

THE WORLD OF NEW, VIRTUAL TRENDS – CENTRAL EUROPE SOCIETIES TOUCHED BY COVID-19

Urszula Soler

*The John Paul II Catholic University of Lublin
Faculty of Social Sciences
Institute of Political Science and Public Administration
Al. Raclawickie 14, 20-950 Lublin, Poland
urszula.soler@kul.pl*

Abstract

The aim of the article is to raise questions about specific trends that will shape the world after the COVID-19 pandemic. Some of them could be noticed before the pandemic started, others occurred as a consequence of it. An analysis of the current situation, with a particular emphasis on Central European countries, was made on the basis of the available internet sources and the literature on the subject. The global crisis, such as the COVID-19 pandemic, proved that the global order created for years will probably be destroyed. The crisis caused by SARS-CoV-2 virus is a global threat, but on the other hand it is an opportunity, as it forces changes and new solutions. What seems to keep the world from falling into pieces is the Internet and the related technologies. The global trends that can be observed are much broader than those of Central European countries but it is important how those countries act in relation to the trends, and whether they lose or benefit from them.

Key words: *covid-19, social trends, changes, crisis, technologies*

INTRODUCTION

It seems that the COVID-19 pandemic greatly surprised most of people, despite virologists repeating warnings of an incoming danger of a megavirus for years [21 wiek 2018, p.44]. There may be several reasons for it, just to mention that we let our guard down in the face of not so viral (despite being more lethal!) viruses, such as Ebola, SARS, MERS-CoV, A/H1N1 or Avian Influenza. None of these viruses was scary enough to prepare us for 2020, none of them was so viral, none of them equally affected all the societies around the world.

And that may be another reason for our surprise – either as societies or as individuals we are not keen to learn. Human history has shown us the consequences of smallpox (*variola vera*), polio (poliomyelitis), measles, tuberculosis and other viral diseases. We also know how many people had died of those diseases before vaccines were invented. Despite all this knowledge, the anti-vaccination movements all over the globe are on the rise, and their activists, in opposition to the scientific claims, preach various lethal effects of vaccines.

However, it is not only anti-vaxxers, who refute the scientific knowledge. Societies as groups are not keen to learn. Only this year the flu has killed almost 3.8 million of people in Poland, of which 60 have died [MJM/PAP 2020]. The vaccine against flu has been commonly available in Poland for years – it is not expensive and even publicly refunded to many people. Despite this, less than 4% of Poles vaccinate against influenza [Chmielewska 2020]. This number is higher than the world's average, reaching around 2%. Why is it so? Is the fear of vaccination bigger than of a sickness? Is it a lack of faith in the efficacy of such a vaccine, due to the frequent influenza virus mutations? Or is it due to our disregard for the threat we are got used to over the years? Will COVID-19 follow this pattern in years to come?

What seems unquestionable at this point, is that the viruses on Earth will bring changes to social, economic and perhaps even

political systems. But specific questions remain without clear answers. The first, asked by anyone is: when will this pandemic end? The second is whether we will wake up in a changed, post-COVID19 reality? Will we have to recreate it from scratch? How will it influence social groups? Will some of them disintegrate and some new appear? Will a prolonged forced quarantine become a conscious choice of many individuals with time? Will the employment structure change or new professions arise quicker? Will the global economic crisis caused by the pandemic hit the world harder than in 2008?

The year 2020 seems to be abundant in landmark events right from the start. The nature is fighting humans in many areas. There have been gigantic fires in Australia, earthquakes in Croatia and Turkey, tornadoes in the USA, volcanic eruptions in the Philippines, storms in Spain, record-breaking rainfalls and floods in Brazil), avalanches in Turkey and Afghanistan, and the highest temperatures recorded in Antarctica. SARS-CoV-2 virus causing COVID-19 comes at the top of the list. Its quick conquest caused WHO to announce a pandemic on March 11. And it was only the beginning of the year. It was the first time in history when the Pope delivered his “To the City and to the World” blessing (*Urbi et Orbi*) in empty St Peter’s Square, and Andrea Bocelli performed “Amazing Grace” in empty Piazza Duomo in Milan.

Many people recognize those events as a nature shaking off the yoke of humanity. New conspiracy theories arise, some claiming that all those events are just the introduction to a space invasion. Based on arbitrary interpretations of statistical data, people question the pandemic („it is nothing new that people die”), which, according to their claims, is a conspiracy to eliminate weaker individuals and strengthen the rules of rich people, who will get even richer thanks to the pandemic. After short dizziness, the anti-vaxxers take a stand again, saying that the virus was released on purpose by big pharmaceutical companies

to make money on a new vaccine. Even the next generation of mobile communication network - 5G - has been charged with the spreading virus. Conspiracy theories will grow even stronger with time. Like always, also the post-pandemic world will be shaped by certain trends. Some could be seen before the pandemic started, others occurred as a consequence of it. The old trends will continue to influence our reality and interact with the ones created during the pandemic. This will lead to the strengthening of some, and weakening of the others.

1. PRE-COVID19 TRENDS

1.1. International dynamics

High dynamics of international relations could be observed before SARS-CoV-2 hit our globe. A very clear conflict between USA and China, called War on Trade and Technologies [Jakóbowski 2018, Gliwa 2019] was followed by the tensions in the European Union. The chaos caused by the pandemic is influencing Brexit. Germany, Spain and the USA is accusing China of causing the pandemic and demand China to be held financially liable for the global crisis caused by the pandemic [Tomański 2020]. The secret services of Five Eyes (USA, UK, Canada, Australia and New Zealand) published a joint report on China's suppression of true data about COVID-19 spread [PAP/EPA/WU HONG 2020], at the same time there are other voices claiming that without the Chinese scientists delivering a sequenced virus to the world, work on a vaccine would not be so advanced. The rise of the epidemic in Italy showed lack of unity among the European Union countries, which at the very beginning refused immediate help to Italy, saying they had to look after themselves first. It took the EU a while to send help to Italy to make up for their negligence [European Union 2020]. In spite of this, many people predict a decrease in international solidarity, strengthening national states, and even establishing new tribes, which will support its tribesmen in the incoming crisis. This may lead to a rise of to-

talitarianism, or even a war. - it is hard to say at the moment. The trend to strengthen the old alliances is seen in Central Europe. Lithuania, Latvia and Estonia have reached a common decision to open borders between the Baltic States [Ciszak 2020]. The citizens from other countries must obey 14 days of self-quarantine. Similar decision is being considered by the governments of Poland and the Czech Republic. Prime Ministers from the Visegrad Group and German Chancellor together with the Czech Republic foreign minister, Slovak and Austria declare coming back to normal operations of almost all the borders between the countries. These „minischengen” regional arrangements are opposed by vice chair of the European Commission Margaritis Schinas. He claims that such practice will destroy the Common Market and will discriminate countries excluded from the agreements. [Maksimović 2020, Pędziwoł 2020]. According to newest calling from the European Commission declarations, the EU countries should lift all border checks within the bloc by the end of June after 14 weeks of the closure. Poland has not confirmed its decision yet.

1.2. Climate change

Climate change is the second serious trend. The most urgent problem for the Central Europe appears to be drought, which seriously endangers the economy. In many Polish regions rainfall deficit become the new average. While there is a lack of water in Central and Eastern Europe, there is an excessive rainfall in some Western European regions. According to the latest data, the total rainfall in Europe is consistent, but large areas of the continent are impacted by drought. It is in line with climate change affecting the weather patterns. According to Copernicus data [Copernicus 2020], soil humidity has been falling systematically from the end of 70s at least. In the year 2019 this level was second lowest since 1979. The number of rainy days (rainfall lower than 1 mm) has also changed. Copernicus reports that

in the large region of northern-eastern France, Germany, Poland and some Baltic countries, the number of rainy days was below average. Water shortage will influence food prices. Another reason for a food price increase is the repeated ground frosts in May. General air temperature increase, drought and fires may lead to a lower genetic diversity in the plants in Central Europe [mrtjjj 2019]. Additionally, the whole world is affected by many natural disasters: record-breaking rainfalls and floods, earthquakes, fires, volcanic eruptions, storms and avalanches. The reduction of the areas, where humans can live and work has not been stopped, which directly influences migrations. And this strengthens epidemic risks.

1.3. Migrations

Increased migrations are another trend in Europe. The first major causes of migrations is economical (illegal or legal labour migration). The other reason is the need to stay safe, especially from warzones or military conflicts territories (refugees) [Białek 2019]. With relation to climate changes and the ongoing pandemic, one may expect an increase in environmental migration, related to deficit in drinking water, natural disasters and diseases. Central Europe countries are targeted by migrants mostly from Eastern Europe and Asia, who look for a job or seek to obtain a refugee status, like Chechens traveling via Russian Federation, Ukraine or Belorussia to Poland or the Baltic countries. The economic crisis caused by the COVID-19 pandemic will increase this trend as soon as borders are open again.

1.4. Social changes

Another important trend is great social changes, including liberal democracy and global economy crisis, and protests against inequality. The rise of the pandemic strengthens this trend. The first vaccine against COVID-19 is also likely to start a heated social debate. Which country will be privileged to use the

treatment first? Will Central and Eastern Europe have access to it later than the Western European countries? Will anyone be able to afford it? Who should be the first to vaccinate? What about the selection criteria to be granted a priority? We can see scandals connected with attempts to take over pharmaceutical companies like the one connected with the President of the USA – Donald Trump [Haber 2020]. These will cause natural divisions, some of them very cruel, and this will generate mass protests, shaking the stability of the existing communities. The governments must make dramatic choices now: to „unfreeze” economy while increasing the number of infections or to keep the quarantine constraints resulting in deeper economic crisis, followed by unemployment, poverty and famine. A good example of this dilemma in Poland relates to reopening nurseries and kindergartens [Gersz 2020, Pawlik 2020]. On one hand, its purpose is to allow parents go back to work and stop receiving special social benefits heavily encumbering public finances. On the other hand, it raises the risk of infecting kids and their relatives. In the Czech Republic and in Slovakia the following undertakings were reopened: craftsmen workshops, car sale and resale shops, bazaars and marketplaces, as well as shops (not bigger than 2500 m²), driving schools, gyms, libraries and zoological gardens [PAP/EPA 2020, PAP/Forbes 2020]. Similarly to Poland also restaurants, pubs as well as hairdressers’ and beauty salons reopens slowly. The limit of people who can gather and travel together was raised up to 10. In Ukraine bazaars and parks were reopened [Polsko-Ukraińska Izba Gospodarcza 2020], and in Lithuania all shops as well as cafe gardens, hairdressers’, marketplaces, parks, zoological gardens, libraries and museums. Also restaurants, dentist’s offices, schools and kindergartens were reopened, and as of May 10th civil aviation traffic was restored [Akińczo 2020]. It is unclear how will it influence the spreading of SARS-CoV-2 in this part of Europe and if the societies will accept new rules imposed when using public

places, the rules that are very different from the pre-pandemic times.

2. NEW TRENDS FROM COVID-19 PANDEMIC TIMES

2.1. More power to governments

The pandemic created also many new trends and it can be predicted that the incoming crisis will continue this. One of the most important is a public acceptance for giving more powers to governments, which will not necessary end with the end of the pandemic [Nice 2020, Górski 2020]. The new powers apply to economy (closing the borders, limiting the movement of goods, limiting economic activity), as well as to fundamental human rights and freedoms, by increasing state control measures in societies (limitations of freedom of movement, electronic surveillance using smartphones and special applications to monitor health conditions of individuals, massively track location and interactions with other people etc.). Once granted, the „pandemic powers” will probably stay forever, because the virus may return mutated or other viruses may appear. The economic crisis resulted from the quarantine and freezing economies may lead to an increase in bankruptcies, unemployment, poverty and crime. The National Bank of Poland (as well as other central banks, for example in Romania and Croatia) started to buy government bonds and other countries will probably follow the trend [AFP 2020, Łon 2020]. This generates a risk of a rapid inflation increase in the year to come, resulting in central banks withdrawal from easing of monetary policy. The Polish government increased public debt [Muszyński 2020] and is creating next economic „shields”, but it is not clear whether governments will have enough public money for next social transfers, including raised unemployment benefits and home rent allowances? There are public opinions in Poland that the crisis will constitute a good reason to end the 500+ child benefit. A similar situation is in other Central Europe countries.

2.2. Telecommuting / remote work.

The way we work is also about to change. During the forced nationwide quarantine, most of office employees started to work remotely, and in most cases they still do. Will it continue after the pandemic ends? The estimations show that even 48% of employees will not come back to their offices on permanent basis [Barker 2020]. This will allow for cost reductions in companies during the economic crisis, but will also influence negatively the office rental market. Additionally, it is very probable that some professions, useless during pandemic, will vanish, while others will grow in importance, and some new will be created. Mass events industry is one example of the whole branch looking for new ways to operate. But this is not the worst, because you can imagine that after the pandemic is over people will start extending concerts and other shows. Much bigger challenge was created for the MICE industry (Meetings, Incentive, Conference, Exhibitions), called also Meetings industry. If all meetings can be successfully organised remotely, what is the reason for organizing conferences or sending employees on expensive business trips? The pandemic also heavily disturbed global supply chains and showed us how fast some resources could be depleted. That is why some experts say that the way we produce goods also has to change. Retailers should end importing goods from distant locations and find local suppliers [Łukasik 2020]. It may be of great importance as the chance to speed up economic growth in Central Europe as production costs here are still lower than in the Western part.

2.3. Decreasing health level in societies

The next important new trend is a general decrease of health level in societies matched with lowering overall healthcare systems performance and quality. During pandemic all healthcare systems focused on fighting COVID-19 and at the same time they neglected other diseases, including chronic diseases. Medical

diagnosis is in most cases is carried out using telephone calls, and people waiting for a surgery or other medical operations have very limited access to a proper medical care. One of the potential solutions to such problems, available in not so distant future, may be development of AI (artificial intelligence) in medical applications. Additional urgent problem will relate to mental health of people quarantined for many weeks, isolated from their relatives, fighting fear caused by the virus or a job loss. Many of them will face the risk of mental depression. Negative contribution to society health level will have closures of small companies resulting with suicides and homelessness. Without proper public intervention these may be not direct, ut important victims of the virus. Additionally, common quarantine is a perfect indicator of the quality of our relationships [Romanowska 2020]. Many of them will get stronger, but some will disintegrate, what can be seen in China, where there is a high increase in number of divorces [KG/Onet 2020]. We do not know what the situation in Poland and the neighbouring countries will look like, because the judicial courts have not reopened yet.

2.4. Goods consumption model

It is difficult to forecast now if or how the consumption model will change. There are estimates that due to the incoming crisis 50% of Polish society will pauperise [Parkiet 2020]. Will we still be buying trendy shoes, suits and ties? Or will those goods become luxury? Will malls and retail parks remain the Poles', Czechs' and Hungarians' favourite places to spend their free time or will the pandemic kill these shopping sanctuaries and shopping itself is going to move online? As for now in Poland, despite malls were reopened on May 4th, most of the time they are not overcrowded and next brands quit their activities [MB 2020]. This lack of interest for excessive shopping may result from a fear of losing a job and a reduction of income sources. At the same time home improvement centres (like IKEA) and build-

ing supplies stores are besieged by people, who spend most of their time at home and try to improve their closest environment. Similar trend may be seen in other countries.

2.5. E-society

The pandemic shows that more and more actions will be executed remotely. The common quarantines and locking people in their homes created an opportunity for e-commerce and e-services to flourish rapidly. This will quickly increase the importance of quick and reliable Internet connectivity and IT specialists including cybersecurity experts, will be more important than ever before. An increased connectivity will also allow for a repaid growth of various conspiracy theories. The existing ones will be strengthened, including the antivaxxers, 5G fighters, New World Order believers and masonry hunters. But probably some new ones will appear. Such movements will be naturally fed by organised disinformation, as a part of different information wars. In Poland, such online group – named „Coalition Poland Free of 5G” [Koalicja polska wolna od 5G 2020] takes active part in official legislative procedures, claiming social participation mechanisms. In Slovakia and in the Czech Republic even before the pandemic started there were massive protests against the new generation of mobile communication standard [Strauchmann 2020, Novosad 2020]. Such actions may grow in strength, especially after proliferated claims that 5G is responsible for spreading the SARS-CoV-2 virus [Domański 2020]. You may expect also massive protests against vaccinations against Covid-19, as well as protests against the limiting of human rights and freedoms during the pandemic. Such protests have taken place in Stuttgart, Germany [Mal 2020, X-news 2020]. The demonstration was attended by up to 10 thousand people.

2.6. Artificial Intelligence

The development of artificial intelligence (AI) will impact all of us

heavily, also in the context of fighting the pandemic. The European Union initiative to create global monitoring “Living Earth Simulator” [Paolucci et al. 2013], by accumulating and analysing any available data on Earth and humans, may radically reduce surprises and allow us to forecast the weather much more precisely and for longer periods. It could even allow us to forecast next global diseases outbreak centres and track their development. The price for it may be a necessity to implant a chip into every person’s body, to monitor basic health parameters and track individual movements [TK 2020]. Some compare such implants to the sign of the Beast from the Apocalypse [Stopka 2020]. This creates even more space for more conspiracy theories. Before the pandemic such massive chip implanting activities were not publicly discussed.

What would be the public acceptance level for this if home lock-in would be longer and people having chips could have relaxed obligations? In Poland we have a phone application mandatory for people under individual quarantine [Gov.pl. Aplikacja 2020], but there was an idea to implement another one – ProteGo. It was planned to track everyone and register phone numbers of people we meet wherever we go. [Sosnowska 2020]. If a person is diagnosed with COVID-19 the whole network will be identified and informed. The Ministry of Digital Affairs informs that the purpose of ProteGo application is to control how COVID-19 is spreading. „We want to achieve it using Bluetooth technology to build a network of connections between cell phones users. This application will not gather data nor track users locations” [Gov. pl. Życie 2020]. Similar application is being used in Singapore and the UK. Norway is working on similar solutions. [Momo/rzw 2020].

The supporters of such solutions argue that it could radically limit the virus spread [Ferretti et al. 2020]. The key function is to locate human-nodes, who have extended number of social contacts, and accumulate highest risk of virus spreading. And what

about the potential side effects? Such application could lead to building division, social stigmatisation, creating ghettos as well as hacking. Even currently people under individual quarantine are subject to ostracism or aggression [Bogucka 2020]. It also applies to doctors, nurses and other medical staff, who are even forced to leave their homes [Rp.pl 2020]. In Poland opinions on the application are strongly divided. One side argue that it is a dangerous attempt to limit civil liberties, while the other that it could be an easier form of individual quarantine. Again, it was impossible to think about a government building such an app before the pandemic. Today we care more about our health than about our liberties. When this article was finished The Ministry for Digital Affairs cancelled the app from the public, due to some vulnerabilities discovered by independent security experts, but it may be back after a while.

It seems that the CAOVID-19 pandemic changed the social perception of new technologies. Before it, the Internet, computers, tablets and smartphones were perceived mostly as the source of funny recreation, communications and information and knowledge gathering, but they were not necessary. During the crisis they constituted a critical infrastructure, indispensable; like electricity and water and sewage systems – technologies who were heavily opposed over a hundred years ago in a similar way like current protests against 5G mobile communications technology [Mileszko 2020].

CONCLUSIONS

It seems that the COVID-19 pandemic marks the end of a world as we know it. But it is not the only challenge we are facing now. The freezing of economies all around the world will cause a much more dangerous crisis – the economic recession, which will result in a number of social, economic and maybe political changes. The post-pandemic world will be shaped by certain trends. Some were seen before the pandemic started, others

have occurred as a result of it. The old global trends will still influence our reality, and most of them will interact with the results of the COVID-19 pandemic, leading to the strengthening of some of those trends as well as weakening of the others. The most important are climate changes, resulting in severe drought in large European areas and people migrations. The latter may contribute to the spreading of SARS-CoV-2 virus as well as its potential mutations. Another very risky trend, judging from the traditionally democratic point of view with human rights and freedoms in the centre, is allowing the governments to take more powers away from individuals – the powers that will probably remain for long. The special value lies also in the rapid technological transformation: e-services, distant learning, remote work, AI in medical analytics and exchanging information about rollout of the pandemic and managing the response for it – all of it will heavily influence the development of various aspects of our lives, changing the way we live, and limiting our freedoms at the same time. You may ask a question whether in the post COVID-19 world technology will make us totally dependent on it?

The global crisis, like the COVID-19 pandemic, proved that the global order created for years will probably be destroyed. The Internet and the related technologies seem to be the factors that keep the world from falling into pieces. The problem is that we try to apply modern technologies to social schemes from the previous century. A good example is the education system, which was forced to go online in the first week of the lockdown. The education system was never meant to work remotely and has no idea how to perform in this way. Two months of attempting to restart Polish schools online proved that distance learning cannot be learnt quickly. Switching the education system from offline to online requires solid changes to the syllabuses, good standardised hardware, common access to quick and reliable broadband Internet and months of trainings for teachers,

students and parents. The common switch to online was easier in some companies, where people benefited from more autonomous working environment and had at least some experience remote working before the pandemic, but still many industries were heavily hit by the difficulties of this crisis, because they had no chance to prepare for it.

Such a crisis also always creates a chance, because it forces changes, searching for new ways and new solutions. Parcel delivery industry is a good example of using technologies to quickly adapt while innovating. Agriculture industry started to deliver directly to consumers. Restaurants opened delivery services and used Internet for promotion and taking orders. The use of online media was promoted directly by Bill Gates, when he argued that watching online video on how a meal is being prepared is the strongest incentive to place an order [Łukasik 2020]. Public authorities also try to innovate, like in Holland where the City of Amsterdam implements a new strategy for sustainable green development, called 'doughnut economics' [Januszewska 2020]. It looks like after this global pandemic resets, all things will go back into place, but in different forms. You may get with the times or perish. There are voices that in the biggest long-term loser of the pandemic may be China [Bielecki 2020]. China provided worldwide outsourcing services for an enormously large scale, quickly developing to the position of technological leader. That also included advancement in AI practical use cases as well as developing its own most advanced 5G mobile communications technology. All the trends will be shaping the future of the countries in Central Europe. Despite the fact that the joint potential of these countries is too weak to influence the global trends, it is still important how the countries react, and whether they lose or benefit from them.

REFERENCES

- AFP, (2020), Europa Środkowa w walce z pandemią wirusa, [online], [2020-05-08], available on: <https://biznes.interia.pl/gospodarka/news-europa-srodkowa-w-walce-z-pandemia-wirusa,nId,4426818>
- Akińczo A., (2020), Litwa: Rząd zapowiada stopniowe „odmrażanie” gospodarki, [online], [2020-05-24], available on: <https://forsal.pl/artykuly/1469549,litwa-rzad-zapowiada-stopniowe-odmrazanie-gospodarki.html>
- Barker S., (2020), Gartner updates 2020 future of work trends for post-pandemic world, [online], [2020-05-20], available on: <https://diversitywatch.asia/story/gartner-updates-2020-future-of-work-trends-for-post-pandemic-world>
- Białek K., (2019), Migracje na świecie, [online], [2020-04-14], available on: <https://globalna.ceo.org.pl/geografia-wiedza-o-spoleczenstwie/artykuly/migracje-na-swiecie>
- Bielecki J., (2020), Chiny nie zajmą miejsca Ameryki przez wirus z Wuhan, [online], [2020-05-018], available on: <https://www.rp.pl/Koronawirus-SARS-CoV-2/305049910-Chiny-nie-zajma-miejsca-Ameryki-Przez-wirus-z-Wuhan.html>
- Bogucka N., (2020), Zachodniopomorskie. Spędzał kwarantannę na działce. Obrzucili go kamieniami, [online], [2020-05-15], available on: <https://www.o2.pl/informacje/zachodniopomorskie-spedzal-kwarantanne-na-dzialce-obrzucili-go-kamieniami-6506855621671041a>
- Ciszek P., (2020), Odmrażanie granic. Litwa, Łotwa i Estonia tworzą wolną strefę dla podróżnych, [online], [2020-05-20], available on: <https://www.money.pl/gospodarka/odmrazanie-granic-litwa-lotwa-i-estonia-tworza-wolna-strefe-dla-podroznych-6510672920737409a.html>
- Chmielewska M., (2020), Mniej niż 4 proc. Polaków szczepi się przeciwko grypie, [online], [2020-05-08], available on: <https://www.medexpress.pl/mniej-niz-4-proc-polakow-szczepi-sie-przeciwko-grypie/75780>
- Ciesielska-Klikowska J., (2020), FocusOSA #148: Relacje Niemcy-Chiny, [online], [2020-05-10], available on: <http://osa.uni.lodz.pl/?p=10941>
- Copernicus. Europejskie obserwatorium ds.Susz, (2020), [online], [2020-05-04], available on: <https://www.copernicus.eu/pl/europejskie-observatorium-ds-susz>
- Domański T., (2020), Połączył COVID-19 z 5G. David Icke musiał zniknąć z YouTube'a, [online], [2020-05-20], available on: <https://www.spidersweb.pl/2020/05/koronawirus-5g-teorie-spiskowe-david-icke-youtube.html>
- European Union, (2020), Coronavirus response, [online], [2020-05-15], available on: https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response_en

Ferretti L., Wymant C., Kendall M., et al., (2020), Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing, *Science* 31 Mar 2020; [online], [2020-05-12], available on:

<https://science.sciencemag.org/content/early/2020/04/09/science.abb6936/tab-pdf>

Gersz A., (2020), „Otwarcie pola do wymiany wirusów”. Lekarze o posyłaniu dzieci do żłobków i przedszkoli, [online], [2020-05-20], available on: <https://natemat.pl/307345,ppoz-krytykuje-otwarcie-zlobkow-i-przedszkoli-w-apelu-to-jakis-absurd#>

Gliwa S., (2019), Technologiczna zimna wojna. Chińczycy wyrzucają amerykański sprzęt, [online], [2020-05-09], available on: <https://cyberdefence24.pl/technologiczna-zimna-wojna-chinczycy-wyrzucaja-amerykanski-sprzet>

Gov.pl, (2020), Aplikacja Kwarantanna domowa. Ruszył proces jej udostępniania, [online], [2020-05-10], available on: <https://www.gov.pl/web/koronawirus/kwarantanna-aplikacja-kwarantanna-domowa--ruszyl-proces-jej-udostepniania>

Gov.pl, (2020), Życie po kwarantannie – przetestuj ProteGO, [online], [2020-05-12], available on: <https://www.gov.pl/web/cyfryzacja/zycie-po-kwarantannie--przetestuj-protego>

Górski J., (2020), Koronawirus a prawo – wszystko co musisz wiedzieć, [online], [2020-05-14], available on: <https://www.prawo.pl/zdrowie/koronawirus-a-prawo-wszystko-co-musisz-wiedziec,498699.html>

Haber M., (2020), Trump chciał kupić firmę pracującą nad szczepionką na koronawirusa,

[online], [2020-05-04], available on: <https://zdrowie.wprost.pl/koronawirus/na-swiecie/10306871/trump-chcial-kupic-firme-pracujaca-nad-szczepionka-na-koronawirusa-niemcy-potwierdzaja-a-ambasador-usa-zaprzecza.html>

IAR/PAP, (2020), Pierwszy tydzień otwarcia galerii handlowych. Zobacz, ilu Polaków wybrało się na zakupy, [online], [2020-05-20], available on: <https://www.polskieradio24.pl/42/259/Artykul/2511264,Pierwszy-tydzien-otwarcia-galerii-handlowych-Zobacz-ilu-Polakow-wybralo-sie-na-zakupy>

Jakóbski J., (2018), Konflikt handlowy USA–Chiny. Etap drugi, [online], [2020-05-08], available on: <https://www.osw.waw.pl/pl/publikacje/komentarze-osw/2018-07-04/konflikt-handlowy-usa-chiny-etap-drugi>

Januszewska P., (2020), A po pandemii chodziliśmy na pączki, [online], [2020-04-18], available on: <https://krytykapolityczna.pl/swiat/ue/koronawirus-amsterdam-doughnut-economics/>

KG/Onet, (2020), Chiny mają nowy problem. Rośnie liczba rozwodów, [online], [2020-05-05], available on: <https://wgospodarce.pl/informacje/76750-chiny-maja-nowy-problem-rosnie-liczba-rozwdow>

Koalicja polska wolna od 5G, [online], [2020-05-04], available on: <http://stop5g.com.pl/>

Łon E., (2020), Narodowy Bank Polski jako monobank rynkowy, [online], [2020-05-15], available on: <https://wgospodarce.pl/opinie/77992-narodowy-bank-polski-jako-monobank-rynkowy>

Łukasik M., (2020), Epidemia zmieni nasze życie na zawsze. Wielcy tego świata podpowiadają, jak się zaadaptować, [online], [2020-05-04], available on: <https://www.money.pl/gospodarka/epidemia-zmieni-nasze-zycie-na-zawsze-wielcy-tego-swiatea-podpowiadaja-jak-sie-zaadaptowac-6505379793942145a.html>

Maksimović S., (2020), What happened to the “mini-Schengen”?, [online], [2020-05-22], available on: <https://europeanwesternbalkans.com/2020/03/06/what-happened-to-the-mini-schengen/>

Mal P., (2020), Niemcy przygotowują się do protestów w wielu miastach, [online], [2020-05-20], available on: <https://www.rp.pl/Koronawirus-SARS-CoV-2/200529817-Niemcy-przygotowuja-sie-do-protestow-w-wielu-miastach.html>

MB, (2020), Otwarcie galerii handlowych. Sklepy świecą pustkami. Tłumy przed Ikea, [online], [2020-05-24], available on: <https://wiadomosci.gazeta.pl/wiadomosci/7,173952,25917310,otwarcie-galerii-handlowych-sklepy-swieca-pustkami-tlumy-pod.html>

Mileszko T., (2020), Absurdalne fake newsy na temat 5G w Polsce - oto, co krąży w polskiej sieci, [online], [2020-05-16], available on: <https://www.komputerswiat.pl/artykuly/redakcyjne/absurdalne-fake-newsy-na-temat-5g-w-polsce-oto-co-krazy-w-polskiej-sieci/ylgt-5py>

MJM/PAP, (2020), Sezon grypowy 2019/2020: liczba zachorowań na grype i zgonów, [online], [2020-05-08], available on: <https://pulsmedycyny.pl/sezon-grypowy-2019-2020-liczba-zachorowan-i-zgonow-na-grype-982828>

Momo/rzw, (2020), Bezpieczeństwo w zamian za prywatność? Kolejne kraje stosują aplikacje śledzące do walki z wirusem, [online], [2020-05-12], available on: <https://tvn24.pl/swiat/koronawirus-z-chin-aplikacje-do-walki-z-epidemia-wprowadzaja-kolejne-kraje-4522485>

mrtjjj, (2019), Globalne ocieplenie może zmniejszyć różnorodność genetyczną roślin w Europie Środkowej, [online], [2020-04-06], available on: <http://scienceinpoland.pap.pl/aktualnosc/news%2C78443%2C-globalne-ocieplenie-moze-zmniejszyc-roznorodnosc-genetyczna-roslin-w-europie>

Muszyński M., (2020), Zadłużenie Polski wyższe o niemal 100 mld zł, [online], [2020-05-20], available on: <https://www.forbes.pl/gospodarka/dlug-publiczny-polski-w-2020-roku-olbrzymi-wzrost-przez-pierwsze-4-miesiace-roku/kmzvdnn>

Nice A., (2020), Legislation to manage the coronavirus pandemic, [online], [2020-05-04], available on: <https://www.instituteforgovernment.org.uk/explainers/legislation-manage-coronavirus-pandemic>

Novosad A., (2020), „Stop 5G“. V Bratislave sa dnes protestovalo proti štátnej karanténe, cez mesto sa vybrala hlučná kolóna áut, [online], [2020-05-08], available on: <https://refresher.sk/84088--Stop-5G-V->

Bratislave-sa-dnes-protestovalo-proti-statnej-karantene-cez-mesto-sa-vybrala-hlucna-kolona-aut?gdpr-accept=1

Paolucci M., Kossman D., et.all, (2013), Towards a living earth simulator, *The European Physical Journal Special Topics* 214(1).

PAP/EPA, (2020), Czechy się odmrażają. Ostatnia faza znoszenia restrykcji obejmuje gastronomię, turystykę, usługi taxi, [online], [2020-05-24], available on: <https://www.gazetaprawna.pl/artykuly/1479075,czechy-znoszenie-restrykcji-ostatnia-faza-gastronomia-turystyka-taxi.html>

PAP/Forbes, (2020), Czechy znoszą kolejne restrykcje i stopniowo odmrażają gospodarke, [online], [2020-05-24], available on: <https://www.forbes.pl/gospodarka/koronawirus-znoszenie-obozrzen-w-czechach/5x6ybf>

PAP/EPA/WU HONG, (2020), Raport wywiadów: Chiny ukrywały prawdę o epidemii, [online], [2020-05-04], available on: <https://www.polsatnews.pl/wiadomosc/2020-05-04/raport-wywiadow-chiny-ukrywaly-prawde-o-epidemii/>

Parkiet, (2020), Analitycy CFA: Obawy o lawinę bankructw, [online], [2020-05-20], available on: <https://www.parkiet.com/Gospodarka----Kraj/304039908-Analitycy-CFA-Obawy-o-lawine-bankructw.html>

Pawlik P., (2020), Które miasta otworzą żłobki i przedszkola w woj. śląskim?, [online], [2020-05-20], available on: <https://wiadomosci.onet.pl/slask/ktore-miasta-otworza-zlobki-i-przedszkola-w-woj-slaskim/kvmxsw0>

Pędziwoł A., (2020), Mini-Schengen bez Polski?, [online], [2020-05-22], available on: <https://www.dw.com/pl/mini-schengen-bez-polski/a-53505488>

Polsko-Ukraińska Izba Gospodarcza, (2020), Odmrażanie gospodarki w Ukrainie, [online], [2020-05-24], available on: <https://www.pol-ukr.com/odmrazanie-gospodarki-w-ukrainie/>

Romanowska K., (2020), Czas szalonych, gwałtownych miłości. Jaki będzie seks po pandemii?, [online], [2020-05-04], available on: <https://www.newsweek.pl/polska/spoleczenstwo/seks-po-pandemii-jak-zmienia-sie-milosc-zwiazki-i-nasze-seksualne-zwyczaj/471vxzs>

Rosiak D., (2019), Amerykańsko-chiński konflikt o technologie, [online], [2020-04-04], available on: <https://polskieradio24.pl/9/313/Artykul/2311324,Amerykansko-chiński-konflikt-o-technologie>

Rp.pl, (2020), Niepokojący hejt i ataki na pracowników ochrony zdrowia, [online], [2020-05-10], available on: <https://www.rp.pl/Lekarze-i-pielegniarki/304179899-Niepokojacy-hejt-i-ataki-na-pracownikow-ochrony-zdrowia.html>

Sosnowska J., (2020), Rząd tworzy aplikacje, dzięki której dowiesz się, czy spotkałeś zakażonego koronawirusem, [online], [2020-05-10], available on: <https://wyborcza.pl/7,156282,25843693,rzad-tworzy-aplikacje-dzieki-ktorej-dowiesz-sie-czy-spotkales.html>

Stopka A., (2020), Co ma chip do Apokalipsy św. Jana?, [online], [2020-05-15], available on: <https://pl.aleteia.org/2017/08/17/come-chip-do-apokalipsy-sw-jana/>

Strauchmann K., (2020), Sieć 5G w czeskim Jeseniku budzi kontrowersje wśród mieszkańców. Ludzie protestują, [online], [2020-05-08], available on: <https://nto.pl/siec-5g-w-czeskim-jeseniku-budzi-kontrowersje-wsrod-mieszkancow-ludzie-protestuja/ar/c1-14845886>

TK, (2020), Chip w ręce zastąpi portfel, klucze i bilety? Chipy RFID to początek biblijnej apokalipsy?, [online], [2020-05-15], available on: <https://dziennikzachodni.pl/chip-w-rece-zastapi-portfel-klucze-i-bilety-chipy-rfid-to-poczatek-biblijnej-apokalipsy/ar/c1-13664050>

Tomański R., (2020), Chiny naciskają na Unię Europejską, żeby mówić o nich tylko dobrze, [online], [2020-05-10], available on: <https://wyborcza.pl/7,75399,25910823,chiny-naciskaja-na-ue-zeby-mowic-onich-tylko-dobrze.html>

X-news, (2020), „Koronawirus to kłamstwo”. Protest antyszczepionkowców w Niemczech, [online], [2020-05-20], available on: <https://wiadomosci.dziennik.pl/swiat/artykuly/7697803,koronawirus-covid-19-klamstwo-protest-antyszczepionkowcy-obostrzenia-niemcy-wideo.html>

21 wiek, (2018), Grozi nam apokalipsa? 9 niebezpiecznych chorób wirusowych, , 4/2018, s. 44.