Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
COVID-19 pandemic is challenging some dogmas of modern urbanism

Artur Jasiński

Andrzej Frycz Modrzewski Krakow University, Poland

ARTICLE INFO

Keywords:
Public space
Density
Mobility
COVID-19
Cities

ABSTRACT

The outbreak of the COVID-19 global pandemic has brought dramatic changes to many aspects of urban life. Lockdowns, the social isolation, constrains on mobility, the closure of schools, universities and other public institutions, have resulted in a depopulation of streets, abandonment of public transport and the limitations of human contact in public spaces. Some of the dogmas of contemporary planning, such as the pursuit of high building density, promotion of public transport and the strengthening of the role of direct human contact in public space to ensure safety have all been challenged. In this think piece, these negative trends are analysed and then an attempt is made to indicate how to redirect and use their momentum for the development of a post-pandemic city as a sustainable, friendly, green, smart and safe organism.

1. Introduction

The dramatic and widespread impact of the COVID-19 pandemic has necessitated the revision of many principles concerning the organisation of social life, health care, public safety and urban planning. The coronavirus pandemic is expected to alter how cities are planned, managed and governed in future. Consequently, urban resilience issues need to be rethought and reviewed. In this article some dogmas of contemporary urban planning including promotion of high density, public transportation, and democratic character of city space are confronted with results of Covid-19 pandemic. Then two alternative scenarios of the development of post-pandemic city are investigated and discussed.

2. Density and space

Jane Jacobs, the patron of contemporary urban movements, celebrated the benefits of intense street life and building density: However, it still remains that dense concentrations of people are one of the necessary conditions for flourishing city diversity. And it still follows that in districts where people live, this means there must be a dense concentration of their dwellings on the land pre-empted for dwelling. The other factors that influence how much diversity is generated, and where, will have nothing much to influence if enough people are not there [Jacobs, 1993: 267].

Government action during the COVID-19 pandemic undertaken in the name of public health, including lockdowns and the obligation to maintain social isolation, have resulted in reduced both: mobility and civil liberties. Curfews introduced in some countries have resulted in people being literally trapped in their homes for long periods of time. We observe atrophy of social life in public spaces [Urbanśka, 2020: 95]. Spacious private space has become a luxury available only to the wealthy ones [Jasiński, 2020]. At this point, it must be noted that the pandemic has visibly increased the value of private space, which provides both invaluable safety from the epidemic and the mental comfort which is indispensable during isolation. Public space can no longer replace it. When urban squares and streets become empty, people crowd in their homes and flats. Families living in blocks of flats could only look at the world through the window or, at most, from out on the balcony, while wealthy ones with the private space of their own houses, terraces and gardens did not have to feel the nuisance of successive lockdowns in such a harsh and claustrophobic way. Their children could continue to play in their gardens while they enjoyed the benefits of being outdoors. Their own private gardens, roof terraces, holiday homes (not to mention private islands) provide both mental comfort and protection from other people - the potential sources of infection.

The interrelationship between the nature of urban spaces and the habits of city dwellers plays a large part in all societies. The successive restrictions and lockdowns have been particularly painful for Mediterranean societies, where for centuries social life has taken place outside the walls of homes: on city streets and in restaurant gardens [Pérez, 2020: 121]. However, the most dramatic impact of the pandemic is afflicted by one billion people living in slums, people who make up a quarter of the global urban population [UN, 2019], often deprived of basic comforts and access to running water, for whom the sole concept of social distancing is an abstract privilege [Ayyub, 2020]. Cities, once the hope of the future of the global south are now platforms for the pandemic [Martinez & Short, 2021: 3] (Fig. 1).
In this context the desire of many city inhabitants to have their own house with a garden, to escape to the suburbs or to the countryside, should not be surprising. This desire expressed on a mass scale, resulting in increased prices of suburban real estate, may become an impulse for the next wave of suburbanisation, with its well-known negative consequences: expansive spatial planning, expensive infrastructure, expansion of the road network, long commutes to work and school, congested traffic and, as a result a significant burden on the environment and the depopulation of inner-city areas [Duany & Plater-Zyberk, 2008: 64–65].

3. Mobility and public transportation

One of the reasons for the rapid expansion of the COVID-19 pandemic was the phenomenon of hypermobility and connected nature of global urbanization [Martinez & Short, 2021: 2]. Mass tourism and international business, using transcontinental air travel and high-speed rail links, have been the main contributors to the rapid transmission of the virus [Budd & Ison, 2020: 2]. The restrictions of mobility, shutdown in industrial activity and reduction in public transport emissions caused by the pandemic resulted in notable improvements in local air quality in cities worldwide. In Europe, passenger air traffic fell by as much as 90%, and the number of passengers using public transport was reduced by 80% [Bernhardt, 2020]. The fear of becoming infected not only invokes anxiety over contact with strangers and the desire to flee the city, but it also changes the way people travel: they walk rather than take a tram, ride a bike instead of going by bus, choose a private car over a train. Most people have changed their daily habits by giving up travelling further. Instead of going shopping by car in suburban supermarkets, food was bought in local shops or on-line retail chains. As a result, cyclists and pedestrians appeared on deserted streets and birds could be heard singing in city squares [Martinez & Short, 2021: 4].

The ongoing pandemic has strictly connected mobility, urban spaces and health, highlighting the need to act immediately in transforming cities through new sustainable transport models [Barbarossa, 2020: 3]. Many cities have taken up this challenge and used the circumstances to remodel traffic: reducing access for cars and widening cycle paths and pedestrian routes. In Paris, a radical redevelopment of the street network has been planned: the Velo plan envisages that in 2024 every resident will be able to meet all their needs within a 15-minute non-motorized trip [Paris à Velo, 2020]. In London, the London Streetspace Plan was announced, which aims to create safe cycling and walking paths along all of the city’s arteries and streets. A network of temporary cycling paths created for the time of the pandemic was also planned [Streetspace for London].

York, a project was announced to open more than 150 km of streets during the pandemic in order to create space for socially responsible recreation. Examples could be multiplied from Rome to Mexico [Barbarossa, 2020: 5–15].

The crisis caused by the COVID-19 pandemic could be the beginning of responsible, environmentally friendly urban transport. The American National Association of City Transportation Officials (NACTO) in its document ‘Streets for Pandemic Response and Recovery’ lists the following principles for transforming public spaces and streets of post-pandemic cities: supporting public health guidance, considering social distancing, increasing the outdoor space available for people, creating safer street that prioritize public transit, cycling and walking, supporting local economies and bringing communities into the process. Among the specific solutions, the report identifies the need to create places dedicated to particular street activities, such as: dedicated lanes for biking, safe transit lanes, pick-up and delivery zones, outdoor dining and market places [NACTO, 2020].

4. Public versus virtual space

Jane Jacobs advocated increasing building density and bringing people back to city streets. She also sneered at empty city parks: More Open Space for what? For muggings? For bleak vacuum between buildings? [Jacobs, 1993: 117]. In the meantime, during a pandemic, green city areas, such as parks, waterfronts, boulevards and common meadows are invaluable open-air resources where people can take advantage of the open space to find relatively safe refuge outdoors from the harshness of being locked inside their flats and living in social isolation. Jane Jacobs also claimed that the best guarantee of public safety is the presence of other people, self-control and neighbourhood watch: This is something that everybody knows: a well-used city street is apt to be a safe street. A deserted city street is apt to be unsafe [Jacobs, 1993: 44]. It seems to be the other way round during a pandemic – a deserted street has become a safe place, at least in terms of coronavirus transmission risk [Sarkin, 2020]. This fact leads to the depopulation of city squares and streets.

The phenomenon of social activity being transferred from a public space to a virtual space has been mentioned by numerous researchers for quite some time. Ewa Rewers notes that in the post-industrial city, the agora has moved to the space of electronic media [Rewers, 2005: 5]. In COVID-19 times the role of Information Technology is heightened as digital space becomes a platform of sharing information and enabling human interactions. News sites, social media and digital technologies for on-line remote work are gaining in importance. The pandemic has provided additional momentum for smart city development, telemedicine, on-line commerce and education, surveillance systems. Generally, COVID-19 is likely to boost smart city movements [Kunzmann, 2020].

At the same time, with many functions of the city moving to a virtual space, its saturation with security and surveillance systems is growing. The leading modern technologies used to monitor public spaces are: biometrics, CCTV, smart identification cards and electronic devices monitoring and tracking the communication of information [Lyon, 1994: 40–56]. These types of sophisticated technology and devices, used originally to secure the most closely guarded facilities, are seeing ever more applications in the monitoring of public space. Digital video cameras ensure continuous surveillance over city streets and squares; they could identify car registration numbers and, when combined with biometric databases, they make it possible to identify faces. Mobile phones follow us all the time. We are informed about biometric developments permitting facial recognition under masks, about the biometric databases, they make it possible to identify faces. Mobile phones follow us all the time. We are informed about biometric developments permitting facial recognition under masks, about the biometric databases, they make it possible to identify faces. Mobile phones follow us all the time. We are informed about biometric developments permitting facial recognition under masks, about the biometric databases, they make it possible to identify faces. Mobile phones follow us all the time. We are informed about biometric developments permitting facial recognition under masks, about the biometric databases, they make it possible to identify faces. Mobile phones follow us all the time. We are informed about biometric developments permitting facial recognition under masks, about the biometric databases, they make it possible to identify faces.
The recent pandemic offers unprecedented opportunity to understand how cities might be affected by pandemics and what actions are needed to minimize the impacts and enhance urban pandemic resilience [Sharifi & Khavarian-Garmsir, 2002: 1]. The emergency is to develop pandemic resilient city planning and efficient disaster risk management [Afrin, Chowdhury, Rahman, 2021]. On the other hand, the COVID-19 pandemic provided opportunity to strengthen electronic surveillance and control over population. Societies gripped by fear of an invisible enemy – be it terrorism or a pandemic – are more likely to agree to broaden the scope of state surveillance and to restrict some of their liberties in order to increase the level of security. All: politicians, secret services and business sector are eager to take advantage of this fact. It should be noted that the most successful in the fight against pandemics are totalitarian regimes (China, Korea) and militarised states (Israel), which leads to fears that this situation will be used to reinforce power relations, to use so-called smart technologies to increase surveillance and invigilation.

5. Discussion

If you love nature don’t live in it – wrote Vishaan Chakrabarti, director of city planning in the administration of New York Mayor Michael Bloomberg, in his manifesto, adding, it’s best to ditch the car, use the underground and live in a high and hyper-intense city: adopting a truly urban lifestyle is clearly the ‘greenest’ and most sustainable choice one can make [Chakrabarti, 2013: 78-81] (Fig. 2).

The impediments of successive lockdowns and social distancing policies have raised questions about the relevance of living in an intensive, block or high-rise development, where residents suffer from confinement, compactness and the risk of infection in stairwells and lifts. There are voices calling for breaking up the city, lowering density, and merging the city with countryside. In defence of compactness, Wolfgang Sonne points out that the sources of infection are not high density, compactness and mixed-use development, but irresponsible human behaviour. He points out that the first epicentres of the COVID-19 pandemic in Europe were relatively small and sparsely populated towns: Codogno in Italy, Ischgl and St. Wolfgang in Austria, Heinsberg, Gütersloh and Mamming in Germany. So, the spread of the virus is not reflecting urban structure but behaviour of people [Sonne, 2020: 16]. This argument is supported by [Connolly et al., 2020]: density alone cannot be a predictor of the spread of infectious diseases and other factors such as the state of development, availability of prevention and response measures, the extent of adherence to sanitisation and social distancing measures, and the extent of access to amenities and public health infrastructure are also important. In other words: inequality is the problem we need to solve, not density [Sarkin, 2020].

The significant and destabilising impact the pandemic is having on the global economy and all forms of transport provides a unique opportunity to reconfigure post-COVID transport policy and mobility practice and make it more responsible and environmentally sustainable. The advent of electric vehicles, e-bikes and e-scooters, and other technological innovations provides us with some examples how future transport may look like. Budd and Ison define Responsible Transport for individuals as: deciding whether you really need to travel for work related activity or whether the meeting/conservation/event could be held via video call or other digital means; considering the impact your travel choices have on others and the local environment (in terms of noise, congestion, safety), and indeed yourself in terms of health and well-being [Budd & Ison, 2020: 3] (Fig. 3).

Cities must take up a new challenge and start the urban revolution based on a Green New Deal, implementing sustainable mobility modes and transit networks [Barbarossa, 2020: 15]. However, it is important to emphasise that as long as social distancing rules are in place, it will be difficult to force people to reduce their use of private cars in favour of public transport. People must recognise public transport as a safe mode of transport. If this fails and people return en masse to their cars, to the car-centred model of urbanism, cities will lose the greatest benefits of public transport, which is reduced traffic and air pollution.

Smart IT technologies used widely for public health, safety and security control are among the most questionable issues. Smart IT Technologies have assisted in limiting the growth of epidemics and helping to control it by identifying infected individuals and their social networks, limiting direct human contact, information management, etc. [Sharifi & Khavarian-Garmsir, 2002: 11]. Here, the positivist concept of Smart Cities collides with the dystopian (or perhaps real) vision of a Surveillance Society. Western democracies try to use the so called human-driven approach to fight pandemics, i.e. information and education campaigns based on the principle of two-way communication between citizens and government, while the more successful method of crisis management applied to fight pandemics is the one used by authoritative regimes (China, South Korea), the so called techno-driven approach.

Fig. 2. Development of post-pandemic city: the negative scenario, as the continuation of the current trajectory.

Fig. 3. Development of post-pandemic city: the positive scenario, possible expansion of today’s alternatives.
which is based on surveillance and coercive measures. This situation raises serious concerns regarding privacy protections, transparency, reliability of information. It may lead to reinforced power relations by authoritarian regimes [Sharifi & Khavarian-Garmisi, 2002: 9].

6. Conclusions

The future of the post-pandemic city is unclear [Honey-Roses et al., 2020]. We already noted some shorter-term implications of COVID-19 but still we do not know yet the long term implication of this pandemic for city design, city planning and indeed city living [Martinez & Short, 2021: 7]. Rethinking urbanism will be more than a design challenge. The post-pandemic city will not only be a public health issue but also a political concern about who will be the decision maker. After a sudden, unexpected, severe and prolonged pandemic shock, some changes must occur. The balance of the system having been disrupted to such an extent that it will no longer be possible to return to the city’s previous form. According to the theory of resilience we will be witnessing the emergence of new non-equilibrium form of the urban resilience [Holling, 1973]. Faced with the challenges that the pandemic has brought us, it is possible to adopt two attitudes: waiting passively for what time will bring, or adopting an active attitude by trying to reverse negative trends and redirect the momentum of change. It seems that the changes forced by the COVID-19 pandemic are an opportunity for politicians, governors and urban planners to take action to develop the post-pandemic city as a sustainable, friendly, green, smart and safe organism, responding also to other contemporary challenges such as environmental pollution and climate change.

CRediT authorship contribution statement

Artur Jasiński is the sole and only author of the article: COVID-19 pandemic is challenging some dogmas of modern urbanism, from conceptualization to writing, editing and visualization.

Declaration of competing interest

The author declares that he has no known competing financial interest or personal relationships that could have appeared to influence the work reported in this paper.

References

Afrin, S., Chowdury, F. J., & Radman, Md. M. (2021). Covid-19 pandemic: Rethinking strategies for resilient urban design, perceptions, and planning. Frontiers in Sustainable Cities. https://doi.org/10.3389/frsc.2021.668263

Ayuyu, R. (2020). Social distancing is a privilege, foreign policy, 28.03 https://foreignpolicy.com/2020/03/28/social-distancing-is-a-privilege/

Barbarossa, L. (2020). The post pandemic city: Challenges and opportunities for nonmotorized urban environment. An overview of Italian cases. Sustainability, 12, 7172. https://doi.org/10.3390/su1217172

Bernhardt, J. (2020). Decline in ridership, adapted timetables and disinfection-robots – The impact of Corona/COVID-19 on public transport. https://www.urban-transport-magazine.com/en/decline-in-ridership-adapted-timetables-and-disinfection-robots-the-impact-of-corona-covid-19-on-public-transport/.

Budd, L., & Inou, S. (2020). Responsible transport: A post-COVID agenda for transport policy and practice. Transportation Research Interdisciplinary Perspectives, 6. https://doi.org/10.1016/j.trip.2020.100151.

Chalzahari, V. (2013). A country of cities. A manifesto for Urban America, New York.

Connolly et al., 2020, C. Connolly R. Keith S.H. Ali, 2020Extended urbanization and the spatialities of infectious disease: Demographic change, infrastructure and governance, Urban Studies, doi:10.1177/0042098020918073

Duany, A., & Slater-Zyberk, E. (2008). The traditional neighborhood and urban sprawl. In H. Tigrat (Ed.), New urbanism and beyond. Designing cities for the future, Rizoli, New York.

Holling, C. S. (1973). Resilience and stability of ecological systems. Annual Review of Ecology and Systematics, 4, 1–23. https://doi.org/10.1146/annurev.es.04.110172.000245

Honey-Roses, J., Isabelle, A., Daher Carolyn, C. V. K., van den Bosch Cecil, K., Litt Jill, S., Vrushbi, M., … McCall Michael, K. (2020). The impact of COVID-19 on public space: An early review of the emerging questions – Design, perceptions and inequities. Cities and Health. https://doi.org/10.1080/23748834.2020.1780074

Jacobs, J. (1993). The death and life of Great American cities. New York: The Modern Library.

Jasiński, A. (2020). In Public space or safe space – Remarks during the COVID-19 pandemic, technical transactions (pp. 1–10). https://doi.org/10.37705/ToChTrans/2e2020020./2020.

Kunzmann, 2020, R. Kunzmann Klaus , 2020Smart cities after covid-19: Ten narratives, diP – Plan. Tev, 56 (2), 20-31, doi:10.1080/02513625.2020.1794120.

Lyon, D. (1994). The electronic eye. Minneapolis: The Rise of Surveillance Society, University of Minnesota Press.

Martinez, L., & Short, J., Jr. (2021). The Pandemic City: Urban issues in the time of COVID-19, Sustainability, 13, 3295. https://doi.org/10.3390/su13063295

NACTO. (2020). Streets for pandemic response and recovery. https://nacto.org/publication/streets-for-pandemic-response-recovery/ Retrieved on 3.02.2021.

Paris à Vélo. (2020). https://www.paris.fr/pages/paris-a-velo-225, Retrieved on 3.02.2021.

Pérez, B. P. (2020). How the perception of the city and the house changes in the era of the coronavirus. Prawo i Społeczeństwo, 3(XXX), 119–131. https://doi.org/10.34697/2451-0858-pis-2020-3-006

Rewers, E. (2005). Post-Polit. Wstęp do filozofii ponowoczesnego miasta (Post-polit. Introduction to the philosophy of postmodem city). Kraków: Universitas.

Sarkin, G. (2020). Cities at the front line: Public space in the time of COVID-19 pandemic. Retrieved on 21.09.2021. Smithgroup https://www.smithgroup.com/publication/streets-for-pandemic-response-recovery/ Retrieved on 3.02.2021.

Sharifi, A., & Khavarian-Garmisi, A. R. (2002). Science of the Total Environment, 749. https://doi.org/10.1016/j.scitotenv.2020.143291

Sonin, W. (2020). In defence of compactness. DOM Magazine, 04, 15–17.

Streetspace for London. (2020). https://tfl.gov.uk/travel-information/improvements-and-projects/streetspace-for-london. Retrieved on 3.02.2021.

UN. (2019). Department of Economic and Social Affairs, Statistic Division. Report https://unstats.un.org/sdgs/report/2019/goal-11/. Retrieved on 3.02.2021.

Urbanitsa, A. M. (2020). Architektura-sztuka przestrzeni publicznych w Polsce wczoraj i dzisiaj (Architecture: The art of shaping public spaces in Poland yesterday and today). Państwo i Społeczeństwo, (XX) https://doi.org/10.48269/2451-0858-pis-2020-3-006, nr 3.