



The Effect of the COVID-19 Pandemic on Heritage Festival Soundscapes—A Critical Review of Literature

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Abstract

Purpose of Review The response to COVID-19 in the global community resulted in a disruption of usual sensory experiences associated with quotidian life and special events. While research has investigated urban and rural soundscape alteration/change during COVID and post-COVID, no summative work has focused on soundscapes of traditional (heritage) festivals. Research is warranted as cultural heritage festivals are significant and fundamental for human societal functioning, and associated soundscapes are a key aural reflection of these. This paper aims to critically review literature published from 2020 on the effect of COVID-19 on heritage festival soundscapes, with a particular focus on the loss of aural experience examined from a community perspective.

Recent Findings We identified fourteen articles which covered heritage festival sounds or soundscapes, with the resultant aural experience being transformed, postponed or discontinued due to pandemic restrictions. There was a distinct lack of formal research investigating how communities perceived these changed soundscapes, with perceptions generally based on researcher's own perspectives, either through informal conversations with community members or through content analysis. Furthermore, we identified no research which specifically targeted community perceptions of transformed heritage festival soundscapes.

Summary In recognising and understanding both the importance of sensory components in creating a festival atmosphere and the significance of heritage festivals to the community as a cultural signature, the COVID-19 pandemic gives us a chance to pause and consider festival sensory components as an experienced intangible form of heritage and to question how alteration of these sensory heritage experiences concerns the communities affected.

Keywords Aural heritage · COVID-19 · Festive processions · Music festivals · Nostalgia · Religious heritage

Introduction

The concept of a “soundscape” has been developing since the work of Schafer [1], being now universally defined as the totality of all physical environmental sounds as recognised by an individual or group, experienced within a social context [2]. In viewing the acoustic environment as a resource, generated sounds and soundscapes have as much to do with

individual perception, cultural background, prior familiarity and contextual presence as the individual sound(s) themselves [3–6].

Previous research has investigated soundscapes of natural environment settings [7], outdoor urban settings [8], religious spaces [9] and cultural landscapes [10]. More recently, research has examined the concept of sound and soundscapes as a form of intangible cultural heritage [11], as part of the sonic ecology of city spaces [12] and of the aural heritage landscape [13], from individual religious heritage sounds [14] to soundscapes at heritage places which express transformation over time [15]. Within the heritage realm, iconic sounds from soundscapes can be classified as soundmarks, with recognition being vital when determining the heritage value of soundscapes as perceived by the community [11, 16].

To briefly summarise heritage guidance practice, the cultural significance of any site or place is determined through an

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evaluation of aesthetic, historical, social and scientific value components, directed through legal frameworks [17–19]. Cultural significance may include both tangible and intangible components, with the intangible component comprising those elements of the visual, auditory, olfactory, gustatory and tactile/haptic [20]. Visual components have historically formed much of the consensus for past heritage assessment, generally abiding by the “authorised heritage discourse”, whereby heritage assessors traditionally come from the archaeological, architectural and historical disciplines and subsequently basing their assessments on materiality and monumentality [21]. However, as noted above, there is an increased awareness of the importance of intangible heritages, and heritage soundscapes are certainly an emerging field of research—most notably in the realms of music heritages, religious aural heritages and city soundscapes [22].

The literature conveys recognition of cultural festivals as a form of community heritage practice—a festival being one of the means through which a community can support and celebrate identity, continuity, common purpose and shared beliefs and values [23]. Festivals have been recognised as an important tool to enrich the cultural lives of community members, as a central aim for festivals is to preserve heritage and culture through the act of regularly engaging with and celebrating it [24]. Furthermore, (heritage) festivals generate strong feelings of connectedness in response to the “sensual and embodied responses aroused by the visual, oral, olfactory and haptic elements of an event”, generating intangible effects such as social cohesion and the creation of a positive atmosphere, alongside typically observed positive economic impacts [25, 26]. Such an atmosphere can be generated through the combined effect of the materiality of space, comprising of (but not limited to) the elements of visual (architecture and lighting), haptic (temperature) and the aural (sounds and physical and sensory responses to music) of the festival experience [27].

The unique threat of the COVID-19 pandemic resulted in the cessation of large gathering events to minimise virus transmission rates, with festivals being particularly vulnerable to imposed social restrictions [28]. As a result, streets and squares that were usually full of festival activities became “vacant, empty and still”, with the absence of festivals providing impetus for a greater awareness of the loss of the visual, the aural and the feel of festival spaces [29]. Despite previous research looking at the effects of the COVID-19 pandemic on individual sounds [30], city sounds and soundscapes [31, 32] and heritage spaces [15], notwithstanding detailed literature reviews on pandemic-affected sounds and soundscapes globally [33••, 34•], no summative work has focused on soundscapes of traditional (heritage) festivals. Research into this topic area is warranted as cultural heritage festivals are significant and fundamental for human societal functioning, and associated soundscapes are a key aural reflection of these.

This review aims to contribute to the growing body of literature on soundscapes, by examining both the effect of the COVID-19 pandemic on heritage festival soundscapes

and the extent that the literature discusses change (or loss) of experience from a community perspective. In doing so, this paper will critically review literature published from 2020 on the effect of COVID-19 on heritage festival soundscapes, with a particular focus on the loss of aural experience examined from a community perspective.

Methods

To investigate what research addressed how the COVID-19 pandemic affected heritage festival soundscapes, a literature search was undertaken on July 14, 2023, using the two databases Scopus and Google Scholar. Terms were searched for soundscape, heritage and COVID-19 components using Boolean operators: covid AND (“heritage festival” OR “cultural festival”) AND (shutdown OR lockdown OR soundscape). Terms were chosen based on previous reading, knowledge and research undertaken by the authors in the sensory domain. Searches were undertaken using the fields “all types” and “all fields” for records published for the years 2020–2023 inclusive (up to the search date 14 July 2023), with search decisions limited to this period based on the realised occurrence of the pandemic.

The search yielded a total of 451 items, and following the removal of duplicates ($n = 17$), there were 434 usable items to be screened under pre-stipulated exclusion criteria (Fig. 1). Based on text in titles and abstracts, articles were excluded if a record did not discuss (heritage) festival sounds or soundscapes or if the research did not discuss aural changes associated with the COVID-19 pandemic. Such exclusion criteria resulted in the rejection of 349 records. Records were also removed if they were written in a language other than English ($n = 13$)—including records written in Italian ($n = 4$), Indonesian and Portuguese ($n = 3$ each) and Latvian, Polish and Spanish ($n = 1$ each).

After the completion of title and abstract screening, a total of 72 records remained for full-text screening. Full-text screening resulted in another 58 records being subsequently excluded as they did not meet the initial inclusion criteria above, did not clearly describe sounds or soundscapes of cultural heritage festivals or did not clearly describe resultant aural loss through the festival being altered, postponed or discontinued due to pandemic restrictions. After the removal of all records due to the above criteria, a total of 14 articles were then considered for inclusion in this literature review.

Results and Discussion

Some research identified through this literature review simply made comment on the hiatus of cultural/heritage festivals during the pandemic shutdown period,

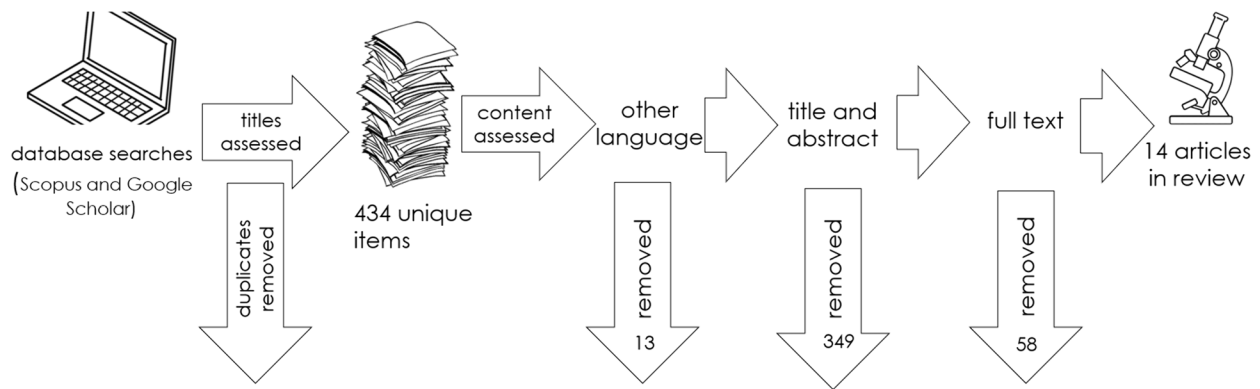


Fig. 1 Methodological process for this literature review

with the result being a general silencing of the typical or iconic sounds and soundscapes experienced on-site. Such examples include the silencing of iconic music and soundmarks of the Gigli di Nola cultural festival (Italy) [35] and the alluded alteration/loss of iconic collective choral sounds from thousands of festival participants of the Osun Osogbo Festival (Nigeria) due to the 2020 government bans of processions and attendance of festival visitors [36].

In addition, some research simply commented on the loss of certain live aspects of festival soundscapes due to the alternative shift to a livestreamed online festival experience. Such examples here include digital performances of traditional songs associated with *Kaamatan* Harvest Festival (Malaysia) [37] and a digital shift from live performance to recorded performance and heritage-focused online programmes for the 2020 Edinburgh Jazz and Blues Festival, before a hybrid-style festival return in 2021 [38].

Of all the papers identified in this review, ten discussed in detail the effect the COVID-19 pandemic had on heritage festival sounds or soundscapes and/or discussed community perspectives of the subsequent change of aural experience (see Table 1 for the summary of sound and soundscapes findings). Of these, the majority discussed either a digital pivot to an online festive experience, either immediate or through multiple transitions, while others discussed alternative live offerings of the traditional format, usually on a much less grand scale, and in some cases, uniquely intimate and curiously socially interconnected.

Festive Processions

The effect of the pandemic on the Mardi Gras Carnival season in New Orleans (US) was one such example of an alternatively presented heritage festival, as evidenced in two records identified in this review. Traditionally, the annual

Carnival season spans a number of weeks from January 6th, including street parades of increasing intensity towards the final week; the parades present a typical soundscape of brass band music providing the supporting rhythms for the floats [39]. With marching bands supporting larger parades and jazz bands supporting smaller parades, these musical sounds can be considered to be a major significant factor which “moves people emotionally and physically”, giving Carnival a unique life and experience [39].

Following the success of Carnival 2020 (prior to pandemic restrictions), the 2021 festival was impacted by the COVID pandemic due to a ban on public gatherings and a socially distant event developed inspired by a social media comment encouraging people to “turn your house into a float and throw all the beads from your attic at your neighbors walking by” [39]. Stationary house floats emerged, ranging from simply decorated houses with tinsel and lights to professionally designed elaborate ones, and presented as an alternative festival during the height of the pandemic. Despite the exciting visual displays of these silent and static floats, the research found the overall “sensory intensity of carnival was thoroughly diluted” in Carnival 2021, with some researchers considering the house floats as a “a stand-in for a multisensory spectacle ... (being) ultimately a failure” [39, 40].

The resulting alternative offerings undoubtedly lost the vibrant raucous atmosphere and soundscapes of the marching bands and the crowds of the typical festival confined in linear street settings, but interesting festival soundscapes were presented in return. First was a keen awareness of other ambient urban sounds like water dripping and muted television and music emanating from passing cars, rather than the typical festival sounds of live music and laughter, and there emerged a sense that the city became even more quiet in the days preceding Mardi Gras morning [40]. Other alterations of the characteristic soundscapes emerged, with small porch concerts being performed and music emanating through

Table 1 Summary of sound and soundscape findings

Article	Country of research	Festival of focus	Research approach to COVID-affected soundscapes	Sounds and soundscapes identified/affected	Investigated community perspectives of loss/alterd sounds
Alves et al. [35]	Italy	Gigli di Nola	comments only	music bands, bass drum, singing, crowd cheering, shouts, saxophone	✗
Galang et al. [42]	Philippines	Sinulog festival, Semana Santa, multiple feast days	expository writing, content analysis	pilgrim shouting, reading/chanting of verse, self-flagellating	✗
Parker and Spennemann [47]	Germany	Christmas markets	content analysis	festive music, choirs, brass bands, merry-go-rounds, vendor cooking sounds, chatter, laughter	✗
Annur and Dawayan [37]	Malaysia	Kaamatan Harvest Festival	comments only	traditional songs, singing competition	✗
Attanasi et al. [45]	Italy	La Notte della Taranta	field survey	traditional folk music	✓ - festival cancellation queried as a social and cultural loss
Hackett [36]	Nigeria	Osun Osogbo Festival	comments only	gunshots, speeches, collective singing	✗
Rogers [40]	USA	Mardi Gras Carnival	ethnographic observation	music, shouting, laughing, party sounds	✗ - perceptions centrally based on observations
Tiatco [43]	Philippines	Ati-atihan Festival, Semana Santa	content analysis	singing, chanting, praying, flagellation ritual sounds	✗
Apruzzese et al. [46]	USA	Various	web-based survey	live music	✗
Das et al. [48]	India	Durgapuja, Diwali, Holi	interviews and questionnaires	music, bursting of fire crackers	✓ - festival characteristics which engendered nostalgia
Dillane and Raine [44]	Ireland	Temple Bar's TradFest	ethnographic observation	bagpipes, drums, recorded and live (Irish) music, buskers, laughter, clinking of glasses, diverse languages, crowds	✓ - but perceptions centrally based on observations and informal chats
Giri [41]	Canada	Navaratri, Dussehra, Deepawali	ethnographic observation	traditional instruments (<i>dholak</i> , harmonium, <i>kartal</i>), pop instruments, <i>bhajans</i> , audience applause, singing participation, devotional sounds (temple bells, <i>shankha</i>)	✗ - perceptions centrally based on observations
Medbøe et al. [38]	Scotland	Edinburgh Jazz & Blues Festival	comments only	live jazz and blues music	✗
Radice [39]	USA	Mardi Gras Carnival	digital ethnographic observation	brass band music, jazz band music	✓ - but perceptions generally tangential to research focus

sound speakers, and popular songs were incorporated into house float designs—on occasion even commemorating local music venues which had closed during the pandemic [39, 40]. Interestingly, while it was reported that the pre-pandemic festival atmosphere was sorely missed by one researcher: “the canned music had the effect of enhanced melancholy: the tinny sound seemed almost like mockery, foregrounding absence of the richness of sound and experience usually at play” [40], some people made comment that they “celebrated in the most wonderful way (...) We did not feel lacking for anything”, recognising a spatial shift of Carnival being more community-focused in 2021 [39].

Religious Heritage and Devotional Festivals

In contrast to the above example of alternative live offerings in the USA, one study in Canada discussed the total hiatus of internal devotional gatherings and associated sounds and soundscapes. Focusing on the South Asian Hindu diasporas of Edmonton (Alberta, Canada), communities of Indian, Nepalese, Bhutanese, Sri Lankan and Bangladeshi origin could not present community or temple devotional performances, nor specific Hindu festival occasions such as *Navaratri*, *Dussehra* or *Deepawali*, whereby the typical atmosphere is created heavily by generated musical performance and distinctive *bhajan* singing [41].

As described in festival events of October 2022 (after social distancing restrictions were lifted), live devotional performance music returned in various formats: incorporating both traditional instruments of *dholak* alongside pop instruments, singers performing *bhajans* at the end of musical play scenes resulting in immersive soundscapes comprising joyous audience applause and singing participation of iconic phrases, or through *bhajans* and *kirtans* being sung between devotional stories and sermons in conjunction with other devotional sounds such as temple bells or bells and *shankha* (conch shell) [41]. Inevitably, such iconic festival sounds and soundscapes were on pause throughout the pandemic-induced hiatus, and it was noted that upon return to community devotional performances, people were “excited to reunite with their fellow members through in-person devotional gatherings” [41]. Although the degree of excitement of returning to devotional activities compared with the degree of re-experiencing devotional atmospheres (including the associated soundscape) was not a focus of the research, it is clear that the manifestation of the inaugural ‘1st Hindu Heritage Festival Celebration’ in Edmonton – six months after the limits of social capacity limits (August 2022) – created a vibrant festival due to the overwhelmingly incessant number of visitors and the “deep resonance of the crowd noise and musical sounds”. Clearly, the crowds responded in a way

which reflected a deep craving for the return for live cultural and musical performance post-pandemic restrictions.

Similar digital pivots during the 2020 lockdown periods were observed in Catholic religious festival practices in the Philippines, with both church services and religious cultural celebrations being instead held online. One study discussed pre-COVID religious festival soundscapes, such as *Sinulog festival* with the iconic sound of over 1.5 million processing pilgrims shouting “*Viva Pit Señor!*” (Hail Lord, listen to our prayers), and persistent verse chanting practice during Holy week *Pasyon*, being altered due to restriction orders in 2020, with these aural elements either being totally silenced or adjusted through virtual offerings using social media platforms [42]. However, while this research recognised the importance of such social gatherings and rituals as communal manifestations of the faith towards the divine, community perceptions of the actual loss of the aural experience were not addressed in this paper.

Another study discussed similar digital pivots of many religious cultural festivals over the island of Luzon (Philippines). As a result of 2020 pandemic social restrictions, the chanted phrase “*Hala Bira*” of the *Ati-atihan* Festival and of iterations in other Catholic festivals were silenced as a live soundscape, Holy week *pasyon* chanting (*pabasa*) was again only offered through digital means (online) and the iconic sounds of singing, chanting and praying of participants following dramatic tableaux in ritual festive processions were replaced by motorcade processions [43]. New alternative live soundscapes emerged, of individuals singing songs and playing guitars from the safety of their own homes. Again, community perceptions of any loss of aural experience were not addressed in this paper, but the author commented that live experience is significant for the Catholic Church through an activation of the “doctrine of communion or the sharing of intimacy on a spiritual level”, and that online shifts during the pandemic were essential, yet simply temporary alternatives to the live experience [43].

Heritage Music Festivals

Digital pivot replacements were also offered for the heritage festival for Temple Bar’s TradFest in Dublin (Ireland), again as a result of public restrictions imposed due to the pandemic. The unique soundscape of this festival including wailing bagpipes, drums, Irish music, laughter, clinking of glasses and the diverse languages of visitors were again silenced in a live setting for the 2021 iteration of the festival, with online replacements comprising pre-recorded concerts and TV specials broadcast during the festival period [44]. The authors argue that the aural musical soundscape of this event was the essential component in creating the festival’s ambience and atmosphere, being at the very core of what

forms the heritage component, and the online renditions not only offered an alternative soundscape for the festival, but again generated a sense of nostalgia within the community for a return to the live renditions after the pandemic periods. Indeed, upon the return of a live iteration of the festival in 2022, visitors were thrilled for the chance to share the spaces with numerous other visitors and the return of the associated ambient festival soundscapes of live music [44].

Live music was also perceived as the central soundscape feature of the *La Notte della Taranta* cultural heritage festival (Italy), with traditional musical concerts spanning multiple weeks in regular years [45]. As a result of pandemic-induced restrictions, concerts in 2020 were partially cancelled and broadcast digitally before a reduced festival return in 2021. In this study, despite a large proportion of survey participants agreeing with the organiser's decision for altered festival renditions, there was a strong sense of social and cultural loss of the 2020 festival [45], suggesting that sustaining performances of heritage music is crucial from a community perspective.

Finally, a discussion piece on the digital pivot of both live concerts and festivals to an online experience highlighted the altered effects that the pandemic had on the musical soundscape, and a web survey asked questions about general perspectives and engagement of livestream music pre- and during the pandemic, willingness to pay for online experiences and contrasting perspectives of live music. While the research found a large increase in participants actually engaged in livestream concerts and (heritage) festivals during the pandemic compared to pre-pandemic times, lower "willingness to pay" results suggest that online alternatives cannot equal the live experience for the consumer, with the authors suggesting that the increased connectivity with livestreaming events may be simply due to the novelty experience factor during the pandemic [46]. While not specifically presenting data on community perceptions on the change of aural experience to digital platforms, they recognise that a return to live experience of music post-pandemic presents an opportunity to engage social connectivity of communities through concerts and festivals [46].

Other Heritage Festivals

The traditional soundscape of culturally significant festive German Christmas markets, comprising "live music provided by choirs and brass bands mixing with the sound of distant merry-go-rounds ... interspersed with vendor cooking sounds and the constant chatter and laughter of the countless visitors themselves", was temporarily silenced as a result of the pandemic shutdown of the Christmas period 2020. As a result, the live music and chatter/laughter sounds were hushed, first through the provision of a drive-in style festive market and then through a total digital shift to an aug-

mented Christmas market online [47]. Despite the loss of the typical soundscape experience and the subsequent replacement of "tinny-sounding Christmas soundtrack(s)" through an online format, this paper did not specifically target community perceptions of this loss of sensory experience, with the result here being unknown [47].

This importance of the multisensory (including aural) experience of cultural heritage festivals is echoed in the research of Das et al. [48], whereby certain festival ambiance characteristics were connected to the nostalgia of festivals not operating due to COVID restrictions. Recognising that intangible aesthetics such as the sights, smells and sounds are strongly connected to nostalgic feelings, including aural elements of the soundscape such as music and the bursting of firecrackers, the research found that the experience and environment of cultural festivals in India were correlated to a sense of nostalgia for participants during shutdown periods associated with the pandemic, and that these sensory experiences were highly missed when not present [48].

Finally, it is recognised that some papers that discussed heritage festival soundscapes during COVID-19 were not identified through the search terms of this literature review. We note that this is because those papers did not recognise religious festivals (e.g. Ganesh Chaturthi) as a form of heritage process for the communities [49]. We wish to remark here that "heritage" terms of festival categorisation be considered of key importance if soundscape research is to expand further into the positive social dimensions rather than being limited to noise levels, or in the case of this paper, being exclusively considered noise pollution.

Conclusion and Implications

In recognising and understanding both the importance of sensory components in creating a festival atmosphere and the significance of heritage festivals to the community as a cultural signature, the recent COVID-19 pandemic (along with the associated social restrictions) gives us a chance to pause and consider festival sensory components as an experienced intangible form of heritage and to question how loss or alteration of these sensory heritage experiences may concern the communities affected. The effects of COVID-19 were one of cessation, of locational displacement and dissipation or of a replacement in the virtual space.

When considering the fourteen papers that covered sounds or soundscapes of cultural heritage festivals, we found a distinct lack of formal research investigating how communities reacted to or perceived these changed soundscapes. The perceptions of sound loss were generally based on the researcher's own perspectives, either through informal conversations with community members or through content analysis. In such cases, the research found not only personal

observations of the changed perception of soundscapes *during* the pandemic [40], but also a “joyous return” to festivals with their interconnected sounds and soundscapes *after* the relaxing of restrictions [41, 44]. Certain community perspectives were investigated more deeply however. Attanasi et al. [45] used a field survey to investigate how the cancellation of *La Notte della Taranta* music festival was perceived as a social and cultural loss, and Das et al. [48] asked participants *ex situ* which Indian festival characteristics engendered a sense of personal nostalgia, i.e. what aspects of the festival experience were most missed. While these research processes covered aural components and soundscapes, we identified no research which specifically targeted community perceptions of the loss or alteration of heritage festival *soundscapes* as a central research topic. In recognising that cultural heritage festivals are significant and fundamental for human societal functioning, and associated soundscapes are a key aural reflection of these, more research into the social attributes of (festival) soundscapes is warranted and is therefore identified as a potential significant avenue of future research.

The New Orleans studies which discussed the pandemic soundscapes in terms of locational displacement and dissipation highlight an aspect that warrants further enquiry, namely the importance of space and setting. The dynamics of festivals, whether stationary or linear (in the form of parades), are embedded in the urban landscape and defined by plazas and street canyons, which confine and amplify a soundscape. Festivals occur in communal, rather than private spaces where participants, both actors and audience, create deeply layered palimpsests of sight, movement and sound—the latter in both an active, performing and a reactive, experiential (e.g. laughter) sense. This multi-sensory “atmosphere” cannot be reduced to an essentially disembodied, life-less representation via decorated buildings with recorded music piped through stationary speakers.

It is of course noted that the COVID-19 pandemic provided a challenging barrier to investigate these parameters as some papers made special comment that social restrictions forced research approaches to be altered. Given the generally positive response of communities to heritage festivals with interrelated soundscapes post-pandemic, however, it is important to verify to what degree soundscapes are central to the overall festival experience. Similar to the Keukenhof flower park (Netherlands), whereby “admiring the flowers live is something no video can compete with as you will miss the smells and the atmosphere in the park” [50], the multispectral sound sources at heritage festivals create more than just an aural experience. While technological solutions can offer us alternative means of digital festival experience, “it cannot (as yet) replace the physical or embodied elements of attendance” [25], which underlines the importance of the

collective live experience incorporating physical audiences, especially at heritage music festivals [51].

It is interesting to note that the pandemic-influenced Mardi Gras of 2021 reverted to a highly visual-based activity. Likewise, the German Christmas markets of 2020 were reduced to a visual and commercial “event” [47]. While such alternative festivals are formed and shaped under duress [52], the pandemic festivals highlight that the festival experience is greater than the sum of their individual sensory and multisensory experiences. Despite a community figure of New Orleans remarking that they were not “feeling lacking for anything” [39], would this still be the case in festivals where the alternative experience (or digitally focused) were to become the norm? Or is this a case of short-term positivity and temporary hiatus on negative perceptions to get through the pandemic as emotionally unscarred as possible?

Additionally, there arise questions pertaining to heritage festival “spaces”; how does the transfer of sensory engagement of festival sounds, music and smell from one typical festival communal space to individual private places (or even online) affect perceptions of sensory heritage? Questions of sensory perceptions, sensory embodiment and heritage places need to be teased out in future research when discussing the aural dimensions of sounds and soundscapes of heritage festivals.

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References

Papers of particular interest, published recently, have been highlighted as:

- Of importance
- Of major importance

1. Schafer RM. The soundscape: our sonic environment and the tuning of the world. Vermont: Destiny Books; 1994.
2. ISO. Acoustics—Soundscape. Part 1 definition and conceptual framework. Geneva: International Standards Organisation; 2014.
3. Dumyahn S, Pijanowski B. Beyond noise mitigation: managing soundscapes as common-pool resources. *Landscape Ecol*. 2011;26(9):1311–26.
4. Bruce NS, Davies WJ. The effects of expectation on the perception of soundscapes. *Appl Acoust*. 2014;85:1–11. <https://doi.org/10.1016/j.apacoust.2014.03.016>.
5. Lam K-C, Brown A, Marafa L, Chau K-C. Human preference for countryside soundscapes. *Acta Acust*. 2010;96(3):463–71.
6. Kitapci K, Galbrun L. Subjective speech intelligibility and soundscape perception of English, Polish, Arabic and Mandarin. INTER-NOISE and NOISE-CON Congress and Conference Proceedings: Institute of Noise Control Engineering; 2015. pp. 1667–75.
7. Farina A, Lattanzi E, Malavasi R, Pieretti N, Piccioli L. Avian soundscapes and cognitive landscapes: theory, application and ecological perspectives. *Landscape Ecol*. 2011;26(9):1257–67.
8. Huang L, Kang J. The sound environment and soundscape preservation in historic city centres—the case study of Lhasa. *Environ Plann B Plann Des*. 2015;42(4):652–74.
9. Alonso A, Suárez R, Sendra JJ. The acoustics of the choir in Spanish cathedrals. *Acoustics: Multidisciplinary Digital Publishing Institute*; 2019. p. 35–46.
10. Zheng J. Soundscape as an outstanding universal value: an introduction with case studies of chinese world cultural heritage sites. *Change Over Time*. 2019;9(2):232–55.
11. Parker M, Spennemann DHR. Classifying sound: a tool to enrich intangible heritage management. *Acoustics Australia*; 2021. p. 1–17.
12. Giuffrè L, Sharp L. Exploring the acoustic environment of the montreal metro by doing the ‘dou-dou-dou.’ *Soc Altern*. 2014;33(1):44–51.
13. Zhao S. Aural landscape as an intangible heritage in Chinese classical gardens. *Studies in the History of Gardens & Designed Landscapes*. 2017;37(3):242–9. <https://doi.org/10.1080/14601176.2016.1268770>.
14. Parker M, Spennemann DHR. For whom the bell tolls: practitioner’s views on bell ringing practice in contemporary society in New South Wales (Australia). *Religions*. 2020;11(425):1–24. <https://doi.org/10.3390/rel11080425>.
15. Jordan P, Fiebig A. COVID-19 impacts on historic soundscape perception and site usage. *Acoustics*. 2021;3(3):594–610. <https://doi.org/10.3390/acoustics3030038>.
16. Engel MS, Fiebig A. Detection and classification of soundmarks and special features in urban areas. 24th International Congress on Acoustics. Gyeongju, Korea 2022.
17. Ancient Monuments and Archaeological Areas Act. Chapter 46. United Kingdom. 1979.
18. US Historic Preservation Act s. 1. 1966.
19. Venice Charter. International Charter for the conservation and restoration of monuments and sites, Venice, 1964.
20. ICOMOS Australia. The Burra Charter: the Australia ICOMOS charter for places of cultural significance 2013. Burwood, Vic: Australia ICOMOS Inc. International Council of Monuments and Sites; 2013.
21. Smith L, Waterton E. Constrained by commonsense: the authorized heritage discourse in contemporary debates. *The Oxford Handbook of Public Archaeology*; 2012.
22. Parker M, Spennemann DHR, Bond J. Sensory perception in cultural heritage studies—a systematic review. *Senses & Society*. 2023. <https://doi.org/10.1080/17458927.2023.2284532>.
23. Hell N, McPherson G. Public value outcomes of festivals: well-being and economic perspectives. *Festivals and the City*. Edited by A. Smith, G. Osborn and B. Quinn. London: University of Westminster Press. 2022.
24. Hartzenberg N, Rogerson JM. Festive cities: the evolution and adaptation of the Deutsche Internationale Schule Johannesburg Schulbasar. *African Journal of Hospitality Hartzzenberg, N & Rogerson, JM African Journal of Hospitality, Tourism and Leisure*. 2022;114:814–2223.
25. Duffy M, Mair J. Future trajectories of festival research. *Tour Stud*. 2021;21(1):9–23. <https://doi.org/10.1177/1468797621992933>.
26. Salvador E, Pedersen JS. Managing cultural festivals: tradition and innovation in Europe. Routledge; 2022.
27. Swartjes B, Vandenberg F. Festival atmospheres: social, spatial, and material explorations of physically distanced festivals. *Remaking Culture and Music Spaces*. Routledge; 2022. p. 21–33.
28. Van Winkle CM, Kullman S. Remaking the festival business model during a pandemic. *Event Management*. 2022;26(6):1335–50.
29. Quinn B, Smith A, Osborn G. Festival city futures: reflections and conclusions. University of Westminster; 2022.
30. Parker M, Spennemann DHR. Anthropause on audio: the effects of COVID-19 pandemic on church bell ringing in New South Wales (Australia). *J Acoust Soc Am*. 2020;148(5):1–5. <https://doi.org/10.1121/10.0002451>.
31. Steele D, Guastavino C. Quieted city sounds during the COVID-19 pandemic in Montreal. *Int J Environ Res Public Health*. 2021;18(11):5877.
32. Zambon G, Confalonieri C, Angelini F, Benocci R. Effects of COVID-19 outbreak on the sound environment of the city of Milan. *Italy Noise Mapping*. 2021;8(1):116–28.
- 33.●● Hasegawa Y, Lau S-K. A qualitative and quantitative synthesis of the impacts of COVID-19 on soundscapes: a systematic review and meta-analysis. *Sci Total Environ*. 2022;844: 157223. **This article presents a synthesis of the impacts of COVID-19 on soundscapes at the global level, including adverse consequences of pandemic soundscapes on human health and well-being.**
- 34.● Asensio C, Pavón I, de Arcas G. How the COVID-19 pandemic muted and remixed the world’s acoustics for a while. *Current Pollution Reports*. 2022;8(4):328–40. **This article analyses the effects of the COVID-19 pandemic on the global sound environment, focusing on noise levels.**
35. Alves S, Di Gabriele M, Carillo S, Masullo M, Maffei L. Exploring the soundscape and the atmosphere of the Gigli di Nola cultural festival in Italy. *Emot Space Soc*. 2021;41: 100848.
36. Hackett RI. From festive sacred to festive secular? Indigenous religious presence in two Nigerian festivals. *Numen*. 2022;69(4):341–89.
37. Annuar SNS, Dawayan CR. Kaamatan goes virtual. *Digital Transformation and Innovation in Tourism Events*. 2022.

38. Medbøe H, Raine S, Ali-Knight J, Bhachu DK. Researching the Scottish jazz and blues scenes (2019–2022). Sectoral challenges and proposals for growth and sustainability. 2023.
39. Radice M. Happy Yardi Gras! Playing with carnival in New Orleans during the Covid-19 pandemic. In: Beresin A, Bishop J, editors. *Play in a covid frame - everyday pandemic creativity in a time of isolation*. Cambridge: Open Book Publishers. 2023.
40. Rogers HL. Resounding archipelagoes: music and tourism in New Orleans and Havana. Doctoral thesis: The University of Chicago; 2022.
41. Giri S. Homeland echoes: music, sound, and devotion among the South Asian Hindu diaspora in Edmonton, Canada. *South Asian Diaspora*. 2023:1–18.
42. Galang JRF, Gopez JMW, Gozum IEA, Sarmiento PJD. Social distancing as a recontextualization of filipino values and catholic religious practices: a response to the COVID-19 pandemic. *J Relig Health*. 2021;60(5):3245–64.
43. Tiatco A. Philippine Catholic festivals during the COVID-19 pandemic: performing live in the ‘new’ normal. *Contemp Theatr Rev*. 2022;32(3–4):296–304. <https://doi.org/10.1080/10486801.2022.2118732>.
44. Dillane A, Raine S. Creating ambiance through music in Dublin’s cultural quarter. *Ambiance, Tourism and the City*. 2023:209.
45. Attanasi G, Ballatore M, Chessa M, Ciucani C, Gil-Gallen S. *La Notte della Taranta under the shadow of Covid-19*. Groupe de REcherche en Droit, Economie, Gestion (GREDEG CNRS): Université Cote D’Azur; 2022.
46. Apruzzese J, Barretta PG, Tompkins T. Impact and hope for the live music industry. 2023.
47. Parker M, Spennemann DHR. Stille Nacht: COVID and the ghost of Christmas 2020. *Heritage*. 2021;4(4):3081–97. <https://doi.org/10.3390/heritage4040172>.
48. Das P, Gunasekar S, Dubey RK, Mandal S. Festive nostalgia in COVID-19: an empirical conceptualization. *Leisure/Loisir*. 2023:1–39.
49. Kalawapudi K, Singh T, Vijay R, Goyal N, Kumar R. Effects of COVID-19 pandemic on festival celebrations and noise pollution levels. *Noise Mapping*. 2021;8(1):89–93.
50. Clarke RC. Long-term forecasting of tourism festivals post COVID-19. *Managing festivals for destination marketing and branding*. IGI Global; 2023. p. 244–62.
51. Perez-Monteagudo A, Curras-Perez R. Live and online music festivals in the COVID-19 era: analysis of motivational differences and value perceptions. *Revista Brasileira de Gestão de Negócios*. 2022;24:420–38.
52. Petrychyn J. Cinophilia, publics, cinegraphilia: surveying the short-term effects of Covid-19 on community-based festivals in Toronto. *Rethinking Film Festivals in the Pandemic Era and After*. Springer International Publishing Cham; 2023. p. 193–210.

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