



Mobility in a Post-Pandemic City: Subjective Considerations Based on Observations and ‘The Plague’ by Albert Camus

Jacek Szoltysek¹

[Received: 14 May 2020; accepted in final version: 15 July 2020]

Abstract. *The functioning of the city during a pandemic under the influence of social isolation forced by the state authorities and the suspension of a significant part of economic activity forced by administrative decisions causes changes in the minds of the city's inhabitants. This will highly likely translate into a new image of the city in the post-pandemic period. The aim of this article is to review the antecedents of the functioning of the post-pandemic city and to outline the premises of probable changes in the mobility of the inhabitants of the post-pandemic city. The aim is to point out the changes that occur as a result of responding to the pandemic in sudden reaction mode, which are likely to occur again in the future and are related to the consequences described inductively as the following sequence: inhabitants' emotions—changes in behaviour—organisational, political and social changes—infrastructural changes—potential impact on inhabitants and functioning of the city. The awareness of the possibility of such changes is important for all those whose professional and personal lives are connected with cities, as anticipating changes allows for proactive reactions, reducing possible failures. Since we, mankind in the 21st century, consider ourselves a species that is reasonable and teachable with respect to its own mistakes, I recognize in these considerations the context of an epidemic such as described by Albert Camus in his novel The Plague, indicating that we have not learned from what we experienced almost 100 years ago with the Spanish flu.*

Keywords. *post-pandemic city, mobility, epidemic, quality of life, public space.*

[Diterima: 14 Mei 2020; disetujui dalam bentuk akhir: 15 Juli 2020]

Abstrak. *Berfungsinya kota-kota selama pandemi dalam pengaruh isolasi sosial yang diterapkan oleh pemerintah dan penanggulangan sebagian besar aktifitas ekonomi oleh keputusan administratif menyebabkan perubahan pemikiran penduduk kota. Keadaan ini akan sangat mungkin diartikan sebagai citra baru kota di periode pasca-pandemi. Tujuan dari artikel ini adalah untuk mengulas fungsi kota pasca-pandemi yang lampau dan untuk menguraikan hal-hal yang mungkin berubah pada mobilitas penduduk kota pasca-pandemi. Ini untuk menunjukkan perubahan yang terjadi sebagai akibat reaksi secara mendadak terhadap pandemi yang mungkin terjadi di masa depan, dan terkait dengan konsekuensi yang digambarkan secara induktif sebagai sebuah urutan: emosi penghuni – perubahan perilaku – perubahan organisasi, politik dan sosial – perubahan infrastruktur – dampak potensial terhadap penduduk dan fungsi kota. Kesadaran akan kemungkinan perubahan tersebut penting bagi semua orang yang kehidupan profesional dan pribadinya terhubung dengan kota, karena mengantisipasi perubahan memungkinkan reaksi proaktif yang dapat mengurangi kemungkinan kegagalan. Sebagai umat manusia abad ke-21, yang menganggap diri kita spesies yang berakal dan dapat belajar atas kesalahannya sendiri, penulis menengarai dalam konteks wabah, sebagaimana dikatakan oleh Albert Camus dalam*

¹ University of Economics, Katowice, Poland. E-mail: szoltysek@uekat.pl

novel *The Plague*, kita belum belajar dari apa yang kita alami dengan Spanish flu hampir 100 tahun yang lalu.

Kata kunci. kota pasca pandemi, mobilitas, epidemi, kualitas hidup, ruang publik.

The plague bacillus never dies or disappears for good; (...) perhaps the day would come when, for the bane and the enlightening of men, it would rouse up its rats again and send them forth to die in a happy city.

(Camus, 1948, p. 278)

Introduction

The appearance of the coronavirus SARS-CoV-2, which causes COVID-19, has brought about changes in the way people and cities function in a similar way to the Spanish flu that affected the world in 1918 and 1919.² At the time, the epidemic was willingly compared to the plague, which as the most terrible disease imaginable burned the stigma of fear in people's consciousness. The trauma of the plague was revived when the Spanish flu proved to be more lethal than the First World War. However, the measures ordered in Polish cities in response to the Spanish flu were not as drastic as in 2020. In 1918, schools were closed for weekly periods, cinemas and theatres were not closed (with the exception of Rzeszów), limiting themselves to the recommendation "we should stop and abandon all kissing as at least a welcome and goodbye. [...] Let us abandon all kissing on the hands. Let's publicly throw a glove at least to those stencilled, machine-like kisses and let's be determined not to spit any more and let's not spread any disease seedlings", as a reader called for in *Kurier Warszawski* (Stańczyk, 2020). Admittedly, in the narrative by Eleanor McBean, an eyewitness of the 1918-1919 epidemic, a doctor and a fierce opponent of vaccination, we find a slightly different description, concerning an American city that was completely extinct: "When the flue was at peak, all the stores were closed as well as the schools, businesses – even the hospital, as the doctors and nurses had been vaccinated too and where down with the flue. No one was on the streets. It was like a ghost town" (McBean, 1977, Chapter 2). However, this was not the result of prevention but of the extent of the epidemic. In 2020, most countries, and generally cities too, have implemented relatively wide and severe restrictions on their inhabitants' personal freedom. But did they implement them on time and in the right proportion? Will the SARS-CoV-2 pandemic teach people something and change the city, or will it leave a trace as small as the N1H1 epidemic did?

The description of a city³ in the state of an epidemic can be found in the novel *The Plague* by Albert Camus. "As a result of the fast-growing plague the town gates of Oran were closed and Oran became isolated. And the diseased ones were also isolated. A feeling of exile and isolation prevailed all over Oran, which was completely new for the people of Oran. All the trade and commerce cut off from Oran, cinemas and restaurants were forced to close, which made the

² The end of the 19th and the beginning of the 20th century was a period of numerous outbreaks of cholera, typhus and dysentery, and World War I brought the Spanish flu (H2N2 virus), which American soldiers brought with them to France, from where it spread to the whole of Europe and, according to various experts, caused between 50 and 100 million deaths worldwide. The number of people affected is estimated at around 500 million. (Zahorski, Zendran, 2018). In Poland, the virus first appeared in the summer of 1918, from late autumn there was a 33-week break and it re-emerged in 1919. As a result about 200-300 thousand people died (Wnęk, 2014).

³ In the story its name was Oran.

citizens more restless and irritable. All sort of communication and transport except telegraphic messages were stopped.” (Sreekumar, 2019, p. 146). Isn't this a picture of a modern city in the era of COVID-19? Shouldn't this work be required reading for community leaders on different levels of authority? This is why I decided to illustrate the individual parts of the following considerations with quotations from this shocking piece of literature. Quotes from this well known novel are woven into the narrative to sharpen our view on the described phenomena without changing its diagnostic and speculative character in any way.

The structure of the authorities' work permeates all the events associated with the pandemic and the logical dependencies that result from them. Because of the high risk of human infection, the principles of social isolation were implemented, which introduced significant changes in mobility. The reaction of a dominant number of governments to the appearance of COVID-19 was similar, but the response of the population was varied. It is difficult to compare the disciplined inhabitants of China, or South Korea with those of Italy or the British. What happened in the period of several months from February 2020 to May 2020 in Polish cities was on a comparable footing with the situation in other cities (in Russia, Great Britain, Spain, Italy and Germany). The observations concern both the steps taken to limit contacts between people, their sequence as well as the narrative in the media, including social media. Guided by the transparency of these deliberations I do not draw conclusions from these observations but only generalise my feelings. The reactions of the inhabitants of Polish cities observed by me as presented in this article proves that the emotional response to the appearance of the pandemic was similar all over the world, although different in different demographic groups. Social isolation leads on the one hand to the calming of fears and on the other hand to an increase of emotional tension associated with forced lifestyle changes, reduced mobility and fears about tomorrow. These are the sources of all the side effects. The situation during the plague epidemic described in artistic form by Albert Camus is similar, except that from the novel we know the entire course of the epidemic in the city, while here, in 2020, we can only try to predict what may happen. This article is an attempt at such forecasting – hence the proposed image of a post-pandemic city – full of speculation.

*There have been as many plagues as wars in history;
yet plagues and wars always take people equally by
surprise.*

(Camus, 1948, p. 34)

Social Isolation and Reduced Mobility

The lack of certain knowledge about the spread of the virus causes a lot of restrictions in social life and is the cause of both fear and numerous conspiracy theories about the origin of the pandemic. The lack of certain knowledge was also a reason for official authorities to present contradictory information at different levels and over relatively short periods of time. Often the lack of knowledge as well as a lack of courage meant that decisions were taken too late and on the wrong scale, and thus not only were they ineffective at first, but they also reduced the chances of a quicker exit from the crisis. It was the same in the city of Oran attacked by the plague. The people of Oran react to the suffering caused by the plague in different ways. The authorities are indifferent to their suffering. They refuse to alarm the citizens and refuse to isolate the citizens until they get more evidence of the disease. The people first believe that the plague will perish, but ironically the citizens perish instead. The Christian authority gives a different interpretation for the suffering of the people. Father Paneloux in his sermon says that the plague is a punishment from God upon humans (Sreekumar, 2019, p. 147).

The decision to prevent the spread of the virus is based on knowledge of its nature and, since it is fragmented and acquired in real time, this allows initial decisions to be taken solely on the basis of the experience of other countries. I am thinking of studies to quantify the impact of various social and economic factors on virus spread rates in order to be able to anticipate infection risk factors linked to human behaviour and social and economic status. In the framework of transmission in urban areas, Chinese authors have also taken into account a number of other factors, such as population density, degree of economic development, number of doctors and specific local environmental factors, especially atmospheric (temperature, wind and rain) (Yun et al., 2020). Despite such assumptions, the mathematical or econometric models used, especially those used to forecast the development of the pandemic, do not provide clear answers that can be trusted enough to forecast the future with high probability. What we do know for sure is that the COVID-19 virus spreads through the droplet route (saliva or nasal discharge), during normal conversation or when an infected person coughs or sneezes. According to the epidemiological literature, the COVID-19 virus' reproduction number is 2 to 2.5 (World Health Organization, 2020). This is a high spread rate, which, assuming that the virus is effective in atmospheric conditions at a distance of 1.5 to 2 meters and has a considerable capacity to survive on a variety of surfaces, is a premise for residents in densely populated areas to stay at home and to not participate in any group activities. This was the first decision that has usually been made when the coronavirus appeared in an area.

Interesting research concerns the possibility of getting infected while running or walking for example and not only while talking. It turns out that the risk of infection increases as the distance between the person in front of and behind the person decreases. Therefore, a reduction in the risk of infection in these circumstances can be achieved by avoiding either walking or running in the slipstream or by maintaining greater social distance, which increases with the speed of walking or running. In the absence of head wind, tail wind and side wind, for a fast march at 4 km/h this distance is about 5 m and for a speed of 14.4 km/h this distance is about 10 m (Blocken et al. 2020, 11). This detailed description may seem superfluous in the context of the subject matter of this article, but it shows the degree of difficulty in determining the appropriate safe distance between people, as well as in translating this knowledge into orderly regulations. Apart from the need to maintain social distance it is recommended to stay at home as long as possible, not to meet with other people and often, when the situation is dangerous, bans are issued on leaving home. Therefore, the media are used to remind people of the need to keep a safe social distance.

Many cities require recent visitors to high-risk areas of COVID-19 to be quarantined (another form of isolation) at home or at designated facilities for 14 days. Residents who have typical symptoms of COVID-19 are required to inform the relevant authorities about their health situation and are quarantined and treated in special medical facilities. Governments also monitor and isolate the contacts of these patients. Many countries have implemented mandatory quarantine and mass closure. The coronavirus is a global pandemic, so investigating the factors affecting COVID-19 transmission and the effectiveness of large-scale quarantine operations in China not only increases our understanding of how to stop COVID-19, but also provides insight into future preventive measures against similar infectious diseases. Therefore, the two measures, restricting mobility and social isolation, are widely recognised as the most effective ways of stopping the spread of the virus and avoiding infection before a vaccine is invented or herd immunity is achieved.

And since habits are precisely what our town encourages, all is for the best.
(Camus, 1948, p. 4)

Polish Response to Coronavirus

Poland reacted too optimistically to the appearance of the coronavirus when on March 4 'patient zero' was diagnosed, who had been infected outside the country. At that time it was publicly claimed that personal protective equipment and trained medical personnel were available in sufficient numbers. After six days there were cases of horizontal transmission, so the phase of local transmission of SARS-CoV-2 began. Gradually, the authorities' narrative changed, suggesting that there were increasing health care deficiencies, but these occurred in all countries struggling with the virus. Information from the doctors in the area became worse and unfavorable to the authorities. The authorities tried to prevent medical staff from commenting on the pandemic, including provincial medical consultants, from reporting actual shortages of equipment and medical personnel. The spread of contradictory and dynamic information in public space over time caused an increase in distrust and disorientation of the people. Disorder usually causes fear or rebellion.

Following the example of other countries, lockdown controls were launched on March 10-12, closing schools and university classes and cancelling mass events, and on March 25, they were strengthened by restricting non-family meetings to two people and religious congregations to six and banning inessential departures. On 31 March, the Prime Minister announced that Poland would strengthen these restrictions from 31 March for at least one month. Lawyers considered that such a procedure for introducing restrictions on freedom rights was incompatible with the current constitution. According to the regulation, minors (under 18 years old) were prohibited from leaving their home without a legal guardian. Parks, boulevards and beaches were closed, as well as all hairdressing establishments, beauty and tattoo studios and piercing salons. Hotels were only allowed to operate if they quarantined residents delegated to work for services such as the construction of buildings for medical purposes. Persons walking in public were obliged to keep themselves separated from each other by at least two meters, except for carers of children under 13 years old and disabled persons. No restrictions were applied to persons travelling in private cars (Wikipedia 2020-05-04). On 16 April, the Minister of Health recommended wearing masks covering nose and mouth in public places and reminded the public about disinfection and frequently washing hands, as well as recommending remote working and keeping a safe social distance (minimum 2 meters between people).

It is not difficult to see that the main way to reduce the spread of the virus in Poland was to take measures of social isolation, i.e. to actually reduce contacts in real (physical) space. In other words, a significant part of society was immobilized and imprisoned, thus deprived of their natural right to freedom, taking into account, however, the primacy of health security, individual and collective. The right to mobility was sacrificed in exchange for health security.

Thus he was enabled to follow, and on a different plane, the dreary struggle in progress between each man's happiness and the abstractions of the plague, which constituted the whole life of our town over a long period of time.

(Camus, 1948, p. 45)

Social Isolation and Quality of Life

What has affected a significant proportion of city dwellers is that they were actually trapped in their place of residence for a long time, i.e. their mobility was significantly reduced. Usually, in so-called normal times such a state of affairs occurs in connection with some health disaster (hospitalization) or crime (imprisonment). What is most precious to a person, i.e. their freedom, is suddenly limited both by the fear of the consequences of being infected with the virus, the responsibility for one's loved ones, especially those who are at great health risk, as well as the need to submit to restrictions due to the recommendations of the authorities. Practically overnight, the inhabitants found themselves in a situation they had not experienced before on such a scale (in terms of spread and duration).

Does such a state affect their quality of life? I looked for answers to this question by making inferences based on speculation based on inductive reasoning. My hypothesis is as follows: Restriction of mobility significantly reduces well-being as manifested in a feeling of satisfaction with life, or, in high-flying thinking, happiness. In my book *Quality of Life in the City. Interdisciplinary Views*, published in 2018, I wrote: "The city – in my deep conviction – is a testing ground for seeking happiness, and this takes place during the lifetime of each person" (Dagger, 2018, p. 21). Enrique Peñalosa, the mayor of Bogotá, who initiated a real revolution in social relations, said that we can design the city in such a way as to give people a sense of dignity and allow them to feel rich. The city can make them happier. A city that creates conditions for people to be happy is a city in its own right. Montgomery (2015) indicates the city's responsibilities in this regard: to maximize joy and minimize misery, to take care of our health, to offer real freedom to live, move and shape our lives, to strengthen their mechanisms to resist economic and environmental shocks, to share space fairly and honestly among its inhabitants, to provide accessible services, opportunities for movement, joy as well as dealing with inconveniences and costs, enable people to build and strengthen meaningful bonds between people, and finally recognise and respect the community, thus opening the door to empathy and cooperation (Montgomery, 2015, pp. 16-17).

Thus, when seeking happiness in a city, people should find the right conditions to feel happy in it. How can those be created? Most probably, by creating opportunities for meetings with other people, contacts that will give satisfaction (very broadly understood – not only from specific meetings but also from emotional ties established, reducing the feeling of existential absurdity, loneliness, helplessness, etc.), feelings of happiness are created. Here the city as a human and spatial community fulfils this particular function of creating an environment that enables happiness. For good order, I emphasize that the quality of life as researched by scientists is here identified by me as a result of the state of happiness. "Happiness is basically the sum of pleasure and suffering, the most appropriate way to deal with any issue, both for governments and individuals, can be determined by simple mathematical action, so as to maximize the former and minimize the latter at the same time." (Montgomery, 2015, p. 43). In the book *Quality of Life*, cited above, presenting the results of the research of a team working under my leadership as well as in reference to the thought of the impact of urban spaces on happiness or quality of life, it was shown that the existence of public spaces and their accessibility is an important condition for a city to create the conditions for happiness. So to have real and encouraging meeting spaces is a must for any city. Meetings are not only a human dimension, but also an urban dimension (Szoltysek, 2018, pp. 9-10). Following this path, Bauman (2017) suggests to see the city as a meeting place for thoughts and emotions; people meet, one could say, in the flesh – in the midst of sweat and tears – and not only in the mental gymnastics of a sage or fantasy dream. "Some – or maybe many – of these meetings can be what Martin Buber described as *Vergegnungen* ('non-

meetings', i.e. wasted opportunities for dialogical engagement) in contrast to *Begegnungen* ('real meetings', taking their direction on the basis of the 'I-to' to the 'I-to' on both sides). However, having many thoughts and emotions is unavoidable in urban life (a short walk through the city streets is enough to experience them in excess), so the chance of a *Begegnung* is much greater than during time spent on the Internet, in 'interaction' with a digital source of information, when the user has the option of slamming into an airtight 'reverberation chamber' or 'mirror room', options that do not exist in life subjected to the logic of urban life" (Bauman et al., 2017, p. 44). What happens if we restrict mobility? Then the need to meet other people will not be met, unlike when that need is met, wherever those meetings take place. This provides an opportunity to create a balance between benefits and deficits and to determine what benefits and surpluses can possibly compensate for other deficits and surpluses. For example, in the initial phase of social isolation, the lack of opportunities for encounters in the real world can be compensated for by encounters in the digital world, or by the development of new interests, or by catching up on things to do that have accumulated over years. However, over time, when satisfaction from the possibility of spending time at home, in the circle of those closest to oneself, from the renovation work done, from the new hobby started, etc., starts to diminish and the longing for their prior lifestyle (even if only in some dimensions, for example from the possibility of going out to a shop, cinema, gym, etc.) starts to diminish, the valuation of well-being starts to change. "In this current of thinking there is also a relatively common sense of temporality of happiness and the necessity to pay for the received happiness. Often people are afraid to be happy for this reason. Thus, unmet needs can be considered by some people as payment for the needs met – thus stimulating a softer assessment of unmet needs, reducing grief and disappointment associated with such a situation" (Szołtysek et al., 2018, p. 28). As a result of the impossibility of reaching the place of a potential meeting with other people, not only does the negative assessment of one's own well-being increase, but also the feeling of happiness decreases and is replaced by negative feelings.

At first the fact of being cut off from the outside world was accepted with more or less good grace, much as people would have put up with any other temporary inconvenience that interfered with only a few of their habits. But, now they had abruptly become aware that they were undergoing a sort of incarceration under that blue dome of sky, already beginning to sizzle in the fires of summer, they had a vague sensation that their whole lives were threatened by the present turn of events, and in the evening, when the cooler air revived their energy, this feeling of being locked in like criminals prompted them sometimes to foolhardy acts.

(Camus, 1948, p. 48)

Side Effects of Social Isolation

The speculative ideas described above, connecting mobility restriction to happiness reduction, is a general premise for trying to demonstrate that social isolation is a cause of many negative phenomena in an individual's life. Referring to the narrative of Camus, not only physical suffering but also psychological suffering arises due to the spread of the bubonic plague. The people of Oran got isolated from their loved ones. Due to fear, they made no attempt be in contact with other citizens. The supplies of food and other necessities ran low, they lived under constant fear

of the plague and grieve over the loss of family and friends who fell victim to it (Sreekumar, 2019, p. 146).

Shopping madness, aimed at creating the conviction that having an excessive supply of toilet paper, mineral water, flour, pasta or other goods as proof that we are not subject to panic and are prepared for various difficult situations, is usually characteristic of the beginning of an epidemic. In Poland, the fears accompanying most of the reactions of the '4P' organisation (which uses marketing mix tools) were justified by the financial capacity of the households. Almost every fifth respondent said that he or she had money for one or two months at the most and the share of the participants who declared that their savings would last three months was the same. "The greatest fear for finances is currently experienced by people who have no money at their disposal, or one month's income at the most – in this group as much as 36% of respondents say that they will have enough money for a maximum of two months in the immobility caused by the coronavirus" (BIG Info Monitor, 2020). Americans have similar feelings. Economic conditions are dangerous for almost all Americans, with differences in demographic affiliation. Seniors are more likely to have a stable working life and finances that will help mitigate the blow. People who are just starting out or who will start their adult lives in the years following the pandemic are at a disadvantage. They will be asked to pass the financial safety line without any practice and, for most, without a safety net. In the American reality, few will be able to ask their parents or other family members for substantial help. "Even in the relative boom times of the past few years, 40 percent of Americans didn't have the cash on hand to weather a \$400 emergency expense. With the financial losses and medical debt millions of American families will accrue over the course of the pandemic, even that modest flexibility will likely be lost for many" (Mull, 2020). This fear is greater than the fear of contracting the virus.

Over time, this fear, which we are slowly getting used to, is compounded by the search for threats in our environment and the blaming of those who are thought to be 'responsible' for creating a threat. Seeing people at risk as special or different can encourage an 'us vs. them' attitude, leading to segregation and stigmatisation. This in turn can make it difficult to control the epidemic. Following the wave of fear and worry, several communities seem to develop a new by-product of discrimination, for example mutual discrimination within the Asian/Chinese societies. People who reside in Taiwan are afraid of interaction with those living in Hong Kong; people in Hong Kong avoid interaction with China mainlanders; and people from southeastern and southern regions of Asia are afraid of contacts with Chinese ethnic people. More recently, people in Hong Kong and Taiwan feel scared when interacting with Koreans and Japanese due to their recent community outbreak (Chung-Ying, 2020, p. 1). Similar reactions at the end of April 2020 began to intensify against healthcare workers – doctors and nurses, and against people who were suspected by neighbours of being infected with COVID-19. It is astonishing how after several weeks the attitude towards people working in hospitals or on ambulances, as exhibited by expressions of support and public thanks and admiration for their difficult work, and people supplying hospitals with food and personal protective equipment for the staff, shifted to exclusion, destroying their cars or organizing obstacles to prevent these people to live in their own homes. Stigmatisation also spread to members of their families.

During the period of social isolation, education at all levels has moved to the digital world. This has created many challenges for teachers, who often had to quickly master the tools for remote teaching and for pupils and their parents. The problems that have arisen in this context relate both to access to the Internet and to devices that enable distance learning to be used at a specific time, when sometimes one or two computers (or tablets) are used simultaneously by parents working remotely and children. Digital exclusion divides young people into strongly opposing groups in

terms of educational opportunities. North (2020) notes that “experts around the country fear that the coronavirus crisis will end up worsening America’s existing educational inequality, making it harder than ever for low-income students to learn, and putting them at an even greater disadvantage compared to their wealthier peers” (North, 2020). In Poland, “children who are unlucky enough to be born in dysfunctional, poor families who have lost their parents early – will again receive a lesson from life, or in fact from the Ministry of Education, showing that the better will always be the better, and they will always have an upward spiral. Social inequalities will become even more pronounced when the eighth-grade and high school exams are taken. How to prepare for these exams on one’s own, a young man living in a family with an alcohol problem, having parents with intellectual disabilities, dysfunctional, when the problem is already social isolation and the obligation to stay in the family home? How strong will those be whose parents drink and fight every day when the teacher organizes a webinar and makes him run a camera exposing all his domestic misfortune to his classmates?” (Sabicka, 2020).

Long stays of families in the small space of an apartment, with no possibility of going out, cause additional stress, which can lead to tensions between family members, including domestic violence. Interesting information from China is provided by Bloomberg Businessweek: “The city of Xian, in central China, and Dazhou, in Sichuan province, both reported record-high numbers of divorce filings in early March, leading to long backlogs at government offices. Trivial matters in life led to the escalation of conflicts, and poor communication has caused everyone to be disappointed in marriage and make the decision to divorce. When the virus hit in late January, on the eve of the festivities, couples in many cities had to endure an additional two months trapped under the same roof, sometimes with extended family. For many it was too much. The more time they spent together, the more they hate each other, people need space. Not just for couples – this applies to everybody” (Prasso, 2020). Particular attention should be paid to children, as “long-term isolation can lead to a deterioration of the mental health of those who have not previously experienced similar difficulties and which in the case of pre-existing problems will only be reinforced. Thus, a child who is anxious may start to panic that his or her parents will not come back from shopping, die, or arrive home from work. A child who is aggressive, hyperactive, overloaded with excessive duties and the need for constant contact with high technologies may start to cause even greater educational problems. These problems will increase!” (Sabicka, 2020).

Tensions and conflicts are affecting an increasingly wide range of society. The pandemic has been dangerously deepening social divisions in America. A nation that is already divided in recent years by race, class, religious divisions and absurd politics. The notion of ‘one indivisible nation’ proves to be no longer realistic, especially in the context of recent racial conflicts in the USA. For many, the future seems extremely uncertain. “So does survival, a privilege taken as a virtual right by the majority of Americans courtesy of economic and medical achievements since the Second World War. The coronavirus crisis has added new layers to our national divide: the tested and the untested; the food deliverers and the food receivers; the mask-wearers and the beach-goers; the less vulnerable young and the vulnerable old” (Wright, 2020).

Another worrying phenomenon that may affect the future development of social relations is the general decline in confidence. This is not only due to the existence of the coronavirus. The Edelman report, which was carried out shortly before the pandemic, concludes as follows: “We are living in a trust paradox. This is an era of strong economic performance and nearly full employment; over the past two decades, more than a billion people around the world have lifted themselves out of poverty. The major societal institutions – government, business, NGOs and media – should be enjoying high levels of trust. Yet the 2020 Edelman Trust Barometer, our 20th annual study, tells us that no institution is trusted.” (Edelman, 2020). Another consequence of the

pandemic is a slowdown, as seen in many ways. There is no doubt that the economy and growth rates are slowing down. The economic slowdown itself is not a threat to the economy, but the uncertainty as to whether the slowdown will be followed by a recovery is. It is also unclear when the turning point will occur. The slowdown also affects the pace of life. A high pace of life so far has been associated with a multitude of activities, performed in various places, constant struggle with time, which was lacking. Suddenly, in the face of being trapped in places of residence and being banned from leaving them, there is time that was not there before, in the form of time savings on movement mainly due to reduced mobility. People have started to tame this time – usually by doing tasks that had been postponed for a long time (e.g. renovating apartments, cleaning, reading overdue newspapers), increasing the time spent on the Internet, reading books – finally – talking to family members, sharing tasks, helping children to learn, etc. Many people decided to start dealing with something new – looking for a new hobby, e.g. learning foreign languages, improving computer skills, doing small craft, etc. This is also a time to reflect on life, values, goals. For example, the American millennials and Gen Z-ers are not usually immersed in deep questions about religion, but they are now struggling with questions about meaning, morality and mortality in ways they never have before. Like everyone else, they are confronted with everyday decisions about where they go, whom they see and what they have to do – decisions of spiritual resonance and ethical dimension. Nevertheless, “only one in five Millennials believes in clear standards of good and evil. Faced with the coronavirus threat, this is sometimes a millennium warning to parents in Boomer to take precautions” (Polakovic 2020). There is therefore a chance to gain new competences, perhaps useful in the future. Probably a positive aspect of reducing mobility and limiting production and consumption is a gradual improvement of the environment. The air from the province of Hubei, where the coronavirus epidemic started, was analysed and it was found that after a few months the air quality had definitely improved. This was mainly because of a reduction of nitrogen dioxide emissions by motor vehicles, power plants and industrial facilities. Within a month, NO₂ emissions were reduced by several dozen percent. A similar decrease concerned the PM 2.5 particulate matter emissions. Carbon dioxide emissions decreased by 25 percent (over 100 million tonnes!) compared to the same period in 2019. Researchers even claim that cleaner air could have saved the lives of 4 thousand children under five and 73 thousand people over 70. Analysts report the rather bold view that the dangerous virus saved more people than it caused deaths (Stężowski, 2020).

Once plague had shut the gates of the town, they had settled down to a life of separation, debarred from the living warmth that gives forgetfulness of all. In different degrees, in every part of the town, men and women had been yearning for a reunion, not of the same kind for all, but for all alike ruled out. Most of them had longed intensely for an absent one, for the warmth of a body, for love, or merely for a life that habit had endeared. Some, often without knowing it, suffered from being deprived of the company of friends and from their inability to get in touch with them through the usual channels of friendship, letters, trains, and boats. Others, fewer these, had desired reunion with something they couldn't have defined, but which seemed to them the only desirable thing on earth. For want of a better name, they sometimes called it peace.

(Camus, 1948, p. 146)

A Picture of A Post-Pandemic City

The phenomena of social life presented above in a relatively extensive way as well as the premises and conditions determining the feelings of people subjected to isolation or social distance during a pandemic may cause a change in their behaviour in the period after the pandemic ceases. If people's behaviour changes, the functioning of cities will also change. The aim of these extensive, although not exhaustive, considerations is to try to outline a picture of the post-pandemic city. Pandemics have always shaped cities – from increased surveillance, through 'densification', to new community activism, new behaviours, and new ideologies that are not keeping up with dynamic change, even though they are people's response to a changing reality. But when reality changes too quickly and unexpectedly, there is a temporary interregnum period. Also COVID-19 actively changes urban reality. "Because the world is still struggling with the rapid spread of the coronavirus, limiting many people to their homes and radically changing the way we move, work and think about our cities, some are wondering which of these adaptations will survive after the end of the pandemic and what life could look like on the other side" (Shenker 2020).

My thinking about the post-pandemic city, which I will present later, is speculation based on induction. I'm presenting it briefly as a cause-effect chain. Since a city is a specific relationship between people and the material-spatial base, then probably the changes in the functioning of cities can come either from changes in human behaviour that are formed in their heads under the influence of some emotions, while the origin of these emotions can be external or internal. Another element may be a change of the material-spatial structure of the city, so that it does not constitute an obstacle for the realization of changed human behaviours. There may be more such elements of change that make up the cycle of changes and subsequent cycles may last for different periods of time, depending on the stimuli initiating these changes. In this case, such a stimulus is the fear of a pandemic. For the sake of order, it should be noted that the cycle of changes may begin with a change of the material-spatial structure and next it may cause a change in human behaviour. So thinking about the future of the city, in my opinion, we should start from the probable behaviours of people that have changed under the influence of the pandemic period. These are behaviours that fall between anxiety and fear, and rebellion and rejection. On the one hand, we are dealing with powerful fears for our health, threatened by the coronavirus and possible accompanying illnesses, a narrative in the media, especially the messages from Italy, where the lack of ventilators forced doctors to separate those who were worth treating and those who were allowed to die. In addition, the images of military trucks transporting coffins with the bodies of the deceased to the places of solitary funerals are also an imaginative factor. On the opposite side we have those who seem to be immune to the coronavirus due to their age or health condition, and/or those who do not believe that the coronavirus exists or are convinced that the virus is not as dangerous as it can be heard or read from the media. Thus, to a large extent, we can divide the community of a city into two groups: the cautious, the fearful and the careless (those who are convinced that they are not threatened by any danger). This is the basic division from which I will draw further conclusions and conjectures, although, as I will show in the following, it is not the only division.

"The constant feeling of threat may have insidious effects on our psychology. Due to some deeply evolved responses to disease, fears of contagion lead us to become more conformist and tribalistic and less accepting of eccentricity. Our moral judgements become harsher and our social attitudes more conservative when considering issues such as immigration or sexual freedom and equality. Daily reminders of disease may even sway our political affiliations" (Robson, 2020). The sharpening and change of views from more liberal to conservative is a change of affirmation that entails a change of attitude towards the environment. The strong fear of coronavirus infection is

therefore a very negative feeling. Research suggests that we also tend to remember things that frighten us more strongly, allowing us to remember (and avoid) situations that could later expose us to the risk of infection. Various experiments have shown that we become more conformist and respectful of conventions when we feel threatened by illness. “During the experiments when asked about the kinds of people they liked, meanwhile, participants who were worried about illness also tended to prefer ‘conventional’ or ‘traditional’ individuals, and less likely to feel an affinity with ‘creative’ or ‘artistic’ people. Apparently any signs of free-thinking – even invention and innovation – become less valued when there is the risk of contagion. In explicit questionnaires, they are also more likely to agree with statements such as ‘breaking social norms can have harmful, unintended consequences’” (Robson, 2020).

When we feel afraid of being infected, we tend to judge loyalty violations more harshly or when we see someone who does not respect authority. In addition to making us more severe judges of people in our social group, the threat of illness can also lead to greater distrust of strangers. Traditionally, less attractive people are particularly harshly judged, perhaps because we confuse the condition of their homes with signs of ill health. From the described characteristics of people there will be groups of inhabitants in the future characterized by mistrust towards others, reduced acceptance of strangers or all those who differ from them. These people will rather focus their contacts on a group of small, usually family or neighbourhood groups, less often professional. For them it will be safer to have their own flats, separate areas of cities, with limited access of strangers, some exclusive clubs, associations. They will prefer, if possible, work done from home using computers and the Internet, shopping and using various services remotely. “The ‘declining cost of distance’,” as Karen Harris, the managing director of Bain & Company’s Macro Trends Group, calls it, “is likely to accelerate as a result of the coronavirus crisis. More companies are establishing systems that enable staff to work from home, and more workers are getting accustomed to it.” In her opinion “These are habits that are likely to persist” (Shenker, 2020). These people will not be actively involved in urban movements, aid and charity activities. Instead, they will support all forms of social isolation, recognising it as the foundation of health security in the city, most likely seeking to impose their views as binding on the entire urban community. Pandemic terror will meet their expectations of city safety even after the pandemic has subsided, which this group will probably not believe. As a result, the mobility needs of this group of people will be small, rather irregular and generally met by individual transport, which is considered to be an ‘extension of safe living’. Such satisfaction of mobility needs is generally undesirable in modern cities and various measures are taken to change such mobility behaviour.

The second group of people are those who think that the coronavirus is not dangerous and who are not afraid. This statement strongly contrasts them with the one described earlier – there is no feeling of fear in them. The most numerous representation of this group are young people who, not only because of their relatively good health and immunity, are less exposed to the tragic effects of COVID-19, but at the same time believe they have a long life expectancy. They see the freezing of economic life as a serious threat to their future and blame the older generation in particular for this. This state of affairs has serious implications for the range of behaviour of this group. Healthy young people who are in quarantine for several months are experiencing a previously unknown mode of functioning and are beginning to realize that the deep economic recession that is likely to follow will affect them directly and the consequences of this state are generally unknown. It is difficult to imagine the future of this cohort in every detail, except that their lives will be at least in some ways deeply different from what they could have been. They are often lonely in these feelings, without support from others. Social media only create the appearance of a community; people can foster relationships without depth and permanence, making it easier to avoid people they find inconvenient. That condition can lead to frayed societal connections and a ‘benign

liberalism' of everyone pursuing their own thing. In addition, creating a curated world skews perceptions of reality, of how other people behave and of what's important for society. "Many young people see the world systems their grandparents or great grandparents built as highly vulnerable and inadequate to the challenges of the world today, so they don't invest in authorities outside their control. It's not something they care much about; they have no reason to trust it because they've only seen failure after failure. It's not an irrational fear" (Polakovic, 2020). Young people do not trust institutions and are more reliant on family or circle of friends. But widespread hyper-individualism in American society limits the public sphere in which people can act together.

Beyond politics and policy, the structures that young people have built themselves to survive the pandemic can also change life after it. But widespread hyper-individualism in American society limits the public sphere in which people can act together. In addition to policies that are more pronounced and populist under the influence of a pandemic, the structures that young people have built for themselves to survive the pandemic can also change their life after the pandemic. Young Americans have responded to this disaster by increasing their readiness to help others – volunteering and mutual aid groups provide food for those in need. The impetus to help in a crisis is a hallmark of community resilience and this is probably the first opportunity many people in Gen C have had to spend much time serving others. Learning about the value of sharing resources and caring for neighbors can help the next generation of adults to reverse some of the negative trends of loneliness and alienation (Mull 2020). Engagement in aid activities is also noticeable in other countries, but is often associated with momentary activities under the influence of emotions and these behaviours are unlikely to perpetuate. Observations show that, unfortunately, over time, these behaviours fade away and uncertainty about the future and lack of concern about one's own health is the basis for building a second group of the urban community – young, brave and without particularly good future prospects.

Separation of such two groups with opposite characteristics and few common features is not a good prospect for the city if it perpetuates the tribal division. The city should create all conditions for it to be the habitat of happy people, who constitute an open, inclusive, heterogeneous community, capable of creating new and unique values. The division of the community of a city into a creative class and a precariat, in accordance with the theory of the American sociologist Richard Florida, seems to be moving to a conceptual past and the traumatic experiences of the pandemic period suggest another class division. Since COVID-19 swept through much of the world, four new classes have emerged as a result of changes in the way societies function. Class (1) are the 'Remotes' – professional, managerial and technical employees continuing to work in their positions, usually from a distance and usually for the same remuneration; class (2) are the 'Essentials' – medical personnel, food supply chain workers, police and truck drivers; many risk their lives with limited physical or economic protection; class (3) are the 'Unpaid' – the growing number of unemployed people – a study by Pew Research Center found that 43% of US adults or someone in their household have lost their job or received a pay cut due to the pandemic; class (4) is a wide range of 'Forgotten' people –homeless, migrant workers, Native Americans, disabled, elderly and imprisoned (see: Wright 2020).

One can speculate which group from the division proposed by me into 'terrified' (later probably 'reasonable') and 'courageous' will supply these four classes; all this depends on other competence and demographic characteristics. In such a socially complicated city, it will still be necessary to maintain physical social distance for some time, not only because of the recommendations of the authorities, which will be mitigated after some time, but also because of a general lack of trust in other people, especially those who are suspected of being reckless in

their behaviour. Keeping a distance has its advantages and disadvantages. Nevertheless, it is incompatible with the nature of the city related to its relatively limited area and its considerable popularity, i.e. high population density and the physical proximity to people. The American sociologist Richard Sennett has drawn attention to the dilemmas related to population density: “At the moment we are reducing density everywhere we can, and for good reason”, but overall density is good: denser cities are more energy-efficient. “So I think in the long term there is going to be a conflict between the competing demands of public health and the climate.” Sennett believes that “in the future there will be a renewed focus on finding design solutions for individual buildings and wider neighborhoods that enable people to socialize without being packed ‘sardine-like’ into compressed restaurants, bars and clubs – although, given the incredibly high cost of land in big cities like New York and Hong Kong, success here may depend on significant economic reforms as well” (Shenker 2020).

If these predictions are correct, it would mean a revolution for city space. City space, especially public space, has the power to attract people. One of the components of its attractiveness is to encourage meetings, celebrate communities. The assumption of ‘thinning out’ this space by introducing greater distances between people can not only reduce the city’s attractiveness but also worsen the sense of quality of life. One of the most urgent issues that urban planners will face is the apparent tension between congestion – the pursuit of greater urban concentration, which is seen as necessary to improve the ecological balance – and disaggregation, separation of the population, which is one of the key tools currently used to stop the transmission of infections (Shenker 2020). Cities may therefore become a less desirable living environment and the direction of migration from town to village or suburbs may become more popular. “In recent years, although cities in the global south are continuing to grow as a result of inward rural migration, northern cities are trending in the opposite direction, with more affluent residents taking advantage of remote working capabilities and moving to smaller towns and countryside settlements offering cheaper property and a higher quality of life” (Shenker, 2020). This will result in a further shift away from public transport services, not adapted to the intensive handling of territorially large areas with little demand for these services scattered over time.

It is worth realising that collective forms of transport are a desire of green and sustainable urban planners. The pandemic crisis opens up new opportunities for those who are critical of the idea of sustainable cities, pointing out that, contrary to their assumptions, they preserve social inequalities and existing power relations and primarily serve interest groups focused on investments in green solutions. It also gives solid arguments to numerous critics of the idea of sustainable development in Poland. Western European ideas of a compact and sustainable city have always been very difficult to penetrate the social consciousness here and have not aroused widespread enthusiasm (Krysiński, 2020). There is an equally likely option that the threat of COVID-19 will have a positive impact on nature long after the epidemic is over. Among them is trend researcher and publicist Matthias Horx. An analysis prepared by the head of the German Zukunft Institut (Institute of the Future) shows that in the autumn we can wake up in a world functioning according to zero-waste ideas. In his blog post, Horx predicts that we will turn to producing the most needed items and providing basic services. Thanks to this, craftsmanship will be revived and small local companies will experience a renaissance. Finally, it may lead to the reduction of greenhouse gas emissions, including those emitted by factories producing products that we do not necessarily need (Wandas, 2020). The concept of self-sufficient cities in which food production is implemented – urban agriculture – is deeply rooted in my mind. Cities drowning in greenery, city-parks, are a return to the beginnings of urbanization and the beginning of parting with the concept of the city as anti-village.

So what is the likely picture of mobility for a post-pandemic city? Much depends on the scenarios that cities will start to follow. Whether there will be a domination of one group (e.g. afraid) over another (brave), or whether it will be possible for coexistence to develop into cooperation over time. However, it seems that the demand for public transport services will decrease significantly, while the attractiveness of individual vehicle movements will increase, regardless of the mode of ownership (own, rent or shared). The latter category also includes bicycles, scooters and other non-motorised modes of transport. It is likely that the popularity of pedestrian movements will increase in order to compensate for the need to dilute the crowds. To maintain more distance, it will be necessary to widen pavements (e.g. at the expense of the number of lanes) and to favour pedestrians in urban journeys. Ensuring comfort of movement will require improving the pavement surface, isolating pedestrian traffic from the rest, allowing for collision-free movement through the roadways of those parts of the city where motor vehicles have so far taken precedence. Taking into account the likely deurbanization migration of residents, the need to allow for motor vehicles to arrive close to sensitive points in the city will have to be taken into account. An important element will be the strategy of recovering the city space for the needs of meetings, i.e. creating multifunctional public spaces. Ensuring mobility (in addition to safety and continuous mediation) will be one of the main components of the strategy for building quality of life in a post-pandemic city, in a situation of a probable prolonged economic crisis, high unemployment and growing social tensions. The proposed overall picture of a post-pandemic city may seem too simplistic. However, when we look at the general directions of changes that I think will take place, it is not difficult to build multi-variant scenarios based on such guidelines.

Conclusions

The period of the pandemic, associated with the slowing down of urban processes in practically every context was – and with high probability (in the case of a second wave of the pandemic) will be – an opportunity for all actors of social life to observe the state of the city, social cohesion, strengths and weaknesses and to make a new diagnosis, an answer to the question: What is our city, where are we in its development, and where are we going? Is the goal of the city's development – constantly modified and postponed in time – well-defined from the perspective of the new experiences of isolation and fear? Is the process of strategic city development planning carried out with proper participation of representatives of various city groups? Is there a proper emphasis on the independence and autonomy of the city and should its dependence on its surroundings – region, state, country – increase or not? Are we prepared for sudden, unexpected common threats, difficult to predict? Are we properly drawing conclusions from observations and reports from other parts of the world where the pandemic appeared earlier? If we do not have plans to respond to such threats, where should patterns of behaviour be drawn from and do such patterns exist? Should we look for solutions on our own, or should we reach for some benchmarks? Should the principles of cooperation or rather confrontation be introduced between the executive (mayor/mayor) and the legislative authority (city council), so that peaceful cooperation does not remove the emerging threats from our view? Should the city budgets allocate appropriate amounts of money for such tasks that arise unplanned during a pandemic or other similar phenomenon? How to maintain high social activity of inhabitants in the post-pandemic period, especially in the field of volunteering? What changes in the city space (physical, organisational and other) should we implement?

As scientists and practitioners of city management, we have at our disposal a number of tools that allow us to conduct sociological, political and marketing research, we have tools for management and financial strategic and operational analysis, and finally, proven ways of communication. Thus, the period of pandemic creates opportunities: first of all, to verify these tools in terms of

their flexibility and resistance to changes in the mezo and macro environment. Secondly, it is necessary to check to what extent we can use the schemes of behaviour from the natural (technical) sciences in the social sciences. In other words, to ask about the practical usefulness of econometric systems, various modeling systems, their reliability and accuracy. Thirdly, there may be a need to examine, both in theory and in practice, the resilience of the tools and concepts used to changes as radical in course and scope as the experienced pandemic. Fourthly, in my opinion it is necessary to quickly publish any reports describing all cases of solutions to emerging problems in cities in order to try (if possible) to make generalisations and practical recommendations based on them. Talking about the future (even the near future) with the uncertain, dynamically changing reality of cities in the pandemic period is burdened with a lot of subjectivity and imagination. The duration of the pandemic, currently counted in months, does not allow the use of particularly sophisticated research tools, it is a simple observation of reality and a series of speculative and postulate assumptions. Therefore, according to the author's intention, this article can hopefully serve as an impulse for further deliberations and to stimulate decision-makers and theorists of urban functioning to plan ahead of time activities that will allow cities to enter the post-pandemic times with fewer losses.

References

- Bauman, Z., I. Bauman, J. Kociatkiewicz, and M. Kostera (2017) *Zarządzanie w płynnej nowoczesności*. Warszawa: Bęc Zmiana.
- BIG Info Monitor (2020) Koronawirus odbiera pracę i pustoszy portfele Polaków, pandemia COVID-19 budzi większy lęk o finanse niż zdrowie. 25-27 March. Accessed from <https://alebank.pl/koronawirus-odbiera-prace-i-pustoszy-portfele-polakow-pandemia-covid-19-budzi-wiekszy-lek-o-finance-niz-o-zdrowie/> on 05 May 2020.
- Blocken, B., F. Malizia, T. Druenen, and T. Marchal (2020) Towards Aerodynamically Equivalent COVID19 1.5 m Social Distancing for Waling and Running. *Urban Physics, Wind Engineering & Sports Aerodynamic*, Preprint 14 April 2020.
- Camus, A. (1948) *The Plague*. New York: The Modern Library.
- Chung-Ying, L. (2020) Social Reaction toward the 2019 Novel Coronavirus (COVID-19). *Social Health and Behaviour* 3(1), 1-2, DOI: 10.4103/SHB.SHB_11_2.
- Edelman, R. (2020) The evolution of trust. *Edelman*, 19 January. Accessed from <https://www.edelman.com/research/evolution-trust> on 6 May 2020.
- Krysiński, D. Początek świata jaki znaliśmy. Jak koronawirus zmieni współczesne miasta? *Gazeta Prawna*, 12 April 2020.
- McBean, E. (1977) *Swine Flu Expose*. W.D. Gann's Books and Educational Materials. Accessed from <http://www.whale.to/a/mcbean2.html> on 02 May 2020.
- Montgomery, Ch. (2015) *Miasto szczęśliwe*. Kraków: Wysoki Zamek.
- Mull, A. Generation C has Nowhere to Turn. *The Atlantic*, 13 April 2020.
- North, A. (2020) The Shift to Online Learning Could Worsen Educational Inequity. *Vox*, 09 April. Accessed from <https://www.vox.com/2020/4/9/21200159/coronavirus-school-digital-low-income-students-covid-new-york> on 7 May 2020.
- Polakovic, G. (2020) How does Coronavirus Affect Young People's Psyches? *University of Southern California News*, 25 March. Accessed from <https://news.usc.edu/167275/how-does-coronavirus-affect-young-people-psyches/> on 7 May 2020.
- Prasso, Sh. (2020) China's Divorce Spike is a Warning to Rest of Locked-Down World. *Bloomberg Businessweek* 31 March. Accessed from <https://www.bloomberg.com/news/articles/2020-03-31/divorces-spike-in-china-after-coronavirus-quarantines> on 08 May 2020.
- Robson, D. (2020) The Threat of Contagion Can Twist Our Psychological Responses to Ordinary Interactions, Leading Us to Behave in Unexpected Ways. *Future*, 2 April. Accessed from

- <https://www.bbc.com/future/article/20200401-covid-19-how-fear-of-coronavirus-is-changing-our-psychology> on 10 May 2020.
- Sabicka, E. To szaleństwo zmuszać do tego cyrku uczniów i nauczycieli. *Więź*, 27 March 2020.
- Shenker, J. Cities after Coronavirus: How Covid-19 Could Radically Alter Urban Life. *The Guardian* 26 March 2020.
- Sreekumar, S. (2019) *'The Plague' by Albert Camus as a novel of suffering*, IJCIRAS, May, Vol.1 Issue 12. Accessed from https://www.academia.edu/39324077/THE_PLAGUE_BY_ALBERT_CAMUS_AS_A_NOVEL_OF_SUFFERING on 30 April 2020.
- Stańczyk, T. Epidemia zabiła 200 tys. Polaków. Dlaczego kina, teatry i szkoły działały w najlepsze? *Tygodnik „Do Rzeczy”*, 31 March 2020.
- Stężowski, J. (2020) Świat w obliczu pandemii koronawirusa. Jak reaguje środowisko naturalne? *Zmienimy Świat* 20 March 2020. Accessed from <https://zmienimyswiat.pl/2020/03/20/swiat-w-obliczu-pandemii-koronawirusa-jak-reaguje-srodowisko-naturalne/> on 06 May 2020.
- Szołtysek, J. (Ed.) (2018) *Jakość życia w mieście. Poglądy interdyscyplinarne*. Warszawa: CeDeWu.
- Wandas M. (2020) Dramat pandemii ulgą dla klimatu. Czy rzeczywiście? Sprawdzamy. *SmogLAB* 03 April. Accessed from <https://smoglab.pl/dramat-pandemii-ulga-dla-klimatu-czy-rzeczywiscie-sprawdzamy/> on 07 May 2020.
- Wnęk, J. (2014) Pandemia grypy hiszpanki (1918-1919) w świetle polskiej prasy. *Archiwum Historii i Filozofii Medycyny*, Vol. 77, 16-33.
- World Health Organization (2020) *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)*. Accessed from <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf> on 3 May 2020.
- Wright, R. (2020) Is America's "One Nation Invisible" Being Killed Off By The Coronavirus? *The New Yorker*, 2 May. Accessed from <https://www.newyorker.com/news/our-columnists/is-americas-one-nation-indivisible-being-killed-off-by-the-coronavirus> on 03 May 2020.
- Yun, Q., Ch. Xi, and S. Wei (2020) Impacts of Social and Economic Factors on the Transmission of Coronavirus Disease 2019 (COVID-19) in China. *MedRxiv*. The Preprint Server for *Health Sciences*, 1-27, DOI: 10.1101/2030.03.13.20035238.
- Zahorski, T., and I. Zendran (2018) Złoty wiek grypy. Krótka historia pandemii. *Acta Urobori – w Kręgu Pandemii*, Wrocław: Uniwersytet Medyczny, 91-101.