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The Sound of Paris: An Environmental History of Noise in the City of Light

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ABSTRACT

This article explores the sonic environment of the city of Paris over the *longue durée* and considers how certain sounds began to be perceived as 'noise.' It assesses how the city's past habitus conditioned its residents' way of listening and the evolution in the meanings attached to sound. It argues that perceptions of noise evolved from it being considered a 'nuisance,' to being a threat to public health, and finally to being a source of environmental pollution in the twentieth century. It explores why authorities were slow to respond to the problem of noise and how it ultimately came to be regulated. Finally, it shows how a sensory history of a city can successfully be employed to elucidate its environmental history, thus contributing to a broader understanding of the emergence of 'noise' as a modern urban problem and as a perceived environmental threat.

KEYWORDS

Soundscape, noise pollution, urban environmental history, noise abatement, environmental regulation

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> Is it to lie awake that one goes to bed in Paris?
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> —Nicolas Boileau[1]

In 1845, Colonel Jean Huber-Saladin, a Swiss army officer, decided to move permanently to Paris in the wake of political unrest in Switzerland. He bought a large mansion (*hôtel*) with a spacious garden in one of the most sought-after areas in Paris. From the start, however, he intended to demolish it to build a

1. Nicolas Boileau-Despreaux, 'Satire VI: les embarras de Paris', in *Oeuvres poétiques* (Paris: Belin, 1933), p. 45. Nicolas Boileau (1636–1711) was a French poet and critic who lived his whole life in Paris.

Environment and History
Submitted 26 August 2024; accepted 22 January 2025
 doi: 10.3828/whpeh.63861480327357

new residence to his specifications that would be divided into five spacious apartments, four of which he would rent out as an investment.[2] He then hired an architect to undertake the project. However, once completed, all did not go as planned. He came to suffer from the unexpected impact of the deafening sounds produced by a foundry located next door, which would 'awaken neighbours in winter before daybreak, disturb their peace, torment the sick' and 'disturb the surrounding buildings without the police being able to bring the least mitigation or remedy'.[3]

Unable to arrive at any amicable resolution to the problem, Huber-Saladin and the foundry's owner ended up in a legal wrangle. An anonymous pamphlet that was written about the ensuing 'strange trial' began by noting 'the inadequacy of law, ordinances and police regulations against nuisances that can arise from noisy industries, an inadequacy now acknowledged by the courts of the department of the Seine', which could not 'soon fail to come to the attention of the administration and legislature'.[4] The pamphlet's author noted that smoke from the chimneys of workshops or industrial enterprises would never be permitted by the police, but the foundry's 'hammers could awaken neighbours in winter before daybreak' with impunity.[5] For the author of the pamphlet, 'Paris … is the exception among the capitals of Europe; there one tolerates noise that one tolerates nowhere else' and no effective regulations existed 'to assure peace' and tranquillity in the domestic sphere.[6] While the unhappy saga of Huber-Saladin reflected the pervasive problem of urban 'noise' in nineteenth-century Paris, it raises several broader questions about how the city's 'soundscape' evolved, how and why some sounds came to be perceived as 'noise' as well as a form of environmental pollution over time, and why French law and regulations persistently failed to address the issue adequately.

While there is significant scholarship devoted to 'soundscape studies' whose reach can be seen in architecture, the acoustic arts, geography, sociology, anthropology and urban planning, among other fields, work on sound for some time remained a relatively neglected area of study among historians. However, there is now a number of studies in the fields of history of science, sensory history and environmental history that have begun to explore the

2. Jean Huber-Saladin (1798–1881) was an army officer, philanthropist and author. Charles Fournet, *Huber-Saladin, 1798–1881: Le mondain, le diplomat, l'écrivain* (Paris: Champion, 1932).

3. *Un hôtel à Paris: Essai d'améliorations dans les constructions parisiennes, exploitation fondée sur le bruit d'une forge; procès étrange. Mémoire motive par le recours au tribunal d'appel* (Paris: Marc Ducloux, 1851), pp. 11–12. Charles Fournet made a brief mention of the affair. Fournet, *Huber-Saladin*, 153.

4. Ibid., 4.

5. Ibid., 11.

6. Ibid., 24–25.

subject.[7] Even so, as Peter Coates argued over a decade ago, environmental historians were often 'absent from the emerging cadre of sound historians that is challenging the visual bias of scholarly and popular culture'.[8] Coates reviewed many of the contributions to aural history as they touch on environmental history, but mainly in the United States, where a historiography on the subject is most developed.[9]

The meaning attached to the concept of 'soundscape' has by no means been homogeneous.[10] Some define it broadly as the collection of sounds emanating from a particular landscape or 'whatever can be captured by the ear or by recording devices at a particular time and place'.[11] Some landscape ecologists have classified sounds themselves in an acoustic environment as biophonic, geophonic or anthrophonic, in accordance with how they are generated: biologically, geologically or by humans.[12] Historians who have turned their attention to these acoustic environments have done so with an awareness that the existence of a soundscape, like a 'smellscape', is predicated on human perception. It is simultaneously both a 'physical environment and a way of perceiving that environment'.[13] For this reason both past soundscapes and smellscapes present an enormous challenge for the historian because they are ephemeral. This is particularly true of periods in which there was no technology available to document sound directly, which obliges the historian of those periods to recover its traces and how it was perceived from a panoply of sources that document human perceptions, ranging from those in the form of written documentation,

7. Tristan Loubes, 'Le bruit de la circulation et l'invention de la pollution sonore dans les villes occidentales dans les années 1930, entre tournant matériel et évolution des sensibilités', *Histoire Politique* **43** (2021): 449.

8. Peter A. Coates, 'The strange stillness of the past', *Environmental History* **10** (2005): 636.

9. Coates, 'Strange stillness'. Coates specifically discusses the work of the American historian Mark Smith. Mark M. Smith, 'Listening to the heard worlds of Antebellum America', *Journal of the Historical Society* **1** (1) (2000): 65–99; Mark M. Smith, *Listening to Nineteenth-Century America* (Chapel Hill: University of North Carolina Press, 2001); Mark M. Smith, 'Making sense of social history', *Journal of Social History* **37** (2003): 165–86; Mark M. Smith (ed.), *Hearing History: A Reader* (Athens: University of Georgia Press, 2004); Richard Cullen Rath, *How Early America Sounded* (Ithaca, NY: Cornell University Press, 2003). See also Michael Bull and Les Back (eds), *The Auditory Culture Reader* (Oxford: Berg, 2003).

10. Ari Y. Kelman, 'Rethinking the soundscape: A critical genealogy of a key term in sound studies', *Senses and Society* **5** (2) (2010): 226–28

11. Alexandre Vincent, 'A history of silences', *Annales* **72** (3) (2017): 385–409.

12. Bryan C. Pijanowski et al., 'Soundscape ecology: The science of sound in a landscape', *Bioscience* **61** (3) (2011): 203–16.

13. Emily Thompson, *The Soundscapes of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933* (Cambridge, MA: MIT Press, 2004), p. 1. See also Bryan Pijanowski, *Principles of Soundscape Ecology: Discovering Our Sonic World* (Chicago: University of Chicago Press, 2024). For an overview of recent historical literature on urban soundscapes, see James G. Mansell, 'New histories of the urban soundscape', *Journal of Urban History* **44** (2) (2018): 241–48.

legal records and municipal or governmental regulations.[14] This may be one reason why 'the majority of "sound studies"' tend to concentrate 'on the most recent periods of human history'.[15]

Soundscapes were a focus of historical research in France even before the neologism was coined by the musicologist Raymond Murray Schafer in the late 1960s. Lucien Febvre and Robert Mandrou long ago called for a new 'history of sensibilities', whose object of study eventually included soundscapes.[16] In a section dedicated to smells, tastes and sounds in his study of unbelief in the sixteenth century, Febvre argued that human beings in the sixteenth century, unlike those in the present, did not privilege visual perception over the auditory or olfactory senses, even in cities. They were, in his view, not beings of the 'greenhouse', but rather those of the 'open air', 'seeing, touching, smelling, hearing, palpating, inhaling nature through all their senses'.[17] For this reason, the myriad of senses in the past, for him, could not be ignored. Schafer's book *The New Soundscape* found a receptive audience when it was translated into French, and the concept was immediately linked to both the study of the environment and history, as its French subtitle suggests.[18] Following in the footsteps of Febvre, Alain Corbin signalled the importance of studying the senses in historical context. His path-breaking books on village bells and odour heralded the aural and olfactory dimension of historical inquiry even more fully.[19] More recently, historians, who include Jean-Pierre Gutton, Alexandre Ariel, Olivier Balaÿ, Jean-Philippe Barde, Ian Biddle and Kirsten Gibson, have also explored the phenomenon of sound through a historical lens in both a French and wider European context.[20] Finally, Aimée Boutin, Arlette Farge, David Garrioch and Nicholas Hammond have specifically focused on the

14. On the transience of odour, see Alain Corbin, *The Foul and the Fragrant: Odor and the French Social Imagination*, trans. Miriam Kochan (Cambridge, MA: Harvard University Press, 1986), pp. 82–83. For urban 'smellscapes', see Victoria Henshaw, *Urban Smellscapes: Understanding and Designing City Smell Environments* (New York: Routledge, 2014).
15. Vincent, 'History of silences', 390.
16. Lucien Febvre, 'La sensibilité et l'histoire', *Annales* **3** (1/2) (1941): 5-20; Robert Mandrou, 'Pour une histoire des sensibilités', *Annales* **14** (3) (1959): 581–88.
17. Lucien Febvre, *Le problème de l'incroyance au XVIe siècle: La religion de Rabelais* (Paris: Albin Michel, 2003), p. 394.
18. Raymond Murray Schaffer, *Le paysage sonore: Toute l'histoire de notre environnement sonore à travers les* âges, trans. Sylvette Gleize (Paris: J.-C. Lattès, 1979).
19. Corbin, *Foul and the Fragrant*; Corbin, *Village Bells: Sound and Meaning in the Nineteenth-Century French Countryside*, trans. Martin Thom (New York: Columbia University Press, 1999).
20. Jean-Pierre Gutton, *Bruits et sons dans notre histoire: Essai sur la reconstitution du paysage sonore* (Paris: Presses Universitaires de France, 2000); Alexandre Ariel and Jean-Philippe Barde, *Le temps du bruit* (Paris: Flammarion, 1992); Olivier Balaÿ, *L'espace sonore de la ville au XIXe siècle* (Bernin: A la Croisée, 2002); David Garrioch, 'The sounds of the city: The soundscape of early modern European cities', *Urban History* **31** (3) (2003): 5–25; Ian Biddle and Kirsten Gibson (eds.), *Cultural Histories of Noise, Sound and Listening in Europe* (Abingdon: Routledge, 2017).

urban soundscape of Paris. They have explored how the city's sonic space was perceived and how those perceptions bore witness to the fabric of the urban community and to broader changes that were taking place in urban society.[21] These scholars have explored the acoustic environment of Paris in terms of particular kinds of sound and at very specific moments in time, most notably in the eighteenth and nineteenth centuries. In his path-breaking work on sound in rural France, Alain Corbin, for example, targets church bells, while the central concern of Aimée Boutin and Hammond are the *cris de Paris* and the sounds of hawkers selling their wares before the advent of industrial noise.

My study of noise in the city of Paris from the eighteenth century to the present, in contrast to these earlier studies, provides a new perspective on the city's sonic environment, which departs significantly from past approaches to the subject in several ways. First, my study is less a history of the symbolic and cultural meanings that were attached to certain kinds of sound (and the extent to which those meanings reflected the city's social, political and cultural fabric) than a study of how sound came to be perceived as 'noise' and the evolution of the meanings attached to noise. Second, unlike previous studies, it explores the history of noise abatement over the *longue durée*, which allows the historian to observe how perceptions of sound and noise changed over time, because changing attitudes to sound are as significant as the nature of sounds themselves. If in 2016 the municipal government of Paris defined 'noise' in terms of the effect sound has on the human body, this does not necessarily mean this was how it was defined in 1740 or 1830, suggesting that it is important to understand the historicity of noise in a sonic environment.[22] For this reason, the historian must focus on how the nature of 'citizens' past habitus conditioned their way of listening and perceiving noise'.[23] Third, in exploring the evolution of the soundscape of Paris, I show how the city's sonic environment was linked to its olfactory and atmospheric environment, which became the focus of environmental regulation and control as the city itself was transformed by new modes of production and new technologies.[24] It thus demonstrates how a sensory history of the city can successfully be employed to elucidate its environmental history, thus contributing to a broader understand-

21. Arlette Farge, 'The sounds of enlightenment Paris', *Paragraph* **41** (2018): 52–61; Aimée Boutin, *City of Noise: Sound in Nineteenth-Century Paris* (Champaign: University of Illinois Press, 2015); Aimée Boutin, 'La ville sonore: Quelles sources pour une histoire du bruit urbain?' *Epistémocritique* **19** (2021): art. 4; Nicholas Hammond, *The Powers of Sound in Early Modern Paris* (University Park: Pennsylvania State University Press, 2019).

22. This definition may be found in the municipal government's 2016 'Plan for the Prevention of Noise in the Environment'. Macs Smith, *Paris and the Parasite*: *Noise, Health, and Politics in the Media City* (Cambridge, MA: MIT Press, 2021), pp. 1–2.

23. Karin Bijsterveld et al., 'Shifting sounds: Textualization and dramatization in urban soundscapes', in Karin Bijsterveld (ed.), *Soundscapes of the Urban Past: Staged Sound as a Mediated Cultural Heritage* (Bielefeld: Transcript, 2013), p. 16.

24. Rebecca Scales, *Radio and the Politics of Sound in Interwar France, 1921–1939* (Cambridge: Cambridge University Press, 2016).

ing of the emergence of 'noise' as a modern urban problem and as a perceived environmental threat in Paris. Finally, it puts the environmental history of noise in Paris and its regulation in the context of other cities in Europe and North America.

The inhabitants of Paris and other European cities were exposed, as Arlette Farge, David Garrioch and Aimée Boutin have argued, to all kinds of sounds in the eighteenth and nineteenth centuries. Many observers remarked that one heard the city of Paris before entering and seeing it, and that its noise could be frightening.[25] The noise was made by the constant clattering of horse-drawn carriages and carts, the clamour of workshops, anvils, saws, the singing of songs and the famous *cris de Paris* of the ambulatory street vendors, as well as those involved in small trades, and the stampede of animal herds entering the city.[26] The writer Louis Sebastian Mercier highlighted the street vendors and how anyone walking in the city was assailed by noise of the 'tireless hammer'.[27] Horses, dogs, cats and the ubiquitous pigeon were also legion in Paris, contributing to the din. Among the loudest sounds in the urban landscape, as in the countryside, came from bells. Some of these sounds had a purpose. In the words of Garrioch, 'the auditory environment constituted a semiotic system', an information network in a world without internet, newspapers, radio or television.[28] They were heard and appreciated 'according to a system of affects' that are largely forgotten today, as are many of the city's earlier sounds.[29]

Sensitivity to sound that was perceived as 'noise' was evident in the eighteenth and nineteenth centuries, as can be gleaned from memoirs and commentaries from the period.[30] The renowned French painter Louise-Élisabeth Vigée Le Brun was very sensitive to noise throughout her life, which spanned the eighteenth and nineteenth centuries, and she particularly objected to urban noise. In her memoirs she wrote, 'I know round noises, sharp noises … I could write a treatise on noises, to which I have attached so much importance all my

25. Farge, 'Sounds of enlightenment Paris', 52.
26. Alfred Franklin, *Les rues et les cris de Paris au XIII siècle* (Paris: Leon Willem, 1874).
27. Quoted in Mark Darlow, '"Cris nouveaux": The soundscape of Paris in Mercier's *Tableau de Paris* and *Le Nouveau Paris*', *Early Modern French Studies* **41** (1) (2019): 91.
28. Garrioch, 'Sounds of the city', 6.
29. Alain Corbin, *Les cloches de la terre: Paysage sonore et culture sensible dans les campagnes au XIXe siècle* (Paris: Albin Michel, 2023), p. 15.
30. In contrast, Geneviève Massard-Guilbaud argues that concerns about noise as a nuisance emerged long after concerns about odour and smoke in the late nineteenth century. Massard-Guilbaud, 'La régulation des nuisances industrielles urbaines (1800–1940)', *Vingtième Siècle* **64** (1999): 53–65. Gutton argues that complaints about noise came even later, after the First World War. Gutton, *Bruits et sons*, 145. The urban planner Justinien Tribillon suggests, however, that 'urban cacophony, and policies regulating "unpleasant" noises in the city were not new', but that calls for new regulations came with the evolution of the urban soundscape. Justinien Tribillon, 'Ways of seeing: Landscape-infrastructure as critical design framework to analyse the production of Paris's Boulevard Périphérique', *Landscape Research* **48** (2023): 245.

life'.[31] Peter Bailey has suggested that the differentiation of noise from sound coincided with the beginnings of modern mass society in Europe. It was linked to bourgeois fears of the 'dangerous classes' and the noise that was associated with them.[32] Gutton appears to concur, in suggesting that the bourgeoisie might even have objected to noise not because it was a 'real annoyance' but rather to differentiate themselves from the popular classes.[33] In a broad sense, noise, in the words of Kirstin Bijsterveld, was 'first and foremost conceptualized as the disturbance of social hierarchy'.[34] The social stigmatisation associated with certain kinds of noise resonates over a century later in the way in which sounds of the city's postcolonial residents in the racialised neighbourhoods of Paris have been perceived.[35]

Noise during hours of sleep was particularly abhorrent to Vigée Le Brun and later in the nineteenth century many others who lived in Paris commented on it, including the writer Marcel Proust, who suffered from misophonia.[36] When he moved to a third-floor apartment after his mother's death, he complained of the noise.[37] Following the example of his friend Anna de Noailles, he ended up lining his bedroom with cork in order to insulate himself from all unwanted sound.

The predominant environmental concerns in Paris in the eighteenth and nineteenth centuries, however, were not related to noise, but rather to noxious smells and odours. Smell perception permits people 'to make sense of odours and gain insights into the physical and socially constructed environment by attaching meaning through association'.[38] Odour perception has two dimen-

31. Louise-Elisabeth Vigée Le Brun, *Souvenirs* (Paris: C. Hermann, 1984), p.186. She contrasts these sounds with those found in nature, which had always been 'agreeable' to her, such as the 'waves of the sea', which are 'soft' and could induce 'sweet reverie'. Ibid., 186.
32. Peter Bailey, 'Breaking the sound barrier: A historian listens to noise', *Body and Society* **2** (1996): 49–66.
33. Gutton, *Bruits et sons*, 143.
34. Kirstin Bijsterveld, 'The diabolical symphony of the mechanical age: Technology and symbolism of sound in European and North American noise abatement campaigns, 1900–1940', *Social Studies of Science* **31** (2001): 37–70, at p.44.
35. Naomi Waltham-Smith, *Mapping (Post)Colonial Paris by Ear* (Cambridge: Cambridge University Press, 2023). For an analysis of racial aural representations in the United States, see Jennifer Stoever, *The Sonic Color Line: Race and the Cultural Politics of Listening* (New York: New York University Press, 2016).
36. Proust's sensitivity to urban sounds is reflected in his literary masterpiece, *A la recherche du temps perdu*: 'At daybreak, my face still turned to the wall, and before I had seen above the big window drapes what tone the first streaks of light assumed, I already knew what the weather was like. The first sounds of the street had told me'. Marcel Proust, *A la recherche du temps perdu*, vol. 6: *La prisonnière* (Paris: Gallimard), p. 9.
37. Marcel Proust, *Lettres à sa voisine* (Paris: Gallimard, 2013), p. 59. See also Graham Robb, 'The martyrdom of Marcel Proust', *Spectator*, 28 October 2017; John Attridge, 'La vaste rumeur d'autrefois: Noise, memory and mediation in *A la recherche du temps perdu*', *Modernism/Modernity* **26** (2019): 617–37.
38. Henshaw, *Urban Smellscapes*, 32.

sions. It can serve as a sensor for detecting potentially harmful substances in the environment or as a hedonic sensor with the promise of enjoyment. Noxious odours in this sense were disagreeable.[39] This concern was reflected in the work of the Académie Royale des Sciences and the Société Royale de Médecine, which advised the government on measures taken to close cemeteries and manage human, animal and vegetable waste within the city.[40] The 'emanations' and vapours, which were described variously as 'nauseating, repugnant, fetid, mephitic, unbearable, intolerable, asphyxiating, unhealthy, harmful, pernicious, infected, poisonous, putrid' and unsanitary, were viewed as particularly dangerous because disease was believed to be transmitted by miasmas.[41] The 'olfactory nerve' was the 'premier barometer' measuring a harmful hazard that was offensive to the public.[42] A 1846 report revealed, for example, that of the complaints directed toward 213 'unsanitary, dangerous or incommodious' establishments, 69.4 per cent were olfactory in nature, 22.5 per cent concerned smoke, and 2.7 per cent each concerned dust and noise.[43] Indeed, odour was at the top of the list of what one might term 'environmental complaints', which was followed by smoke, noise and water contamination. These complaints were justified in terms of the threats they posed for public health and, increasingly, the right of citizens to live in peace and tranquillity.[44]

While measures to limit environmental nuisances were taken in pre-Revolutionary or *ancien régime* France, they were largely ineffective. Paris had to wait until the Napoleonic period to see the beginnings of real environmental regulation. On 7 July 1802 a sanitary council for the department of the Seine was created, and at the urging of the Ministry of the Interior the Institut de France proposed that factories and workshops that were potentially dangerous to public health should be ranked according to the threat that they posed. Four years later, on 12 January 1806, the prefect of police issued an ordinance that required industrialists planning to set up a business to make a declaration and to allow a police inspector to inspect the premises to assess its potential threat to public health.[45] These ad hoc measures were finally supplemented with more substantial regulation that established the basis on which to control pollution in the nineteenth and twentieth centuries. This included a landmark decree issued on 15 October 1810, which was not revised until 1917, but it was explicitly

39. Alain Corbin, 'L'opinion et la politique face aux nuisances industrielles dans la ville préhaussmannienne', in *Le temps, le désir et l'horreur: essais sur le dix-neuvième siècle* (Paris: Flammarion, 1991), pp. 185–98; Geneviève Massard-Guilbaud, *Histoire de la pollution industrielle: France, 1789–1914* (Paris: Éditions EHESS, 2010), pp. 69–70.
40. Bruno Fortier et al., *Les politiques de l'espace parisien à la fin de l'ancien régime* (Paris: Corda, 1975); Corbin, *Foul and the Fragrant*; Corbin, 'L'opinion et la politique'.
41. Massard-Guilbaud, *Histoire de la pollution industrielle*, 69–70.
42. Massard-Guilbaut, *Histoire de la pollution industrielle*, 69.
43. Corbin, 'L'opinion et la politique', 197.
44. Massard-Guilbaud, *Histoire des pollutions industrielles*, 84–86.
45. Corbin, 'L'opinion et la politique', 190.

directed to manufacturing establishments and workshops that spread unhealthy and disturbing odours.[46]

The decree, which consisted of only fourteen articles, was the subject of significant commentary during the course of the nineteenth century and was primarily a response to complaints about odours emanating from workshops and factories.[47] The first article stated that no workshop or factory that produced unhealthy or disturbing odours could be established without prior administrative authorisation. It called for a three-tier classification of industries and workshops according to the danger they posed to health. Those in the first class were required to operate at a distance from residential areas, while those in the second class were not subject to this requirement but nonetheless could not be established until it was determined that their operations would not disturb or cause damage to neighbouring property owners. Those in the third class would simply be subject to police oversight.[48] Despite the ground-breaking nature of the decree in establishing guidelines for the limiting of air pollution, its efficacy was limited by the fact it did not specifically mention other forms of pollution, including noise and smoke, and it did not apply retroactively to industrial enterprises that were already in existence. The decree provided a list of industries that were designated to be first, second and third class, and which could represent a danger, threat or public inconvenience as a result of the emanations or odours they produced. There were 31 in the first class, 23 in the second, and 11 in the third.[49]

Noise was downplayed by municipal authorities as a source of nuisance, even as new noises began to appear in the Parisian soundscape. They included noise from machines in industrial enterprises, such as the steam engine. The idea that noise as an environmental nuisance should be addressed and controlled by municipal authorities or by the French state itself only emerged gradually.[50] A new municipal police ordinance was introduced in October 1829, which specified the hours during which noisy work could not be under-

46. 'Décret impérial relatif aux manufactures et ateliers qui répandent une odeur insalubre et et incommode', *Bulletin des lois* **6059** (15 Oct. 1810): 397.

47. A sampling of these works that span the nineteenth century include Alphonse-Honoré Taillandier, *Traité de la législation concernant les manufactures et ateliers dangereux, insalubres et incommodes* (Paris: Mme. Huzard, 1827); St.-Ch. Clérault, *Traité des* établissements *dangereux, insalubres ou incommodes* (Paris: Cosse and N. Delamotte, 1845); Auguste Bourguignat, *Législation appliquée des* établissements *industriels, ateliers dangereux, incommodes et insalubres* (Paris: Cosse and Delamotte, 1859); Gabriel Dufour and Ernest Tambour, *Traité pratique des ateliers insalubres, dangereux ou incommodes* (Paris: Cosse, Marchal et Cie, 1868).

48. Massard-Guilbaud, *Histoire des pollutions industrielles*, 43; Charles Constant, *Code des* établissements *industriels classés dangereux, insalubres et incommodes* (Paris: Pedone-Lauriel, 1881), pp. 35–39.

49. *Bulletin des lois de l'Empire Français*, 4th series, vol. 13 (Paris: Imprimerie Impériale, 1811), pp. 401–2.

50. Gutton, *Bruits et sons*, 142.

taken: between nine in the evening and four in the morning. The ordinance was a direct response to the rising number of complaints against noisy businesses, and more particularly those operating at night.[51] Moreover, local authorities repeatedly determined that noise was not a 'nuisance' to which the 1810 decree should be applied.

A rug restoration and cleaning business rented one part of an Ursuline convent in the centre of Paris that had been nationalised during the French Revolution.[52] The convent's other tenants petitioned the prefect of police, Jean-Claude Mangin, in 1829, to put a stop to it because of the noise that it produced. Mangin duly ordered its closure. However, the ambiguities in the 1810 decree governing workshops and industrial establishments allowed the owner of the business to contest the prefect's order before the city's police court on 6 March 1830 on the grounds that the 1810 decree stipulated that only newly established businesses could be banned. The cleaner had been in business for some time, and the beating of carpets in the city was an ongoing activity as well as an established practice. His lawyer wrote a judicial brief on the matter and claimed that the business undertook its activities in a 'vast garden', suggesting that they could hardly be considered problematic.[53] Moreover, he noted that there were 150 such carpet businesses in Paris and that the livelihood of 1,500 people depended on them.[54] The lawyer effectively won the case and the business was allowed to continue to operate because it was established before the 1810 decree.[55]

As the century wore on the noise created by machinery as well as the vibrations they produced were a subject of growing complaints. In the late 1860s, for example, a prominent and well-established printer, Georges Kugelmann, moved his business and printing presses from a street in the fashionable and wealthy neighbourhood of Chaussée d'Antin to another, which was close by.[56] To one side of the new locale there was a hotel and on the other a resi-

51. Thomas Le Roux, *Le laboratoire des pollutions industrielles: Paris, 1770–1830* (Paris: Albin Michel, 2011), pp. 28, 491.

52. After many religious orders disbanded during the French Revolution and their property was nationalised, businesses as well as ordinary Parisians took up residence in them. Jean-Baptiste Fressoz, 'L'acclimatation industrielle: Aux sources d'une politique', in Thomas Le Roux (ed.), *Les Paris de l'industrie: Paris au risque de l'industrie* (Paris: Créaphis Editions, 2013), p. 14.

53. Antoine-Gilbert Claveau, *De la police de Paris, de ses abus et des réformes dont elle est susceptible* (Paris: A. Pillot, 1831), p. 474.

54. *Mémoire pour M. Carré, rentrayeur et conservateur de tapis, demeurant rue Sainte Avoye, no. 47 à Paris contre une ordonnance de M. Mangin, préfet de police, qui a prescrit la fermature de son* établissement*, avocat Antoine-Gilbert Clareau, 4 mars 1830* (Paris: Delaforest, n.d.).

55. Claveau, *De la police de Paris*, 474.

56. After moving to Paris from the German city of Kassel, Kugelmann founded his own printing business and printed two notable French newspapers, *Le Gaulois* and *Le Figaro*, in addition to books. Archives Nationales, Paris, F/18/1783.

dence owned by an engineer. The engineer, and his tenant along with the hotel owner, soon lodged a complaint against Kugelmann in the department of the Seine's civil court due to the 'intolerable noise and racket' caused by the steam engine and the presses functioning day and night.[57] The court commissioned two reports from engineers and architects to verify the nature of the alleged problem. The second declared that the printing business 'occasions an intolerable noise; for nervous and fragile people, sleep must be impossible, for others it is abruptly and frequently interrupted', thus producing a 'disagreeable sensation'.[58] Both reports recommended that Kugelmann pay damages. The second report concluded that because the property that Kugelmann rented was formerly a 'bourgeois' dwelling it was 'very ill suited' to house the kind of business that Kugelmann engaged in.[59] They concurred that it would be both difficult and costly for Kugelmann to make adjustments in a neighbourhood where there were no other noisy industries, suggesting that the printing house should be closed. Kugelmann questioned the legitimacy of the reports' findings by commissioning his own evaluation from an engineer, who came to the conclusion that Kugelmann had a right to operate his business and that the 1810 decree did not apply to printing shops. Moreover, he pointed out that Kugelmann's presses operated in ways that were similar to other presses in Paris, and which had not been ordered to leave the city's centre.

The cases of the noisy carpet cleaner and the print-shop owner demonstrate that the 1810 decree, which was specifically designed to address the problem of noxious smells and potentially unhealthy emissions, was ineluctably invoked to address other forms of environmental nuisances as the century wore on. The complaint that was lodged in the case of the print-shop owner also reflected new sounds in the city that were associated with mechanical and industrial equipment, which were also heard in American cities in this period, and these new sounds occasioned a growing chorus of voices that railed against mechanical noise.[60] Noise in residential areas was often at issue, and the bourgeois character of the neighbourhood was raised as an argument against the noise that was produced in the case of Kugelmann's print shop. The stipulation that the 1810 decree could only be applied to new businesses, and not retroactively, could stymie the efforts of those seeking to control noise, articles 12 and 13 of the decree notwithstanding. In disputes about noise as an environmental disturbance, business interests, public health and property interests frequently came into conflict.[61]

57. *Contre-rapport de M. Henri Péligot pour M. Kugelmann* (Paris: Georges Kugelmann, 1872), p. 2.
58. Quoted in ibid., 4.
59. Quoted in ibid., 4.
60. Karin Bijsterveld, *Mechanical Sounds: Technology, Culture, and Public Problems of Noise in the Twentieth Century* (Cambridge, MA: MIT Press, 2008).
61. Constant, *Code des* établissements *industriels*, x.

In their 1846 study of urban hygiene, Jean-Baptiste Monfalcon and Augustin Pierre Isidore Popinière provided an expanded list of businesses that they classified as unhealthy or dangerous to varying degrees due to odours, noise and dust.[62] They argued that human industry, salubriousness and hygiene were three interests that authorities had to respect and protect, and that there would necessarily be a 'lively and persistent battle' between them.[63] In their discussion of foundries, for example, which was the industry to which Huber-Saladin objected in 1848, they acknowledged the 'continuous noise of hammers' but still did not include it as a nuisance in their list. They listed only five businesses deemed to present a problem in terms of noise: goldsmiths and silversmiths, wood cutters, metal-button makers and urban cement and flour mills. They even explicitly acknowledged a certain level of noise tolerance: 'in the heart of cities blacksmiths, poulters, tinsmiths, boilermakers, whose businesses are very noisy, are tolerated'.[64] This suggests that the city's existing sound habitus conditioned ways of listening.

In spite of the lenient stance that public authorities took when confronted with the problem of noise produced by manufacturing, attitudes to it began to shift by the 1860s. For much of the eighteenth and early nineteenth century, objections to noise were framed in terms of disturbance and nuisance. As the century wore on, however, they increasingly came to be articulated in terms of the danger it presented to public health more generally. In 1860, the medical hygienist, Maxime Vernois, published his two-volume treatise on industrial hygiene and on establishments deemed to be hazardous to public health. In contrast to Monfalcon and Popinière, he asserted that if 'incessant noise of all kinds' disturbed the peace of urban dwellers, public authorities should 'seriously' apply themselves to finding solutions: 'Noise in big cities is one of the most common of inconveniences', and even, in his view, rose to the level of being insalubrious.[65] While he acknowledged the local municipal ordinances in Paris that regulated certain kinds of noisy industries, he pointed to other forms of noise that were not subject to any form of regulation: 'apart from the noise linked in almost a fatal manner to the exercise of certain trades, there is a panoply of cries and noise (the noise of trumpets, organ grinders, street criers, etc., etc.), which invade the public thoroughfares and private spaces, and against which the law is silent'.[66] He called for new regulations to address the cause of this noise, which also affected those in the workplace, who had 'need of calm', just as much as the infirm, who had 'need of rest', while suggesting that roads

62. Jean-Baptiste Monfalcon and Augustin Pierre Isidore de Polinière, *La salubrité des grandes villes* (Paris: J.-B. Baillière, 1846), 327–343.

63. Montfalcon and Polinière, *La salubrité des grandes villes*, 21.

64. Monfalcon and Polinière, *La salubrité des grandes villes*, 285.

65. Maxime Vernois, *Traité pratique d'hygiène industrielle et administrative comprenant l'étude des* établissements *insalubres, dangereux et incommode*, vol. 1 (Paris: J.-B. Ballière, 1860), p. xx.

66. Ibid, xx.

around schools and hospitals could benefit from macadamisation.[67] This marks a significant shift in the discourse about noise. While noise as a subject was largely absent from the *Annales d'Hygiène* in the first half of the nineteenth century, Vernois's observations reflect an emerging concern about the impact of noise on health and on the human nervous system, which grew louder with the development of the nascent disciplines of psychology and psychiatry.[68]

The shift in the discourse surrounding noise to one that highlighted its danger to public health and to workers in the workplace coincided with a period in which the landscape of Paris was transformed beyond recognition in many sectors of the city. With the establishment of the Second Empire following the revolution of 1848, Napoleon III undertook a vast scheme to rebuild and redesign Paris with the aid of his trusted prefect, Baron Georges Haussmann. It was carried out in part to make it safe from further revolutionary unrest, to provide it with a modern infrastructure and to embellish the city with parks, green spaces and new architectural landmarks. By the time Haussmann embarked on this twenty-year enterprise, the city had already grown from 786,000 in 1831 to 1,000,000 in 1846, with all the challenges that such growth presented in terms of the provisioning of clean water and the risk of disease. While historians have devoted considerable attention to the 'Haussmannisation' of Paris as well as to its critiques and consequences, little attention has been given to its impact on the transformation of the city's soundscape.[69] Haussmannisation displaced large numbers of the city's working class residents to the city's periphery, and the sheer scale of the initiatives taken to build new boulevards and upscale residential housing raised the noise level significantly, as did the network of train lines into the city's train stations. This ambient noise is reflected in the poems of the great poet of modern Paris, Charles Baudelaire. For example, his poem 'To a Passerby' begins: 'Around me thundered the deafening noise of the street'.[70] Noise was evoked visually in the paintings of train stations by Claude Monet and Edouard Manet, as well as in Emile Zola's literary work. In his novel *La bête humaine*, which is set in and around a train station, whistles, sound signals and ground-borne vibrations figure prominently.[71] Of a departing night train, Zola wrote that 'everything had vanished into darkness, and even the sounds were becoming muffled, leaving only the thunderous roar

67. Ibid., xx.

68. Jan Goldstein, *Console and Classify: The French Psychiatric Profession in the Nineteenth Century* (Chicago: Chicago University Press, 2001).

69. David Harvey, *Paris, Capital of Modernity* (New York: Routledge, 2003); David Jordan, *Transforming Paris: The Life and Labors of Baron Haussmann* (Chicago: University of Chicago Press, 2005); Esther da Costa Meyer, *Dividing Paris: Urban Renewal and Social Inequality, 1852–1870* (Princeton, NJ: Princeton University Press, 2022).

70. Charles Baudelaire, 'To a passerby,' in *The Flowers of Evil*, trans. Cyril Scott (London: Elkin Mathews, 1909), p. 58.

71. Aimée Boutin, 'The sound crack in Emile Zola's *La Bête Humaine*', *Nineteenth-Century French Studies* **49** (1/2) (2021): 50–66.

of the locomotive'.[72] Once the boulevards were in the process of being laid and widened, a government minister actually made a request to Haussmann to macadamise a street in order to reduce the noise produced by omnibus traffic, which adversely affected his employees working in the vicinity.[73]

By the early Third Republic, doctors and hygienists had become increasingly concerned about the physical and psychological effects of noise. Less emphasis was put on manufacturing as a source of noise in Paris, as many industries had moved from the centre of the city, and some forms of manufacturing, such as foundries, had become obsolete. However, they expressed new concerns about noise produced by the latest forms of transportation in the city and their effect on private and domestic spaces. In 1871, Jean-Baptiste Fonssagrives, a hygienist in the Faculty of Medicine at Montpellier, pointed to the problem of noise resulting from the 'din of Paris streets at night' and argued that 'annoying vibrations' had a powerful effect on the 'nerves of excitable people', while sapping their power of concentration and adversely affecting their sleep, even among people who had been 'born and have lived in this milieu'.[74] Indeed, he argued that it was a source of erethism, a nervous disorder, and the ebullitions associated with it. Women, according to him, were particularly vulnerable to its effects, but he also stressed its harm on the old and the infirm.[75]

Noise and physical vibrations were increasingly the target of calls for new regulations and emerged with the growing din produced by the motor car, horns and even tugboat whistles that could be heard from the rivers of cities in Europe and North America from the 1890s onwards. These calls and complaints are evident in the formation of the first noise abatement societies. The Association for the Suppression of Street Noise was founded in London in 1895. It was followed by the creation of the Society for the Suppression of Unnecessary Noise in New York at the initiative of Julia Barnett Rice in 1906. One year later, the First International Anti-Noise Convention was held at the Ritz Hotel in London.[76]

Paris lagged behind London and New York in addressing the problem of noise, but it nonetheless witnessed the founding of its own anti-noise league in 1908.[77] Its first annual meeting, which was attended by four hundred, was held in 1910, and after a long speech, the Ligue's president called for his audience to

72. Emile Zola, *La Bête Humaine*, trans. Roger Pearson (Oxford: Oxford University Press, 1996), p. 33.
73. Jordan, *Transforming Paris*, 221
74. Jean-Baptiste Fonssagrives, *La maison: Étude d'hygiène et de bien-être domestiques* (Montpellier: de Gras, 1871), p. 347.
75. Ibid., 347.
76. Bijsterveld, 'Diabolical symphony'.
77. Walter Montano, 'The first international anti-noise conventions/congresses: 1895–1912', *Noise/News International* **28** (2020): 14–19.

declare 'we want silence!'[78] Municipal governments began to respond to these calls. In December 1928, the *New York Times* published a brief article that announced that 'night noises' had become 'agencies of danger to the health of citizens', to such an extent that the British prime minister and the prefect of police in Paris took measures to curb the deafening din in both cities at night.[79] The prefect of police acted on a complaint from a delegation of Parisians about the noise of horns from nocturnal taxi drivers in particular, and scores of them were subsequently arrested.

Technological and scientific developments increasingly enabled municipal governments and noise abatement organisations to gather reliable evidence about a sound's level of intensity. While there were many attempts to measure sound from the seventeenth century onwards, it was nineteenth- and twentieth-century inventions and innovations that led to the establishment of standardised measurements and rendered assessments of sound or noise levels less subjective than they had been in the past. Edouard-Léon Scott de Martinville invented the phonautograph, the first known sound recording device, in France in 1857, but it was Thomas Edison who developed the phonograph, which could reproduce sound, in 1877 in the United States. The modern measurement of sound, the so-called Bell System, created in the 1920s, ultimately became the standard for measuring noise level. Engineers at Bell Laboratories created a new unit to quantify acoustic pressure, which was originally called the 'bel', after its founder Alexander Graham Bell.[80] It was subsequently modified, such that the decibel became the standard unit of measurement.[81]

Doctors and public health officials had begun to take the lead in highlighting the ill effects of urban noise in Paris as early as the 1860s, and this continued into the twentieth century, coinciding with new medical developments. In 1930, a physiologist, Paul Portier, declared that noise was 'one of the characteristics of our time', and it exerted a disastrous effects on the organism.[82] According to Portier, it exacerbated a sense of fatigue, which was already too great, interfered with the simplest intellectual activity, and hindered sleep so as to make it less restorative. Portier presented his findings about the effects of noise to the Académie Nationale de Médecine and asserted that the 'prodigious development of mechanical industries has profoundly modified the conditions of our existence'.[83] In large cities, noise had become a 'veritable calamity' whose

78. Max and Alex Fischer, 'La L.C.B.: Banquets et réunions', *Le Gaulois*, 26 July 1913, p. 4.
79. 'War on night noises: Paris and London move to conserve sleep of citizens', *New York Times*, 28 December 1928, p. 44.
80. Harvey Fletcher and W.A. Munsen, 'Loudness, its definition, measurement and calculation', *Bell System Technical Journal* **12** (4) (1933): 377–430.
81. Scott D. Snyder, *Active Noise Control Primer* (New York: Springer Verlag, 2000), p. 9.
82. Christophe Granger, 'Le coq et le klaxon, ou la France à la découverte du bruit (1945–1975)', *Vingtième Siècle* **3** (2014): 88.
83. Paul-Jules Portier, 'Les méfaits du bruit', Séance du 13 mai 1930, *Bulletin de l'Académie Nationale de Médecine* **103**, 3rd series (1930), pp. 515–16.

physical and psychological effects had been amply studied, and it would ultimately cause urban dwellers to 'suffer cruelly'.[84] He acknowledged that while Americans had moved quickly to create organisations to combat noise, the French had not, and this led to the 'diminution of their cerebral performance'.[85] He called on governmental authorities to take action, which was endorsed by the Académie Nationale de Médecine. In responding to Portier's report, a commentator made specific reference to the problem of noise in Paris: 'How to remedy these ill effects in a city like Paris? Boileau bitterly complained about it three centuries ago. It is obviously impossible to eradicate the noise of Paris, but one could lessen it', and he noted that the Prefecture of Police indicated its readiness to impose silence, which was necessary for work and for sleep.[86] Portier concluded that 'in the domain of pathology, noise again exercises the most nefarious influence' that even affected human character by provoking 'violent reactions' in those predisposed to it.[87] At the same time, among those who were susceptible to psychological depression, it destroyed the silence, calm and tranquillity that were required for recovery. Left uncurbed, noise could contribute to mental disturbances, neurasthenia and psychological disorders.

New initiatives were taken by the prefect of Paris by the 1950s to combat noise in the city. He issued an ordinance on the 27 April 1950 and another on 21 August 1954 which surpassed any previous noise abatement regulations. They stipulated that all unnecessary noise that 'troubled the peace and tranquillity' of the city's residents was forbidden. Articles 2 and 3 of the 1950 ordinance specified particular types of noise, which included beating carpets or draperies before seven in the morning as well as excessive noise emanating from phonographs, loud speakers, radio or television receivers, musical instruments, fireworks, fire crackers, fire arms, industrial, commercial or household work, and construction in the confines of residential buildings or their adjoining structures. Those who violated the ordinance would be subject to the French penal code as well as to fines.[88]

The immediate post-Second World War period witnessed the birth of a major new noise abatement society in Paris in 1958: the Ligue Française contre le Bruit (French League against Noise). A year later it published a periodical entitled *Silence*, which was issued several times a year until 1987. Its membership reflected the continued concern of the medical profession, which had already begun to frame the problem of noise in terms of its dangers to

84. Ibid., 516.

85. Ibid., 517.

86. Achille-Alexandre Souques, Séance du 13 mai 1930, *Bulletin de l'Académie Nationale de Médecine* **103**, 3rd series (1930), p. 518.

87. Quoted in Gutton, *Bruits et sons*, 178. A few medical theses began to be published on the impact of noise in the 1930s, which reiterated these observations. Pierre Petit, *Le bruit et ses effets dans la vie moderne* (Paris: E. Le François, 1936).

88. 'Prefet de Police, ordonnance, 27 avril 1950', *Silence: Bulletin de la Ligue Française contre le Bruit* **1** (1959): 3.

public health in the 1860s. However, it began to express new concerns about noise in the workplace and its effect on the hearing and mental health of industrial workers. The league's first president, Fernand Trémolières, a professor of medicine and member of the Académie Nationale de Médecine, declared that 'noise is a social danger'.[89] His successor, Albert Besson, another doctor, who had close ties with the municipality of Paris and the Ministry of Public Health, was an inspector general of public hygiene for the city of Paris and the president of the Ministry of Public Health's commission that was established to study noise.

The league's bulletin, *Silence*, announced in its first issue that the world's first international conference on noise would be held in Paris from 22 to 24 April 1959 under the leadership of Pierre Chavasse, the league's vice president and director of the acoustic laboratories of the Centre National d'Études des Télécommunications. Its theme was to be 'the battle against noise in industrial and commercial establishments'.

One of the city's most comprehensive noise ordinances was issued shortly thereafter, on 5 June 1959 by the prefect of Paris, and it incorporated some of the stipulations set out in the 1950 and 1954 ordinances. It focused explicitly on noise made by vehicles in the streets of Paris, but it also banned some of the time-honoured sounds made by street vendors and instruments used in street fairs, such as trumpets, gongs, bells and loudspeakers. Those operating businesses were required to stop their work year-round between 10 p.m. and 7 a.m., which marked a considerable change in local practices since the eighteenth century, and which would have addressed Huber-Saladin's complaint over a hundred years before.[90]

In 1961, the Ministry of Public Health's Commission for the Technical Study of Noise created guidelines for acceptable and unacceptable levels of noise in residential buildings by decibel and octave during daytime and nighttime hours, which they illustrated in a graph.[91] It established an acceptable noise level of not more than 40 decibels between 10 p.m. and 7 a.m., whereas ambient noise could reach 61 decibels during the day. The league's campaign against noise stepped up in the 1960s, and it began to issue posters against

89. Albert Besson, 'Hommage à notre président fondateur M. le professeur Fernand Trémolières', *Silence: Bulletin de la Ligue Française contre le Bruit* **1** (1959): 1.

90. Prefecture de Police, *Ordonnance générale du 1 juin 1959 réglementant l'usage des voies ouvertes à la circulation publique à Paris et dans les communes du département de la Seine, suivi des arrêtés d'application et de l'ordonnance du 5 juin 1959 sur le bruit* (Paris : Imprimerie Municipale, 1959).

91. 'Une étape importante de la lutte contre le bruit', *Silence: Bulletin de la Ligue Française contre le Bruit* **9** (1961): 2–3; *Silence: Bulletin de la Ligue Française contre le Bruit* **12** (1962): 2–3

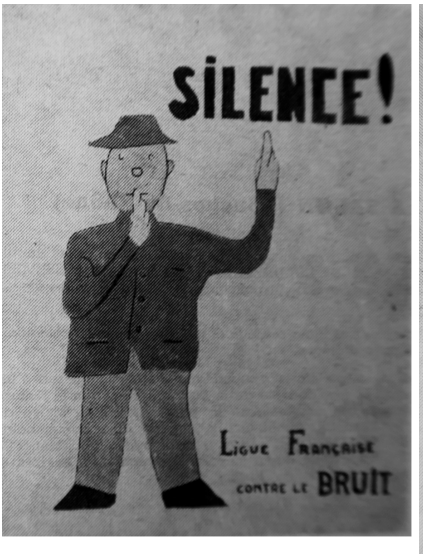

Figure 1. 'Silence!' Source: *Silence: Bulletin de la Ligue Française contre le Bruit* 9 (1961): 8–9.

Figure 2. 'Stop the noise'. Source: *Silence: Bulletin de la Ligue Française contre le Bruit* 9 (1961): 8–9.

noise and hosted a third international conference on noise abatement from 13 to 15 May, 1964, in Paris.[92]

In 1981, *Silence* issued a special issue on noise legislation in Europe in which it observed that in France 'the project of implementing a framework for a law on noise has not yet been achieved and the measures adopted in the meantime are far from instituting general rules on noise'.[93] Indeed, it concluded that legislative initiatives were 'very rare, not to say inexistent', in contrast to Germany where they were 'rich' and abundant.[94] The creation of a new Ministry of the Environment in 1971 had done little to affect noise regulations in the city of Paris, which was still under the jurisdiction of the prefect of Paris. Nonetheless, it founded the Conseil National du Bruit (CNB, National Council on Noise) in 1982 as an advisory body consisting of state and local representatives, trade union officials, community organisations and experts to provide counsel about combatting noise and to aid in 'improving France's

92. Association Internationale contre le Bruit , *3e congrès international pour la lutte contre le bruit, Paris, 13-15 mai 1964* (Paris: Ligue Française contre le Bruit, 1966).

93. Pascale Kromanek, 'Les droits nationaux du bruit en Europe: étude comparée réalisée avec le concours de la Commission des communautés européennes et de Ministère Française de l'Environnement', *Silence: Revue de la Ligue Française contre le Bruit* **78/79** (1981): 3.

94. Ibid., 3.

sound environment'.[95] As the language used to describe the work of the CNB by the Ministry of the Environment suggests, noise had moved from being a public nuisance and danger to public health to an environmental problem. Two years after its foundation, the Ligue Française contre le Bruit devoted a special issue to Paris, and it included a letter to the league from Jacques Chirac, then mayor of Paris and future president of France, in which he affirmed that 'the advantages of urban life are accompanied by nuisance to which we cannot abide; among them, it is certain, that noise, alas, holds a very important place'.[96]

From the early 1980s onwards the municipal government of Paris, various academic bodies and community organisations devoted a greater amount of attention to noise in the city. In 1978 the Centre d'Information et de Documentation sur le Bruit (CIDB, Centre for Information and Documentation of Noise), was formed to assess the effects of noise and to improve the sound environment.[97] In 1982, it began to publish a magazine, *Echo Bruit: Le Magazine de l'Environnement Sonore*, which focused on different facets of the sound environment, publishing special issues on ambient noise in the workplace, sound assessment and urban 'eco districts'.[98] France's Institut National de la Statistique et des Études Economique (INSEE, National Institute of Statistics and Economic Studies), which was formed after the Second World War, also began to undertake detailed studies of noise as part of larger annual surveys of the environment after 1996. In 2001, for example, INSEE's division devoted to household living conditions undertook a national survey of households that suffered from various forms of noise pollution by region (including Paris), by socio-socio-economic status and by age.[99] In 2004, Bruitparif, a non-profit environmental organisation, was formed to monitor noise in the Paris region, and it was accredited by the Ministry of the Environment. It created a network called Rumeur, consisting of 45 long term noise observatories across the Paris region, which were established to monitor noise from vehicles, trains and air traffic as well as from industrial, commercial and leisure industries, while making noise maps of the city available on its website.[100] In 2014, Bruitparif, partnering with

95. 'Le conseil national du bruit', Ministère Aménagement du Territoire Transition Écologique, 18 June 2019, https://www.ecologie.gouv.fr/conseil-national-du-bruit.

96. 'Mairie de Paris, moins de bruit…protège votre santé', *Silence: Revue de la Ligue Française contre le Bruit* n.s. **3** (1984).

97. 'Qui sommes-nous?', Centre d'Information sur le Bruit, https://www.bruit.fr/qui-sommes-nous (accessed 24 August 2024).

98. For *Echo Bruit*, see https://www.bruit.fr/qui-sommes-nous/nos-publications/echo-bruit-le-magazine-de-l-environnement-sonoretest (accessed 24 August 2024).

99. Sylvie Dumartin and Catherine Taché, 'Evaluations de la qualité de l'environnement, des nuisances et de l'insécurité: Indicateurs sociaux annuels', report, Institut National de la Statistique et des Études Économiques, May 2001, https://gallica.bnf.fr/ark:/12148/bc6p06xwzd7/f1.pdf.

100. 'Qui sommes nous', Bruit Parif, https://www.bruitparif.fr/qui-sommes-nous/ (accessed 24 August 2024).

Acoucité, another non-profit organisation, established a European-wide noise index called Harmonica, which was co-financed by the European Commission and awarded a prize for the 'Best Life Environment Projects'.[101]

In 2018, the World Health Organization provided guidelines, establishing excessive noise levels at 55 decibels or above, stipulating their threat to public health. By this measure, 5.5 million Parisians were adversely affected, many more than their counterparts in London or Rome, where the number stood at 2.6 and 1.7 million respectively.[102] The European Environment Agency concluded in a 2020 report that 'environmental noise, and in particular road traffic noise, remains a major environmental problem affecting the health and well-being of millions of people in Europe'.[103] The city of Paris initiated a new noise plan for the city that consisted of installing sound barriers along the ring road surrounding Paris, stepping up noise checks, adopting noise-reducing asphalt and requiring all new housing to have at least one façade that was not exposed to external noise. In addition, new noise radars, 'medusas', due to their resemblance to jellyfish – *méduse* being the French word for jellyfish – were installed to record excessive noise, and they had the capacity to photograph license plates. Finally, fines of 135 euros were imposed after 2023 on cars generating excessive noise. While these measures have reduced noise levels by two decibels, future plans have been drawn up to reduce the city's noise by another 37 per cent by 2026.[104]

The long history of noise abatement in Paris demonstrates the ways in which a sensory history of the space of the city, which has largely been studied at specific moments in time and in terms of the light it sheds on the social and cultural history of Paris, reveals new and neglected facets of the city's environmental history. It shows that the meanings invested in the diversity of sounds in Paris changed over time as the city's soundscape changed due to rapid urbanisation, population growth, a changing economy, the introduction of new technologies, new forms of production and new modes of transportation, including omnibuses, cars and trains. Parisians were slow to perceive certain kinds of sound as 'noise' in comparison with their counterparts in North America, and initially expressed more concern about other kinds of environmental nuisances, such as foul odours and smoke. Some sounds did, however, eventually come to be regarded as excessive, unpleasant or disturbing enough in an urban environment to warrant new regulations. Older regulations used to control noxious odours and smoke were also used to control noise. To

101. 'Le projet Life Harmonica (achevé)', https://www.bruitparif.fr/le-projet-life-harmonica-acheve/ (accessed 24 August 2024).

102. Peter Young, 'Europe's noise capital tries to turn down the volume', *Bloomberg*, 27 April 2022, https://www.bloomberg.com/news/features/2022-04-27/how-paris-is-waging-a-war-on-noise-pollution.

103. European Environment Agency, 'Environmental Noise in Europe – 2020' (Luxembourg: Publications Office of the European Union, 2020), p. 7.

104. Young, 'Europe's noise capital'; *Le bruit à Paris: Bulletin de l'observatoire* **1** (2000): 2.

understand how this process occurred, the historian must not only explore the sounds that could be heard at certain moments in time, but also how the city's residents' past habitus shaped their way of listening and how a changed habitus altered listening patterns.[105]

Perceptions of noise evolved from first being considered a 'nuisance' and an assault on public order to being a threat to public health, and finally to being a source of 'environmental pollution' in the twentieth century. The growing awareness of noise as an urban problem and some of the impetus behind regulating it came first from property owners and city residents, then from 'experts' ranging from physicians to hygienists, and finally from municipal authorities responding to the city's residents who began to form noise abatement organisations by the early twentieth century. Concerns about noise in Paris ultimately moved from noise produced in domestic spaces to those produced by manufacturing – both pre-industrial and industrial – and then to noise created by new technologies and modes of transportation, including omnibuses, cars and aircraft, as well as phonographs, radios and loudspeakers.[106]

The noise of clattering horse-drawn carriages, about which many complained bitterly in the eighteenth century, are now gone from the streets of Paris. The foundries, *cris de Paris*, steam engines, animal carts, tanneries and the cacophony of numerous church bells have also disappeared. The soundscape of the city has changed irrevocably. All the while sensitivity to noise has become more acute as the number of complaints about it has soared. The long history of noise in the City of Light thus attests to the fact that 'the discomfort that arises from a sound that puts it in the category of noise is relative and evolves over time'.[107] By the twenty-first century, Parisians no longer considered noise to be merely a nuisance but rather a form of pollution that the municipal government of Paris is obliged to address so that the capital's residents and its many visitors will no longer lie awake when they go to bed at night.

105. Bijsterveld et al. 'Shifting sounds', 16.

106. Coates, 'Strange stillness'.

107. Henry Torgue, 'Bruit urbain: Nuisance ou ambiance?' *Echo Bruit* **136** (2) (2012): 8.