, according to interpretations of Descartes, Spinoza, Leibniz, Malbransch, and others, journalism emergence – is organic demand for classical rationalism development. (Kosyuk, 2018).

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Science and journalism principles are also universal: using proven facts, reliable sources and expertise; lack of emotions, and hence simplifications and dramatizations; using exclusively proven explanations, theories, strategies. And also (already familiar): freedom of expression (when you base on facts, it is necessary to distance yourself from subjective judgments and expected conclusions); public's right to receive full information disclosure (especially if recipients' health depends on it); only legitimate methods of working with arguments and facts (including those that contain confidential information); necessity for immediate refutation of accidental errors; the right not to disclose personal sources of information (unless provided by law); proper practical evaluation of theories discriminating people by sexual orientation, language, race, religion, nationality and – especially – political views; avoiding compilations and plagiarism; delicate handling legal facts, which misrepresentation might fatally affect suspects' fate; careful attitude to private life of low profile figures; clear delineation of facts, comments, advertising; balance of expert opinions (including all available opposition views); respect the rights of journalists and experts.

Journalists receive information for publication from scientists' press releases, reports of research institutions and universities, materials from publications and audiovisualizations of scientific communities, subscriptions to electronic resources, encyclopedias, monographs, classic verbal media. Scientific reporters, commentators and editors include the following activity – selection of publications for specialized periodicals with narrow, almost caste, readers; production of scientific columns in non-specialized media; universal journalism, which more often covers scientific areas, but, as we have already noted, is similar to scientific activity itself.

The aim of our paper – is to focus on universal verbal journalism, because, according to our assumptions, it is an organic reproduction of scientific activity at comprehensible level (it differs from popular science literature only in genre variability, research depth and production volume) and to prove by concrete examples (“Nature”, “NewScientist”, “Mirror of the Week”, “Correspondent”) that modern journalism not only reproduces scientific achievements, but also uses principles, functions, technologies and strategies of science.

Problems of scientific aspects of journalism were studied by N. Zelinska (2009), V. Rizun (2009), A. Boyko (2009), O. Konovets (2009), V. Tereshchenko (1990), N. Bonitz (1987), S. Kuleshov (1995) (Boyko, 2009). Scientists have focused their attention on science journalism. We will try to identify science and universal media activity and consider them in the context of covering the Covid-19 pandemic.

The main method of our research is analogy. Not only scientific and media discourses are compared, but also ways of information content of Ukrainian and foreign media, chronotypes of scientificity, genres, etc. No less important was the content analysis – statistical technique for quantitative description of communication content and drawing conclusions based on systematic establishing characteristics of genology structural units. Modeling method could not have been omitted, because the highlight of today – the pandemic, as well as objects of our research – science and journalism – are constantly developing.

Among the most rated non-specialized online media accredited abroad are BBC websites, NewScientist, Nature, and in Ukraine there are newspapers “2000”, “Mirror of the Week”, news website “Correspondent”, etc. The oldest periodical about science – “Nature” (journal of nature research). This British popular science media, which has been published in English since 1869, in 2018 received a numerical citation rate / impact factor of 43070, which, by the way, has not often been available even to serious specialized science media.

At the beginning of the issue from 17.06.2020 (Nature. “Collections”, 2020) there are three sections: “Explore content”, “Publish with us”, “Subscribe”. Then there is an editorial entitled “Why children avoid the worst coronavirus complications”, the key idea of which is: immunity factors and

absence of complications – healthy blood vessels. Further there are different materials: “Pluto probe offers eye-popping view of neighbouring star Proxima Centauri” (news), “How BlackinTheIvory emphasizes racism in academic community” (news), “Observation of Bose-Einstein condensates in an Earth-orbiting research lab” (article), “Daily briefing: Universe’s coolest lab creates bizarre quantum matter in space” (a briefing on nature). Advertising “reduces” serious content and invites you to subscribe to publications.

Vertical journal sections. Its first block “News&Comment” offers breaking news: “Latin American scientists join the coronavirus vaccine race: ‘No one’s coming to rescue us’” (in the center there is a photo with five coffins in one grave, which is signed below: “Brazil currently has the second highest number of confirmed COVID-19 cases in the world.” This publication is marked as news. The following two blocks include other material: “Coronavirus research update: modified mice can help find vaccines and drugs” (news), “Hong Kong’s contentious national security law concerns some academics” (news), “Lab-grown cells mimic crucial moment in embryo development” (news), “Borrow crisis tactics to get COVID-19 supplies to where they are needed” (comment), “Pluto probe offers eye-popping view of neighbouring star Proxima Centauri” (news), as we remember this material has already been published in breaking news block.

Next vertical section “Latest Reviews & Analysis” is presented by editorial in oncology area “Neutrophil ‘safety net’ causes cancer cells to metastasize and proliferate” (news/views). The authors describe neutrophil cells, which generally provide immunity, but, as it turned out, under certain conditions are able to stimulate metastasis. And although this process has not yet been properly studied, it is already possible to draw certain conclusions and warn against disease. At the end of the article there is a list of sources used. In the center of publication are given e-mail addresses of Emma Nolan and Ilaria Malanchi. The material is clearly structured and “embedded” in the scientific matrix (Nolan, 2020).

At the bottom and on the right, the key material is “framed” by other headings: “Flipping the switch on the thermoregulatory system”, “Mountain-height can be controlled by tectonic force, rather than climate-driven erosion”, “Quantum matter orbits Earth”, “Tumour metabolites hinder DNA repair”, “Light turned into exotic Laughlin matter”, “Regenerative medicine could pave the way to treating baldness”, “Primitive structures found using lidar mapping technology”, “How DNA and RNA subunits might have formed to make the first genetic alphabet”, “Thousands of human sequences provide deep insight into single genomes”. All materials of this section are presented under the title “news/views.

Further below there is, perhaps, the most important section “Latest research articles”, which includes only articles aimed at expert perception. It is obvious from article titles that this information is not for general public: “Cascade of electronic transitions in magic-angle twisted bilayer graphene”, “Neurons that regulate mouse torpor”, “Observation of Bose-Einstein condensates in an Earth-orbiting research lab”, “DNA of neutrophil extracellular traps promotes cancer metastasis via CCDC25”, “Leveraging excited-state coherence for synthetic control of ultrafast dynamics”. All these publications are classic scientific articles with usual structure: abstract, keywords, relevance, theoretical basis, novelty, methods, meanings, approbations, references. It is clear that materials are presented for a serious scientometric base. Access to the main text is limited and monetized. Abstract, code, references, information about the author, ethical declarations, extended data of figures and tables, rights, comments, etc. are given separately (on the side panel).

Under purely scientific articles, “Collections” section contains a lot of material about conferences, scientific titles and careers, social media, lab work, publishing houses, scientific databases and, most interestingly, scientific communication (Nature. “Collections”, 2020). This publication is structured as a longread. In the foreword, editors note: “Most researchers try to present their results to other scientists. However, sometimes they need to convey ideas to wider audience. Here is a collection of articles that promote science among public and managers”.

This column even contains intriguing materials. For example, in the article “Feeling stuck? Close your laptop, stop your field measurements and write a poem” Sam Illingworth explains how

poetry helps to communicate and celebrate your science on the example of Vachel Lindsay's poetry, as well as references to "A Brief Reflection on Accuracy" by the Czech immunologist and poet Miroslav Holub, Sciku Project, which presents scientific discoveries and ideas in a haiku format, "the Universe in Verse" (an annual poetic celebration of science) and his own blog (Nature. Coronavirus conversations, 2020).

We are interested in the material of Pakinam Amer ("Coronavirus conversations: Science communication during a pandemic"), who explores the moral case for communicating science during the pandemic, as the choice between communicate- dissemble is close to problems of modern scientific and military journalism. Publication Thesis: Do scientists have a moral obligation to disseminate reliable information about the coronavirus? (Amer, 2020). Various experts comment on the situation. Ron Daniels, a critical-care consultant, believes that scientists, who work alongside cautious, risk-averse, called to avoid panic representatives of government and professional bodies, should carefully plug knowledge gaps. The scientist is supported by US science journalist Roxanne Khamsi, who highlighted that telling the truth – is organic human need, regardless of scientific status. Photojournalist and scientific writer Tara Haelle has opposed the outlined idea. She is deeply convinced that no one ever knows the final truth, so, generally speaking, journalists and scientists should focus on the good information and silence doubtful sensations.

In general, "Collections" are extremely important and valuable, as they are both a section, a forum for discussion and scientific database. Although there is a separate section "Scientometrics trends", which presents results of authors and publications ranking. On June 17, 2020, the leader who received 4616 likes was the material "Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe". The publication is a comprehensive work of a huge number of authors from the most prestigious universities on the continent. It contains extensive citations, sociological representations, results of research experiments, additional approbations, etc. In general, it seems that this is not an article, but a conceptual representation of the science of the future (Flaxman, 2020).

Next follows the section "Nature. Career". It announces various events: conferences, seminars, congresses, assemblies, as well as announcements about international vacancies, grants and other prospects for prestigious employment. And finally, there is information about the journal and its staff, press releases, ways to communicate with the editorial board, advertisements, partnerships, thematic columns, indexes, publication demands, manuals for potential authors, critics, editorial policy, open access, legal recommendations, additional services from researchers and editors, workshops, advertising, announcements, regional media subsidiaries in Asia and subsidiary projects, bibliographic data, etc.

In general, "Nature" makes a very positive impression: in all respects, this periodical is almost exemplary. It can successfully compete with both specialized scientific and universal media. "Nature" confirms our conceptual assumption about interrelationships between scientific and journalistic activities when working with facts and expertise.

Another foreign rating media periodical – NewScientist – is a daily bulletin closer to universal periodicals. This can be seen even from sections headings: "News", "Podcasts", "Video", "Technology", "Space", "Physics", "Health", "Mind", "Environment", "Crosswords". In this online media the highlight of today is not crucial and is presented only in eponymous column, the editorial of which is called – "This won't be the last pandemic. Where will the next one come from?" (New Scientist, 2020). This is not an article, but rather an essay filled not with expertises, but with selective facts that are taken from other world media, scientists' blogs and internal database. As a result, it makes impression far from thorough holistic research.

Worth following the experience of national online media ZN.UA ("Mirror of the Week. Ukraine"). First of all, because the editorial board originally forms sections (often new ones) on the latest issues. On March 6, 2020, there are four of them: "Zelensky's New Government", "US Presidential Elections", "Coronavirus from China", "War in Syria". At the beginning of the next week, instead of war in Syria, the topic of trial in MH17 case was introduced. On March 14, 2020, the status and list of sections are as follows: "Quarantine in Ukraine", "Trial in MH17 case", "US Presidential Elections", "Coronavirus in the World". On April 26, 2020 sections were somewhat

“shuffled” and looked like this: “Fires in Ukraine”, “Quarantine in Ukraine”, “US Presidential Elections”, “Coronavirus in the World”. Headings for the first mentioned section are reflected in the materials: “Ukraine has opened a special flight for evacuation from Europe”, “More than a hundred Ukrainian doctors confirmed Covid-19 in the last day”, “Covid-19 pandemic: major events of the week”.

And on May 6 (after heavy rains and drought ending) there were three sections left: “Quarantine in Ukraine”, “US Presidential Elections”, “Coronavirus in the World” (in two weeks this section was renamed “Pandemic Covid-19”). In addition, infection subject area has changed its vector: it is no longer about mortality statistics, protection and medicines issues, but how to overcome quarantine effectively, intensify economy and social protection. This can be seen from publications headings: “Contrary to the White House’s statements, the Pentagon has outlined its own course on coronavirus”, “Dnipropetrovsk region resumed passenger service: conditions for carriers named”, “Coronavirus tests forgery: lab-head fired in Dnipro”, “Split in EU over its rescue plan – Financial Times”, “Coronavirus, Globalization and Nationalism”, “Italy opens gyms and swimming pools”, “US Graduates will receive diplomas at car parades”, “Japan lifted state of emergency”, “GZero: Can Putin counter Covid-19?”, etc.

At the beginning of the summer, during the first wave of quarantine easing, the sections changed: traditional “Coronavirus in the World” disappeared, and popular sections “Quarantine in Ukraine”, “US Presidential Elections” were added with “Trial in MH17 case”, “Vradyivka 2.0”, “Protests through George Floyd’s death”. This trend reflected changes in visible emphasis, although incidence has been still progressing in some places. Eventually, in the first days of July, sections on quarantine and the pandemic disappeared at all, leaving “Protests through George Floyd’s death” and two more: “ZNO2020”, “Explosion in Kyiv skyscraper”.

The most interesting section for us – “Coronavirus from China” (later renamed into “Coronavirus in the World” and “Pandemic Covid-19”) – contains a huge number of publications. We offer a list of materials for only two days (March 6 and 7): “Ministry of Health has launched a chatbot on coronavirus”, “WHO sends mission to Ukraine to counter coronavirus”, “Quarantine center for coronavirus patients was destroyed in China”, “Coronavirus in Europe: more than 200 people fell ill in France in a day”, “One more citizen in Chernivtsi region is suspected of having Covid-19 infection”, “Pope will read his message online due to coronavirus”, “Covid-19 in economy: Asian dollars are sent to quarantine”, “Facebook temporarily closed offices in England due to coronavirus infection”, “Iceland declared state of emergency”, “Grand Princess has 49 Ukrainians on board – Foreign Ministry”, “Coronavirus: 12 cases of infection registered in Georgia”, “Grand Princess: 21 people confirmed coronavirus”, “The first infected with Covid-19 was found in Colombia”, “Georgia evacuates its citizens from Italy”, “197 people died of coronavirus in Italy”, “Chernivtsi citizen fined for spreading rumors about coronavirus”, “WHO dispelled hopes about coronavirus disappearance in summer”, “EU predicts rapid increase in coronavirus infections in the coming weeks”, “Coronavirus on board the liner: 12 new infected in Egypt”, “More than 160 people are infected with coronavirus in Britain”, “From March 7 restrictions at Donbass entry-exit checkpoint due to coronavirus spread in ORDLO – headquarters”, “Coronavirus: the number of infected exceeded 100 thousand”, “OPZZH deputy met infected colleague from France, yesterday he was in Rada”, “Coronavirus in the world: first death recorded in the Netherlands”, “Six cases of coronavirus infection in Ukraine have not been confirmed”, “Coronavirus confirmed in one more European country”, “Ministry of Health: 9 Ukrainians are tested for suspected coronavirus”, “4 million hryvnias allocated in Chernivtsi to counter Covid-19”, “Coronavirus infection in Wuhan may stop completely by the end of March”, “Indonesia plans to place infected with coronavirus on a desert island”, “Israel has declared quarantine in Bethlehem due to coronavirus”, “Roman marathon was canceled due to coronavirus pandemic”, “German airline company cancels more than 7,000 flights in March”, “Woman hospitalized in Donetsk region for suspected coronavirus”, “Egypt confirmed 33 new cases of coronavirus on board of a cruise ship” (Mirror of the Week. “Special column: pandemic Covid-19”).

Media publications are very different in volume. For example, publication “Ministry of Health has launched a chatbot on coronavirus” highlights opportunity to learn about Covid-19 in Telegram-bot, it is also noted that DT.UA Telegram-channel “Coronavirus_info” is constantly working “with up-to-date and current information about COVID-19 virus situation in Ukraine”. It is emphasized that this is the only Telegram channel verified by Ministry of Health (from which it can be concluded that “Mirror of the Week” has some benefits from cooperation with Ministry of Health).

Ministry of Health bot offers to get acquainted with popular questions: what is a coronavirus, what are its symptoms, how to avoid infection and treatment, how many cases of infection are confirmed in Ukraine, how virus is transmitted and tested, etc. (Mirror of the week. “Ministry of Health has launched a chatbot on coronavirus”). Publication contains hyperlinks to other materials on the site.

There is another publication (“WHO sends mission to Ukraine to counter coronavirus”), which also offers information from expert sources. In particular, we learn that World Health Organization is sending experts to Ukraine, Azerbaijan and Montenegro to monitor situation with COVID-19. The same publication provides access to previous materials on the site: “WHO dispelled hopes about coronavirus disappearance in summer”, “WHO group will come to Ukraine to help organize anti-epidemic measures next week”, “Coronavirus: the number of infected exceeded 100 thousand”. In conclusion, it is reported that “Mirror of the Week” communicates only really important news and invite you to join already mentioned Telegram-channel DT.UA.

Under information publication we see keywords/tags: WHO, Azerbaijan, Montenegro, quarantine, coronavirus (probably to simplify the search and get to the top positions of search engines), as well as invitation to read the equivalent of weekly printed edition from February 28 to March 6 (issue of printed version, as you know, stopped in early 2020).

Printed issue is not accidental – there are old sections: “Power”, “Money”, “Man”. So, this is something that is not on the site (Mirror of the Week. Archive, 2020-2021). “Quick view” link allows you to make sure: in virus section of printed newspaper there are only two publications (although next week “under this topic” were focused more publications, in particular – “Tuberculosis – fear epidemic, or How to make money from panic”, “Survive yourself and protect business. Italian lessons”, “How to improve your brain. Lesson 3 Books and knowledge that can counter viruses” etc.) in the section “Man. Health”: material by Alla Kotlyar “System testing: coronavirus already in Ukraine” (Kotlyar, 2020) and Kristina Suvorina “Coronavirus in Italy: government is not going to close borders being afraid of economic losses” (Suvorina, 2020). But this is no longer news, but full-fledged analytics.

“System testing: coronavirus already in Ukraine” – is a classic article, written professionally, taking into account all aspects: theses, arguments, expertises, conclusions and advice. Thesis: majority of population in Ukraine is convinced of government inability to counter Chinese virus timely and effectively. Arguments are presented in the form of opinion polls “New Image Marketing Group”, which answers the main questions: 51% of population believes that government will not counter the virus, 41% are afraid of getting sick, 45% believe that virus is – an artificial biological weapon. Then publication presents expertise of Andriy Skipalsky, Director of Public Health Directorate of Ministry of Health, and Viktor Lyashko, Chief State Sanitary Doctor. In such a way we find out: if a person is ill – he or she and people who have been in contact are isolated for quarantine (they are sent to infectious disease hospital if necessary), and the situation is monitored by telephone. If 10 people get sick – kindergartens, schools, universities are closed, and education and employment go online. “If more than 100 people fell ill – State Emergency Service and Ministry of Internal Affairs are being deployed. If necessary, military is also used”. (Kotlyar, 2020).

If printed issues of “Mirrors of the Week” periodical are completely self-sufficient and perfectly written, then web-site news should be considered as a part of longread content (in our opinion, this is how each section should look like in information technology era).

By the way, Kristina Suvorina’s publication “Coronavirus in Italy: government is not going to close borders being afraid of economic losses” on March 14, 2020 was the first to disappear from the site (because the borders were closed) and then reappeared (Suvorina, 2020). Instead, the internal

search engine offers other texts by this author (Archive (Suvorina Kristina)), (mainly – essays), who is probably in Italy – epicenter of European infection: “Citizens of three cities in Italian Lombardy were urged not to leave their homes because of coronavirus”, “Ukraine must take into account Italy’s experience to overcome coronavirus economic consequences”, “Italy closes shops and restaurants. Business goes online due to coronavirus”, “Coronavirus in Italy: fashion and show stars are trying to support their country”. In all these essays, Kristina Suvorina describes life in pandemic Italy as a witness. Of course, considering specifics of information, the author offers not an analytical approach, but a statement of facts.

Great interest is aroused by publication “Covid-19 pandemic: highlights of the week” (from May 26, 2020), as this review provides comprehensive information about the disease. Firstly, the reader’s attention is caught by statistics. Despite the fact that foreword is not a place for numerals, in this case 440 thousand is a key and very eloquent number.

Subsequently, publication is divided into subtopics. The first block of information “COVID-19 in the world” reports that “the largest virus epicenters are the United States (939, 235 cases), Spain (223,759 cases) and Italy (195,351 cases), “but the top ten already includes Russia, currently there are 74.5 thousand infected people in the country”. This block also has a link to previous publication informing that to counter pandemic, UN General Assembly had adopted resolution on ensuring global access to medical equipment, drugs and vaccines to counter coronavirus. This resolution was initiated by Mexico, and Ukraine became one of its main co-authors” (Mirror of the Week. “Covid-19 pandemic: highlights of the week”).

In the focus of subtopic “International Politics” there is conflict between administrations of the US and Russian presidents, who find China responsible for virus spreading and do not agree to cease hostilities in Ukraine, Syria and other countries (in response to French President Emanuel Macron, UN and G7 Security Councils). This discourse activates previous “Mirrors of the Week” 8 materials by keywords, which cover outlined perspectives of the problem in more detail.

The smallest by volume (but “filled” with two previous publications) subtopic “Economy” states that one hundred and three countries (out of one hundred and seven) are asking for aid from International Monetary Fund. In general, quarantine can cause famine in poor countries – oil exporters, which will still have to choose the “lesser of two evils” (Palivoda, 2020).

Problems of self-isolation, recreation, tourism and supply of reliable protection measures are raised in subtopic “Society”. It is emphasized that not everyone agrees with quarantine regimes, specifically Russia and the United States even voice an objection, but most countries close tourist season until next year and transfer all important actions online. As a result, number of social networking users and other discussion platforms is growing. To learn more about some aspects of social issues – readers can use the link to 8 previous publications.

Especially valuable information (with 5 prepositional expertise) about virus origin, its resilience and immunity, is offered by subtopic “Science”. Proper material arrangement does not provoke discussions – material contains comprehensive scientific summaries.

And – finally – subtopic “Ukraine” (with the help of activating nine previous materials) summarizes review and projects all aspects of the problem on internal state reality, and, as a result, readers can compare, weigh and draw necessary conclusions, etc.

Under review we observe descriptors: Ukraine, coronavirus, infection, health, pandemic, economy. These keywords will appear in the first lines of search engines for a long time in response to queries of the same name. Thus, the material is not only high quality and scientific, but also meets all the standards of modern mass communication.

As we can see, “Mirror of the Week” justifies its status as one of the most rated intellectual online media in Ukraine. By the way, in addition to scientific analysis, it offers a list of valuable recreational materials.

On March 14, 2020, another popular and status media Korrespondent.net in “Science” section offers (Korrespondent.net Science and Medicine, 2020) twelve materials, half of them is about coronavirus (presented in descending order): “Scientists announced major change in coronavirus

genome”, “WHO: coronavirus epidemic peak behind”, “Scientists found how COVID-19 spread in China”, “Effective coronavirus treatment found”, “Scientists named possible viral pneumonia nidus in China”, “Mission searching for life on Mars delayed due to coronavirus”.

Unlike “Mirrors of the Week”, “Correspondent” works inefficiently: these materials had been published during three months (although, of course, there were many other texts on health on the site). From genology perspective, each individual publication resembles essay-reprint from other sources – own database absence is indicated. However, if we combine all the texts, we will have a unique and quite chronological overview of the problem.

Apart from texts, the section contains video material marked “video”: “Coronavirus in Ukraine: latest news online”, “What to do if you have symptoms of coronavirus infection?” “Germany started closing for quarantine”, “Coronavirus pandemic: what should be considered when travelling?”, “France closes all schools and universities due to coronavirus”.

The most widely read publications are very different in Ukrainian and Russian versions. Russian publications are entirely devoted to the virus. “Scientists have proven coronavirus dependence on cold”, “Zero patient found in China”, “COVID-19 new phase spread”, “Coronavirus in Ukraine. Latest news online”, “Ministry of Health reported third COVID-19 patient condition”. Ukrainian version: “Coronavirus in Ukraine. Latest news online”, then sexual news, and – in conclusion – “Avakov: 12 COVID-19 infection cases in Horlivka”. Alongside dissemination of information, it is 50% dispelled in media and social networking. Alyona Romaniuk, a well-known fake expert and editor of “On the Other Side of the News” resource, promptly responded to misleading information about sick Ukrainians from Italy arrival (Nivroku, 2020). Several news websites republished this information, including students-journalists’ website from Lesya Ukrainka East European National University.

News website “Letters”, followed by “Rayan. Lutsk” and other media spread denial of doctor’s advice, who is supposed to work in China and advise friends via phone how to behave in a situation of coronavirus infection (Rayan. Lutsk, 2020). It is worth saying, that this pseudo-message, like many others, looks quite realistic, and audio files are difficult to identify. However, journalists managed to convincingly contradict this information. In this case they used the help of Ilya Burlachenko, assistant professor of internal medicine №2 department at Bogomolets National Medical University, who treated the issue under different heads and, among other things he sincerely admitted that he only makes assumptions in many cases, and if more reliable information appears, WHO “will inform about it and make appropriate adjustments to its recommendations”.

Since the beginning of the problem, lists of slightly forgotten fiction have been published everywhere (in particular, at our request “books about the pandemic” Google search engine offered 81 copies (MyBook – Electronic Library, 2020-2021)) and unnoticed in due time films about the pandemic. The first place of activation was received by the film “Contagion”. BBC website has the following message: Steven Soderbergh’s Hollywood film “Contagion”, released in 2011, has never become a blockbuster. Despite the star cast (the film starred Matt Damon, Gwyneth Paltrow, Jude Law, Kate Winslet), the film took only 61st place in the world according to box office revenue. However, nine years later, in 2020, “Contagion” was included in the list of the most downloaded films in the American iTunes Store, and the number of search queries containing this film’s name on Google broke all records. If in December, when we first heard about the emergence of a new coronavirus in China, the film ranked only 270th place in popularity in Warner Bros studio catalog, now “Contagion” gives plays only to “Harry Potter” (BBC. NEWS, 2020).

In contrast to audiovisual boom, filming of essential issue in the field of investigative journalism remained relatively unnoticed – 41/289 episodes in general and the first episode of the eighth season of TV series “Agents of Justice” under the iconic name “Epidemic” (Agents of Justice, 2019). The film, by the way, appeared in early December 2019 (just before the pandemic outbreak, when it was not even mentioned).

According to film plot, Agency for Independent Investigative Journalism is approached by scientists who have been quarantined at a research institute after a leak of bacteriophage / antigen of

the bubonic plague virus. Researchers understand that they have three days left to live, and ask to find out who the killer is.

Investigators – a passionate journalist and a private detective frustrated in the system of official investigations – understand that it is no longer possible to save scientists' lives, but they are doing everything to solve the crime and ensure the virus does not penetrate outside. Ironically, the leak still happens. And the whole Ukraine is going to quarantine ...

While watching the film, we learn a lot of valuable and interesting things about viruses' properties, bacteriophages, and ways to neutralize them. At the same time, we learn about the psychology and behavior strategies of criminal scientists. And although finally it turned out that panic was premature, the audience still remembers vigilance, knowledge and fear.

It is also interesting to follow the process of investigation and reconstruction of versions of the crime. The team, as we have already mentioned, includes a journalist, a private detective, as well as a psychologist, a ballistics expert, a criminologist, a physiognomist, a lawyer, a forensic expert, so data processing is fast and comprehensive. And there are many versions.

First, the assumption is made that someone unknown got into the lab and provoked catastrophe. After watching the video recorder, it is stated that only full-time employees were present at the institute when the crime happened. That is why new versions arise closely related to local scientists and their problems: from insults and settling accounts – to provocations and terrorism. However, new facts and events are narrowing the circle of suspects. Eventually, it turns out that everything happened “not according to criminal's scenario” who accidentally became a victim himself, but at the heart of the crime – envy, God complex and personal satisfaction.

While watching the film we learn a lot of new facts from the area of virology, psychology, criminology and, in addition to relaxation, we get a considerable amount of scientific knowledge and samples of schemes of classic journalistic investigations.

Alongside with knowledge production, as we have already noted, media also actively misinforms. Journalists use virus to raise their media rating. “And they are not completely ashamed in Europe – homeland of universal values and human rights – to establish panic and mock people, who are already frightened, because Europeans are not prepared to live and work in the context of difficult trials. Instead of working with state governments to explain, stop hysteria and objectively state the facts and localize pandemic, they create ratings and behave, to put it mildly, mean to their own audience” (Granite of Science, 2020). Sources of quoted information believe that all this is – a clear evidence of modern media inferiority. As if they had cooperated with political elite, virus pandemic would not have existed for a long time. But later authors contradict themselves because they state that Europe does not have laws regulating actions under the pandemic conditions. And they describe ideal situation: “After all, how could it have been? If several citizens of Northern Italy had got sick, gone to hospitals, consciously self-isolated ... However, “media brought horrors like fuel – and the engine started working energetically spraying fakes: in Madrid, the number of infected has tripled – and no one knows what do”.

Let's start with the fact that publication authors are scientists who, obviously, are not oriented in journalism area at all. Otherwise, they would understand: when there is chaos in Europe and no one knows what to do and how to treat it, media cannot regulate the situation. They only rebroadcast what happens. By the way, authors immediately confirm this themselves: “Europe does not even think of developing a law and solving the problem with coronavirus. Please note: Security Council of Europe is not meeting, no one is agreeing on how to act. All meetings are canceled ... Unfortunately, no one took responsibility. And we have what we have ...”.

And even more unprofessional scientists' behaviour when they start advertising – “as salvation” – their textbook “Security of business circles in the XXI century”. So, this is a clear negative example of unscientific approach used by experts to show their superior attitude to mass communication.

On June 9, eventually appeared the first representative investigation of IMM (Institute of Mass Media) how to correlate relationships between modern scientists and media (Institute of Mass

Media, 2020), which warns the readers not to search for scientific material at news websites of Ukrainian online media. There is miserable number of them. Instead, there is a great possibility to watch astrological predictions everywhere. IMM experts stated that during monitoring period, average indicator of news about science in the Ukrainian online media was only 1,3%. The largest amount of materials about research, experiments or popular science news was recorded at Suspilne website – 4% (from total news number at a monitoring period), at “Observer” – 3,8% and at “Mirror of the Week” – 2,8%. At the same time, no material about science has been recorded at “Know” and “Interfax-Ukraine” websites. One of the most important monitoring conclusions is that Ukrainian experts, scientists and researchers comment on only one in five scientific materials (20.3%). At the same time, comments from foreign scientists are dominating at the Ukrainian online media (79,7%).

It is obvious that health topic came to the first place in the latest researches. (50% of science media product). Journalists mainly reposted comments of foreign experts and specialized media. A large percentage of national product – hidden advertising (mostly – pharmaceutical companies and their intermediaries). The second popular topic appeared to be space (17,7%). Universe has interested Earth population not in itself, but as a probable place of living, valuable resources source and place for tourism. It was reasonable to expect that the third position was occupied by digital technologies area (13.5%): educational platforms, bots, entertainment media simulators.

No less predicted became the problem of anti-scientism and fake creation. Every third material about science turned out to be false (36.1%). The favourite topic for imitation, without a doubt, are astrological predictions that appeared on websites of quite serious media: UNIAN, “Know”, “Country”, “Channel 24”, “Observer” and, not surprisingly, received a huge number of views (in comparison with political, economic, culturological information). Serious and really scientific topics have also suffered, mainly from incorrect references, compilations, confusion with proper names of institutions, scientists’ names and surnames and – most of all – social networking pseudo-expertise.

CONCLUSIONS

Therefore, scientific and journalistic activities are inseparable today. To state facts, certify expertise, define areas of thinking and interpretations, journalism has been forced to borrow the full range of scientific resources in the areas of collecting, analyzing, implementing and disseminating information. It is no coincidence that leading media editorial staff actively cooperate with scientists, using them as full-time and special correspondents and experts. As long as no activity can do without official websites, e-mail, social networking pages, database hyperlinks, cooperation will obviously deepen to situations of absolute “merging” of global system components. This can be seen from the example of rating online periodical “Nature”, which in many respects surpasses activities of purely scientific corporate media. Trying to achieve this level, “Mirror of the Week” and a number of other Ukrainian and world media, which actively cover and try to solve the most pressing problems of mankind, such as the coronavirus pandemic. We hope that our investigation will accelerate media rationalization process and create multidimensional perspective on scientism researching in media. And these scientific works will become a source for objective verifying phenomena and processes of Postmodern science.

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