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When New Sounds Come. The Sociocultural Effects of City Soundscape Change Based on the Example of the Pandemic

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Abstract

2020 has been called the year of silence for a reason. Actions such as lockdown taken by the majority of countries in the world aiming at preventing the spread of SARS-CoV-2 virus influenced many different areas including surrounding us soundscape. Devoid of noise and sounds associated with human activity soundscape of cities attracted attention not only of researchers and sound ecologists but also people not professionally related to sound studies. Such a great interest in sound space was primarily due to the scale of the changes that affected it. In order to better understand the nature of these changes and the response to them, I begin by presenting the state of the audiosphere before the pandemic, as well as the achievements in the field of acoustic ecology—a research direction that emerged in response to the state of sound space at the time. Referring to the writings of acoustic ecology pioneer Raymond M. Schafer and the continuators of his thought I present the role of sound in the city and its impact on humans. I also explain terms that have emerged from soundscape studies that make it easier to navigate the issues I am addressing. The knowledge presented in this way provides a starting point for understanding the sound pandemic situation, which I draw on the basis of a review of popular science literature such as *BBC Future*, *Scientific American* and *The Washington Post*. Using them, I present the areas in which audible changes took place and the reactions to these changes. I also describe the educational action taken at the time to explain the audible situation and to exploit its sonic potential. This overview concludes with an attempt to outline the future of the urban soundscape, based on the opinions of the authors of the mentioned publications as well as my own conclusions.

Keywords: soundscape, audiosphere, acoustic ecology, noise, silence, city, urban space, Covid-19 pandemic

1. Introduction

In 2020, the entire world was engulfed by the Covid 19 pandemic, affecting most aspects of human life including the surrounding sound space. The increasing level of noise, which had affected in particular urban centers for almost a century, was significantly reduced during the pandemic by a decrease in the presence of anthropogenic sounds. The unusual soundscape aroused the interest of both people studying sound and those not professionally involved with the audiosphere, at the same time revealing the spectrum of sound issues that society had to face.

In order to understand the scale of the changes that took place in the sound space of cities during the pandemic, it is worth going back to the time preceding it, more specifically to the industrial revolution. It is then that one can see the sources of significant transformations in the sound space. On the one hand, this is a time of increasing noise, but on the other hand, it is also a time of shaping actions to counteract this noise. In the following, I would like to dwell on this historical period, a description of which will serve both to present the state of the audiosphere before the pandemic and to provide a starting point for talking about acoustic ecology—a direction which achievements I use in several fields, including terminology. I will present its main postulates, as well as the most important terms, which will make it easier to navigate the further issues presented in this article. It will also become a starting point for understanding the changes occurring in the audiosphere during the pandemic as well as the response to these changes.

2. Sound, noise and soundscape. Introduction to acoustic ecology

Let's go back to the industrial revolution. Prior to this period, noise was not a serious problem, because until the end of the 19th century, humans were mainly surrounded by the sounds of nature. As we entered the industrial age, more and more noises related to urbanization processes began to appear. Technical sounds resulting from the mechanization of cities along with the new phonic components of communication experienced through technological development, led to ever-increasing noise levels (Regiewicz & Warońska, 2012).

In response to this phenomenon, a new research direction—acoustic ecology was initiated at the turn of the 1960s and 1970s. Its founder, Canadian composer Raymond Murray Schafer, set himself the goal of exploring soundscapes and making people aware of the benefits of conscious perception of sounds. He also drew attention to noise, which he saw as a real threat to society. Together

with the *World Soundscape Project*, a research group he founded, he recorded and analyzed recordings while developing a language to describe the phenomena under study (Marciniak, 2013; Schafer, 1977; Schafer, 2004). I will elaborate on the importance of sound education in the context of projects during the pandemic that referred to Schafer's postulates. Now, however, I would like to focus on the terminology mentioned above, which will make it easier to navigate the issues presented here.

At this point, it is worth first of all introducing the term that is most often mentioned in the context of acoustic ecology, which is increasingly common in everyday use, but often misunderstood or inaccurately interpreted. The term *soundscape* was first used in 1969 by Michael Southworth in the urban space research of Boston, but the role of sound in the landscape was discussed in the 19th century in descriptions of the naturalist Alexander von Humboldt's journeys. The poet Wincenty Pol or the author of the theory of absolute geography Johannes Gabriel Grano also drew attention to the importance of sound (Bernat, 2015a). Most commonly, however, the concept is associated with the birth of acoustic ecology and the figure of Raymond Murray Schafer.

Geographer Sebastian Bernat defines soundscape as: “a set of sounds of biological, geophysical and anthropogenic origin occurring in the landscape as a result of natural processes and human activities, but also a sound event experienced by an individual or society in a specific fragment of space” (e.g. Pijanowski et al., 2010; Farina, 2014; Schafer 1977, as cited in Bernat, 2015a, p. 170). In the *Handbook of Acoustic Ecology*, composer Barry Truax defines soundscape as: “a sonic environment conceived with emphasis on the way it is perceived by an individual or society” (Truax, 1999, as cited in Tańczuk, 2020, p. 13). Thus, soundscape can be considered as all sounds anywhere and anytime that collectively create specific sound environments, e.g. a street or a park (Nazaruk 2020), with a particular emphasis on how it is perceived by the recipient. In Poland, the term is most often translated as “krajobraz/pejzaż dźwiękowy/akustyczny, otoczenie/środowisko dźwiękowe or przestrzeń dźwiękowa/akustyczna” (Bernat, 2015a, p. 167).

Soundscape is, as I said, one of the more popular and also more capacious terms to describe the sonic state of a space. In order to define the sound we encounter in terms of its source, it is worth recalling the distinction proposed by Bryan C. Pijanowski, Almo Farina, Stuart H Gage, Sarah L Dumyahn and Bernie Krause. Included in this typology are the anthropogenic sounds—antrophones I mentioned above, which are considered to be sounds associated with human activity. Alongside these are biophones—sounds of animate nature and geophones—sounds of inanimate nature (Pijanowski et al., 2011, pp. 203-216).

It is also worth pointing to further terms developed by Schafer; although it is possible to speak of many complex typologies, given the issues at stake here, I will limit myself to indicating and explaining the terms used here. These will

be soundmarks, i.e. sounds that are particularly characteristic of a particular place, such as the sound of church bells or a city bugle call. It is also important to distinguish between a hi-fi soundscape, i.e. a soundscape specific to rural areas and non-urbanised areas, and lo-fi, a soundscape identified with noise (Schafer, 1977, pp. 43-52; Schafer, 2004, pp. 32-33).

By the same token, I return once again to an important topic for this article and, in a way, the reason for the birth of acoustic ecology, namely the issue of noise that can be defined in many ways. In Schafer's terms, it is understood first and foremost as the opposite of silence, identified with sonic overcrowding, overlapping of sounds and making them incompatible with the place in which they function (Bernat, 2013, as cited in Szpunar, 2020, p. 10).

In addition to the above definition, noise could be defined as the presence of loud, high intensity sounds or even as an excess of acoustic stimuli (Losiak, 2017). Emphasizing the subjective dimension of the perception of noise, it is also often defined not only as an excess of sounds, high intensity, but any presence of undesirable sounds (Bernat, 2015b, p. 47) or any undesirable acoustic phenomenon, which in turn can be treated as a form of environmental pollution (Szpunar, 2020, p. 5). The subjectivity of noise sensitivity, which is conditioned by variables such as a person's age, state of health or mood (Szpunar, 2020, p. 14), does not negate the possibility of excessive noise exposure, which can affect any person. This exposure, in turn, can result in ailments such as tinnitus, sleep disturbance or, in the worst case, hearing loss (Pawlas, 2015, as cited in Szpunar, 2020, p. 13). Few people realize that noise, in addition to its negative impact on a person's physical health, is also a major cause of reduced quality of life. Therefore, it is the anthropocene epoch dominated by noise caused by anthropogenic sounds that is considered to be “an environment that is hostile to many organisms, including humans themselves” (Szpunar, 2020, p. 7).

3. When new sounds come... The audiosphere of the pandemic

The above-mentioned environmental condition could be referred to continuously until the pandemic, when entirely new sound spaces of cities originated. Creating a sound map of cities during the pandemic, British composer Pete Stollery, in the pages of *ABC News* magazine, proposed to distinguish four groups of sounds constituting the sound of the pandemic city. These were: sounds of nature, depopulated city centers, pandemic loudspeaker announcements and new sound events (Stollery, 2021).

While there is no doubt that sounds associated with the pandemic situation were a significant predominance, it was primarily the presence of nature sounds that were mentioned as the first difference in the pandemic soundscape noted by people (Bronzaft, 2020; Carpenter et al., 2021). Amandine Gasc,

a soundscape ecologist, acknowledged, for example, that the pandemic allowed her to move part of her work to a balcony from which she could record sounds previously only available in parks or forests (Schwing, 2020).

This phenomenon was primarily influenced by the reduction of antrophones and thus a significant decrease in noise levels. This was due not so much to the pandemic itself, but to the restrictions and limitations that pulled waves of change contributing to a significant reduction in urban noise. Among the factors that made the greatest mark on the urban soundscape were: restrictions on movement (including reductions in flights and ground transport), restrictions on social life (no cultural events in public spaces such as concerts or festivals), restrictions on public gatherings and meetings and restrictions on the economy (strict rules on shopping malls or significant reductions in catering activities) (Goldman, 2020).

Most of the above-mentioned elements were closely interlinked, ultimately creating a domino effect, which could have been observed with a simple example—people doing remote work thus restricted their movement by various means of transport. Leaving the home less often and staying out of public places reduced the intensity of sounds associated with human activity, such as speech, but also all the industrial-technological noises that make up urban noise. Reduced noise, on the one hand, created sound-friendly spaces for animals, causing them to return to their previous urban habitats. On the other hand, it enabled humans to distinguish individual sounds from the audiosphere. In many cases, the sounds of nature were already present before the pandemic and were not associated with the return of animals, but it turned out to be extremely difficult to pick them out from the chatter and noise. According to Gasc, the pandemic situation allowed people to realize that the space they inhabited could be shared with other creatures (Schwing, 2020). A similar situation occurred with soundmarks, which merged into urban noise in the pre-pandemic period. According to sound designer Marinna Guzy, the change in soudscape has allowed city dwellers to listen to their neighborhood soundmarks, which were previously drowned out by street noise (Guzy, 2020).

Gasc’s and Guzy's observations were linked to an aspect that needed to be emphasized above all. This was the increase in people's awareness of the soundscape around them. The reasons for such an increase, or the emergence of an awareness of the audiosphere in people in general, could be found both in the scale of audible changes and in the very nature of sensory experience of sound. Constantly staying in the same environment results in getting used to it, not paying attention to it and sometimes even lacking a sense of its existence. Only changing it, experiencing different environment, for example when travelling, triggers a sense of the sound environment in a person (Bernat, 2015b, p. 6). In the discussed case, this radical change was initiated by the pandemic and, more specifically, by the aforementioned restrictions and limitations affecting noise reduction. This, in turn, translated into paying attention to the surrounding

soundscape. This first step, which involved paying attention to the sound environment, caused people to start actively and attentively listening to the space around them. According to Guzy, in this case it was possible to speak of a path taken from the process of hearing to listening, which the American composer Pauline Oliveros addressed in depth in her reflections (Guzy, 2020).

This fact was also influenced by educational projects familiarizing people with sound in the city by explaining the situation at the time and using its sound potential. The idea behind these projects goes back to the postulates of acoustic ecology, which aimed to educate the public in sound. Initiatives undertaken during the pandemic by various institutions encouraged the public to focus on the space around them by listening, recording changes and participating in attentive sound walks. These ventures include: *#StayHomeSounds*, *Silent Cities*, *Covid-19 Sound Map*, *RUPS Soundscape Project*, but most were based on similar premises. They were supposed to draw attention to the sonic changes that the coronavirus pandemic has had on the world, while activating people to take action on the soundscape surrounding them. Most often, all participation in the projects consisted of recording sounds, captioning them with a location or photo and uploading them to the organizers or posting them directly on the project website. One example was the *#StayHomeSounds* project, which created a website that allowed people to "travel" to any place in the world by listening to the sound reality recorded there. Its contributors could be (and can still be, as the project is currently developing) anyone with a sound recording tool and access to the Internet (Carpenter et al., 2021; Bhattacharya, 2021; Schwing, 2020). The benefit of all of these projects was not only to draw attention to the soundscape, but also to familiarize people with a new situation, which could be helpful for people who found the muted soundscape quite challenging.

4. Is silence always a desirable state? A few words about the role of sound

Witnessing the changes taking place in the sound space, it would seem that they were limited to these positive overtones of the pandemic. The decreasing intensity of anthropogenic sounds and reduced noise are desirable phenomena, especially if they result in an increase in sound awareness. However, it turns out that the issue of noise is somewhat more complex. For most people, streets, city centers, shopping malls and industrial spaces are not pleasant places, causing irritation, frustration, chaos and disturbance. In turn, parks or forests are considered to be sound-friendly places due to the silence, peace, harmony or absence of technical city noises found there (Szpunar, 2020, p. 14; Goldman, 2020). But what if this very silence is present in public spaces? Do they suddenly become more pleasant to be in? On the one hand, yes—it is, after all, about the aforementioned reduction in sound intensity. On the other hand, however, one must be aware that the soundscape is a carrier of certain content, associations

and symbolism. The sounds that make up urban noise, despite adding to the noise, are also a source of information for the community. The French philosopher and writer Michel Serres called this interaction between noise and auditory information parasitism. Noise, in this case, provides a substrate for auditory information, without which this information could not exist (Serres, 2007, p. 66). As a result, despite contributing to noise, the same sounds can be important to a community (Bernat, 2011, as cited in Szpunar, 2020, p. 10), if only because of the fact of habituation. Sounds can inform the time of day, the day of the week, the season or the specificity of a place. Stripping a place of the sounds that are characteristic of it can make it unfamiliar to a person and create a sense of danger at first. According to Sam Goldman, the lack of everyday constant sounds becomes a problem especially for visually impaired people, for whom sounds are the main source of information (Goldman, 2020).

Sound in the city, in addition to its informational function, generally indicates human activity. Silence, especially the one imposed from above is equated with a threat. It can also be interpreted as ominous and undesirable especially when it occurs suddenly and in a place where it is not expected. Robin Givhan gives the example of a person with the personality type of an introvert who, despite his preferences, perceives unintentionally created silence as an unnatural phenomenon synonymous with a lack of action and interaction (Givhan, 2020). It is not without reason that we use the saying “the calm before the storm” in Polish. It is also worth recalling an example from cinematography, where silence used as a stylistic device, especially in the thriller or horror genres, is meant to evoke anxiety.

In the case of the pandemic, the anxiety caused by the unexpected sound situation may have been further heightened by the presence of sounds belonging to two of the four aforementioned categories of noises constituting the sound of cities. These were either pandemic-related messages (such as information about the order to wear masks) or new sound events (such as ambulance signals) (Stollery, 2021). These sounds may have caused anxiety as a result of their short presence in the daily human sound environment and the resulting lack of habituation of the human ear to them. Above all, however, the frequency of occurrence and the sheer content of the audible messages repeatedly reminding people of the ongoing epidemic were entitled to cause anxiety and irritation in humans.

Awareness-raising activities and initiatives about the role of sound in the city and the experiences that can be associated with it may have been all the more helpful in dealing with these reactions. This, in turn, could have been important especially for people who first became aware of the presence of sound in the city only during the pandemic. As can be noticed, these activities were quite versatile in both helping to understand and practically exploit the existing audiosphere. I will return to the educational value of the projects, but it is worth noting the diversity of public reactions to the urban sound situation.

5. Does the end of the pandemic mean the end of sound changes? The state of the sound space after the pandemic

These examples illustrating the sound pandemic situation as well as the reactions to it, highlighted the multifaceted nature of sound and noise issues, including the subjectivity of the sound experience and the role sound plays in the city. This whole spectrum of aspects related to the sound situation raised questions about the perspective of the urban soundscape. Many people asked themselves about its future, the possible change in people's perception of soundscape and the equivalent return to old habits with the cessation of the pandemic (Bronzaft, 2020).

Now the answers to these questions are no longer speculation, but reality. Despite the rightly speculated return of noise and a sound situation reminiscent of that before the pandemic, a transformation has begun to take shape in people's minds. The reason for its occurrence may have been the scale of change that society experienced during the pandemic. It was then that anthropogenic sounds were significantly reduced in response to the reduction in human activity in the city, which in turn contributed to a reduction in urban noise. This, in turn, has challenged urban centers and their populations almost continuously since the industrial revolution. In the pandemic period, on the other hand, the sound situation in cities changed significantly. As noted by sound artist Stuart Fowkes, the originator of the *#StayHomeSounds* project, previously the only parameter that changed as a result of globalization and sudden urbanization was volume (Augustin, 2020; Bhattacharya, 2021).

It was only during the pandemic that the soundscape began to undergo radical transformations, thus capturing public attention. The muted soundscape, however, resulted in widely varying reactions from calm to fear and anxiety. Projects and activities have helped to make people aware of the role that sounds play in urban space, as well as the subjectivity of their reception, while pointing out the complexity of sound issues. The educational value of the projects has also always guided acoustic ecology, a direction that emerged in response to noise. Schafer's study of the soundscape made people aware of sound in urban space, its aesthetic but also communicative value (Schafer, 2004).

During the pandemic, it became apparent that this awareness was at a low level, but people started to pay attention to the sound space around them and wanted to educate themselves about it (Sims, 2020). This was evidenced by the involvement in various activities concerning this sphere. Moreover, the projects initiated during the pandemic did not stop with the end of the pandemic, but began to grow, touching on increasingly different sound issues. The topic of soundscape began to be taken up in public debate, with more and more conference speeches, meetings or workshops being devoted to it. At the moment, despite the return of the audiosphere to its pre-pandemic state, these undertak-

ings are a much-anticipated turn towards building public awareness and sensitivity to sound. As the example of the pandemic has shown, the issue of sound in a city is a multi-layered one. Noise attenuation cannot therefore be achieved by a sudden reduction in sound intensity, if only because of the loss of audible communication. Instead, it is valuable to point out the role of the human being in creating the sound space by building appropriate habits and practices. One can only hope that both grassroots educational activities and discussions at higher levels will translate into real changes in the future, shaping the city's sound spaces in a more thoughtful and conscious manner.

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