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Post-Pandemic Public Space: How COVID-19 May Permanently Alter the Public Realm

Thomas Fisher *

Department of Architecture, Landscape Architecture and Interior Design, University of Minnesota, Minneapolis, MN 55455, USA

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ABSTRACT

This research looks at the impact that pandemics can have on public space. The goal of the research was to learn from the past to anticipate the long-term effects of COVID-19 on the public realm. The research involved exploring the history of the effects of two major global pandemics – the 19th C. Cholera and the 20th C Influenza pandemics – as well as documenting the effects of COVID-19 as they occurred. The main finding of the research is that pandemics have long-lasting impacts on public space, although each has a somewhat different effect, depending upon whether it is bacterial or viral-based and how different countries and cultures respond. The research also shows that COVID-19 has been unique in rebalancing what we do in-person or remotely, physically or digitally, which will likely have profound effects on the use of public as well as private space. This, in turn, will demand a re-evaluation of public policies, many of which are based on pre-pandemic assumptions about in-person interactions as the primary way in which people work, shop, learn, and live.

*Corresponding Author

Email: tfisher@umn.edu

Tel: +(01) 612-237-4185

1. Introduction

This paper expands upon research conducted as part of a book on the physical, social, economic, political, and architectural impacts of pandemics [1]. While the book considers the effects that prior pandemics, as well as the current COVID-19 pandemic, have had on urban spaces, this article expands upon that research by going into greater depth in the literature as well as exploring further the urban design implications of a post-COVID-19 world. The goal of this work is to learn from previous pandemic effects and to begin to anticipate what the future will bring once the COVID-19 pandemic finally ends.

2. Research Overview

At least a decade before COVID-19 arrived as a global plague, the built-environment community had begun to anticipate how the public and private realms might change as a result of a viral pandemic. The journal *Places* published articles by this author on the impacts viruses have had on cities [2] and on the public health significance of the work of landscape architect Frederick Law Olmsted [3]. Around the same time, the gallery Storefront for Art and Architecture hosted an exhibit, "Landscapes of Quarantine," that displayed the work of 18 artists, designers, and architects, who looked at the myriad urban implications of epidemic-related quarantines [4].

The public health community has long examined the relationship between cities and human health, as far back as Dr. John Snow's discovery in 1854 that cholera came from contaminated water in London's Broad Street pump [5]. But perhaps because of the relatively large periods between global pandemics in the 20th century – the so-called "Spanish flu" in 1918 [6], "Asian flu" in the 1950s [7], and "Hong Kong flu" and "Russian flu" in the 1970s [8], and - the architecture and urban design communities paid relatively little attention to the impact that pandemics can have on cities until after the "Swine Flu" pandemic of 2009, which killed upwards of half a million people worldwide [9]. As a result, the literature on the impact that these global plagues have on public space remains small, with much of the research coming from a public health perspective in terms of ensuring social distancing in public space during a viral pandemic or addressing water and mechanical infrastructure when addressing bacterial disease [10].

3. Research Background

The COVID-19 pandemic has accelerated interest in public health within the urban design community. Efforts like the Epidemic Urbanism Initiative [11] have emerged as a forum for sharing information and research related to public health in public spaces, and the recent book that the Initiative's founders have edited, *Epidemic Urbanism, Contagious Disease in Global Cities*, [12] show how the connection between pandemics and public space has begun to capture the attention of both urban historians and public health professionals. Since the COVID-19 outbreak, myriad publications and research institutes have focused on the urban design implications of such viral pandemics [13-22].

This research has revealed how many aspects of the public realm that we now take for granted arose as a result of previous pandemics. Operational aspects of public space, such as street sweeping and police patrolling, and physical changes, such as the creation of cemeteries on the outskirts of towns rather than in "churchyards" in city centers, arose during and after the bubonic plagues in late medieval and early modern eras, changes captured in Daniel Defoe's 1772 book, *A Journal of the Plague Year* [23].

The cholera pandemics of the mid-19th century had equally long-lasting effects, leading to the recognition that growing, industrial cities were not just larger versions of small towns and that this new form of urbanism needed a new type of infrastructure, especially related to water and waste. That led cities and towns around the world, starting in the second half of the 19th century, to install municipal water systems, indoor plumbing, and sanitary sewers [24]. Changes to public space, such as park fountains, public bathhouses, and publicly accessible lakes signaled, among other things, the safety of a community's water supply [25, 26].

The 1918 influenza pandemic affected public space in a different way [27]. The social distancing promoted during that viral plague pushed people to avoid large crowds and close quarters, which prompted many people to want private automobiles, single-family houses, and front- and side-yard setbacks from their neighbors. That global pandemic, in other words, helped prompt the suburbanization of many cities that occurred throughout the 20th century. From that history, we can see that while a pandemic may only last two or three years, its impact on public space, public life, and public health continues for decades [28].

4. Research Questions

That then leads to the question: what long-term effects will the COVID-19 pandemic have on the public realm? We won't, of course, know for certain until years from now, but we can nevertheless see inklings of that future in what has already happened during and after this recent plague. Historically, pandemics accelerate trends already underway, taking phenomena that might have stood at the margins of public life and making them central to it, and we have seen that happen as a result of the recent plague. While the use of digital devices such as smartphones and mobile computers has existed for several years, most of us, before the pandemic, continued to behave largely as we had before the digital revolution, going to an office to work, to a store or market to shop, and to a school building to learn [29].

The COVID-19 pandemic forced us to change that behavior. The global shutdown pushed those with access to technology to embrace the capacity of the digital world to allow us to do much of that remotely. Indeed, for perhaps the first time in human history, people with a phone or computer and an internet connection could get almost any good or service delivered to their door or their device [30]. The implications of that for public space are profound, and they fall into four categories: the changing definition of what we mean by "public" and "private," the changing balance between what gets done remotely or in person, the changing uses of public and private spaces, and the changing nature of public infrastructure.

5. The Changing Definition of Public and Private Space

Cities have long had very clear definitions of what we consider public or private space. One definition reflects its ownership: governments at various levels control and maintain public space and private entities – individuals, families, and organizations – do the same for private space [31]. Reciprocity, of course, exists between these two realms: publicly mandated zoning and building codes, for example, apply to private property, and private property owners pay taxes that contribute to the maintenance of public rights-of-way [32]. Gradations of semi-public and semi-private spaces also reflect the inter-relationships of the public and private realms: privately owned shopping malls that accommodate public events, for example, or public parks that accommodate private parties [33].

The COVID-19 pandemic accelerated a blurring and in some ways, a flipping of what we mean by "public" and "private" space. Social media pre-dated the pandemic, but once those who had the necessary technology and internet connectivity were forced to go online to work, learn, and shop, activities that once took place in public or semi-public spaces began to occur in people's homes. Living, dining, and bedrooms became the places frequently used by students to attend class and by employees to work remotely, turning their most private spaces into very public ones [34].

That echoed a broader trend in social media in which people now post private messages and personal photos on publicly accessible platforms, a trend accelerated by the pandemic as people sought to overcome their physical isolation [35]. At the same time, because of the need to socially distance during the pandemic, people wanting privacy from homes sometimes full of people engaged in various activities, would seek the quiet of nearly empty public spaces, even as surveillance technology became more prevalent there [36]. What was once private has increasingly become public, even as the public realm has increasingly become a place for privacy.

That change in the meaning and role of public and private space has real consequences for the design of both types of spaces. A future of hybrid working and living on the part of many people may require a rethinking of private space as a type of performance space, with adequate lighting, proper acoustics, and appropriate backgrounds becoming as important in one's home as they are in theatrical performances. At the same time,

public space will need to focus on what private spaces cannot do well, such as the provision of engaging gathering places, serendipitous and unexpected experiences, and memorable and spectacular events. While social media can connect us across spatial and temporal distances, it also tends to depress us, isolate us, and insulate us from anyone and anything not already in our orbit [37]. The latter then becomes a new role for public places: stimulating us, connecting us, and exposing us to what lies outside of our expectations that maybe we didn't know we needed or even liked.

6. The Changing Balance Between Digital and Physical Realms

The shifting relationship between the digital and physical realms, propelled by the pandemic, has altered the spatial relationships of many people. Research has shown that 58% of the U.S. workforce will continue to work remotely at least part of the time, with 35% working remotely full-time, representing 91 million employees [38]. Again, the technology that enables remote work existed before the pandemic, but COVID-19 forced many employers, educators, and proprietors to offer the choice of working remotely to their employees, students, and customers. We have only begun to understand the implications of that for public space, as fewer people go to offices less frequently and as more people remain at home, many of whom have fewer of the services and social connections that they had with in-person work.

We have long had the global trade of goods, but the COVID-19 pandemic also accelerated a trend already underway: the global trade of services [39]. Many employees, who once had to seek work only among the employers in their areas, now have a choice in terms of whom they work for and where; if one employer doesn't want to offer their staff remote or hybrid working conditions, many others will to compete for the best people.

Something similar has happened in higher education. Many college students, who once had to live in or close to the campuses in which they studied, now have a choice in terms of where they study and where they can live and still do so; institutions that require students to attend in person will find it increasingly difficult to attract or keep the best and brightest.

The shift to a hybrid of bricks-and-mortar and digital access has affected the retail world as well. Many customers, who once had to select products and services from what they had available in their local area, now have choices in terms of where they shop and what they can have delivered to them; companies that do not participate in e-commerce will likely not last very long.

In terms of public space, the pandemic's acceleration of telecommuting, distance learning, and online shopping has taken many of the activities that once occurred in public and semi-public spaces into the digital realm [40]. Now that so many people have experienced the choice they now have between remote or in-person interactions, very few will go back to a pre-pandemic existence, however much some people may yearn for those times.

And why would they? Choice means that some people will undoubtedly return to going to offices, classrooms, or shops full-time, even as others undoubtedly won't, and so choice, once available, rarely gets taken away. Those in positions of power may think that they can command their staff or students to return to in-person, but they will soon discover that anyone with the ability to go where they have more choice, will likely take that opportunity.

The design of public space will have to account for the choices people now have. Public space can counter the convenience of working, learning, and shopping online with the captivation that comes from not doing so, providing immersive experiences, immediate conversations, and immanent events that can both complement and compete with the isolating and intangible nature of digital interactions [41].

Indeed, the physical world might do well by tracking what the digital one doesn't, and do more of that to fill the gap. Public space can present us with real people instead of their online presence, actual occurrences instead of their digital simulations, and multi-sensory encounters instead of their video capture. The paradox of pandemics is that while they sicken and kill many of those stricken with disease, they also strengthen those who survive them to have more clarity about the value of social interactions with family and friends.

7. The Changing Use of Public and Private Space

The COVID-19 pandemic brought changes to the private use of public space [42]. Many restaurants, in addition to delivering food to those who ordered online, moved tables outdoors, taking up space in sidewalks or parking lots for diners unwilling to eat inside. Likewise, other organizations and institutions that gathered people together in concert halls, worship spaces, and recreational facilities moved outdoors, engaging in their activities in parks and plazas, fields and forests. In other words, the functions that typically happened in buildings came to occur outdoors, as architecture in some sense, turned itself inside out to become an integral part of the landscape.

This functional inversion of activities raises questions about what needs to happen in private spaces versus public ones. The public sector has long sought to enforce the functions allowed in buildings and ensure the safety of building inhabitants through codes, but how do those concerns change when gatherings and events move outdoors, as some have, permanently, even as the pandemic has ended? Egress in the case of a fire may become much less of a concern, but the accessibility of private activities on public land and the conflicts that they can have with other public interests and events may become more of an issue.

The insertion of once private functions into the public realm also presents dilemmas in terms of who is allowed to do so and who isn't [43]. A concert may disturb the sleep of neighbors and religious service, the sensibilities of passers-by, but what about a hate-group rally or a threatening march? How much should public space allow or prohibit certain kinds of speech or actions? If the pandemic forced all sorts of once-private activities into the public realm, we would have to sort out, in the post-pandemic era, what activities the public will accept and which ones it won't.

The design of public space can help mitigate such dilemmas. It can provide a degree of privacy in public space by separating potential conflicts with visual and acoustical barriers, minimizing potential complaints with the timing and scheduling of activities, and coordinating activities that complement each other with the proper curating of events. Indeed, the pandemic has revealed the need for a new kind of role – public realm curation – that rarely existed before [44]. As more and more activities seek to use public space, the public realm becomes as much of a presentation and performance space as any museum or concert hall and the curation of activities becomes as central to the former as it is to the latter.

8. The Changing Nature of Public Infrastructure

Before COVID-19's arrival, infrastructure typically referred to the physical systems that transported people, water, waste, and power, but the pandemic revealed the profound inequities that existed in people's access not just to those physical systems, but to digital and organizational ones. Unequal access to healthcare became apparent as especially people and communities of color lacked access to emergency services and COVID-19 vaccines and unequal access to the internet became visible as people young and old did not have the devices or digital connectivity they needed to continue learning or working [45].

Indeed, the pandemic has forced a conversation about how much digital versus physical infrastructure we need in public space. In a future in which fewer people will commute to offices or travel to learn or shop, we may need less vehicular and more virtual infrastructure, fewer travel lanes on our roads and bridges, and a greater capacity on the information highway [46]. How much of each will depend on the same issues that drove our physical infrastructure in the past: Where do gaps in access exist? Where have inequities among different groups occurred? And what do communities need to support their economies?

Such questions will undoubtedly drive the design of public space in the future. Many of our infrastructure assumptions will need revision as investments in the digital realm may increase in competition with those in the physical realm: widening roads rather than expanding broadband may harm a community and its economy more than help it. Investments in digital infrastructure may allow us to create more space in the physical realm for people and plants rather than cars and trucks, something that can have community benefits far beyond those of transportation. The information highway takes very little public space, providing much more space for the diversity of public activities that a focus on vehicular transportation has long precluded.

9. Discussion

The World Health Organization declared the end of the COVID-19 health emergency in May 2023 [47]. But, as the WHO chief admits, the pandemic "exposed political fault lines, within and between nations. It has eroded trust between people, governments, and institutions, fueled by a torrent of mis- and disinformation... (leaving) deep scars on our world... with devastating consequences" [48]. If past global pandemics are any indication, it will take a very long time to heal those scars and work through those consequences, many of which involve the public realm and public space, which depend upon trust between people and between them and their governments and institutions.

Rebuilding that trust will depend, in part, upon how we address the changing definition of public and private space, the changing balance between the digital and physical realms, the changing uses of public and private space, and the changing nature of public infrastructure. Some governments and institutions may remain in a pre-pandemic mindset and continue to operate as if the COVID-19 pandemic was a temporary inconvenience with little or no consequence, but that mindset will only delay their coming to grips with the long-term changes in public policy that this pandemic, like previous ones, may propel [49].

We will not know, definitively, what those changes will be or how the pandemic's effects will play out for many years to come. But there is no question that the post-pandemic world will be very different from the pre-pandemic one. Public space will, of course, continue to play a key role in people's lives, but how much of it occurs in the physical or digital world, and publicly or privately owned space, remains to be seen. It may be that, just as previous pandemics accelerated changes already underway at the time they occurred, the COVID-19 pandemic has simply propelled us further and faster in a direction we were already going, in which case we are already in the future that we might have thought, before the pandemic, was decades away.

The challenge we face is how to use this post-pandemic era as an opportunity to create a more just, equitable, and sustainable world. That did not happen after the Black Death, as Defoe wrote: "Our infection, when it ceased...did not cease the spirit of strife and contention, slander and reproach, which was the great troubler of the nation's peace before" [50]. May we learn that lesson and create a public space in which we can have the conversations and take the actions necessary to cease the injustices, inequities, and unsustainability of our past.

10. Conclusion

In terms of research, there remains much to be explored about the impact of the COVID-19 pandemic on public space. The above analysis has laid out four areas of future investigation: the relationship between public and private space, digital and physical interactions, public and private activities, and public and private infrastructure. While we can already see changes in all four areas that suggest the extent of the pandemic's impact, we will likely not see the long-term impacts for years to come. This suggests the need for a research area parallel to that of public health, in which we continually assess the health of public space and how it affects the health of its inhabitants [41].

Wray, Fleming, and Gilliland offer a useful framework for doing so [51]. These authors argue that communities can do one or more of three things during a health emergency: restrict people's behavior, invest in infrastructure, and/or educate people about the risks. Those three alternatives, in turn, suggest how we might assess the health of public space and its effect on the health of people going forward, asking how different kinds of spaces or systems might restrict people's behavior or not, accommodate their activities or not, and inform them of the risks or not. Perhaps through such research, we might, in the future, avoid the political fault lines, eroded trust, and misinformation that made the COVID-19 pandemic such a traumatic experience for so many people, in so many places.

Conflict of Interest

The authors declare that they have no competing interest.

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