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# 5 The ‘hell of modern sound’

## A history of urban noise in modern Japan

*Martyn David Smith*

### Introduction

The contemporary Japanese city soundscape is loud. It consists of unending announcements at railway stations, talking ATMs and escalators, loops of ads and jingles in department stores, supermarkets, and shopping arcades; the loudspeaker-wielding trucks of right-wing groups, carts selling everything from sweet potatoes to screen doors and even petrol; police and politicians with megaphones; constant warnings about the dangers of riding on the bus or train; and the sirens, car horns, and rumble of traffic and pedestrians found in any contemporary cityscape. Philosopher and contemporary anti-noise campaigner Nakajima Yoshimichi (1996) is merely the loudest proponent of the idea that the Japanese people are oppressed by—or, in his term, pickled in—the constant noise of everyday life. For Nakajima, there is a crippling passivity and ignorance at the core of Japanese peoples’ relationship with urban noise. Many scholars, musicologists, and musicians have also seen a cultural propensity in Japan to passively accept noise in public spaces.

The idea that Japanese people perceive sound differently from ‘westerners’ has informed much of the scholarship on sound and music in Japan, often drifting into the realms of the cultural essentialism typified by *Nihonjinron* (theories of Japanese-ness). Noisiness may be socially unacceptable, but it is still understood as being tolerated by the Japanese as a basic feature of their ‘sound saturated society’ (Novak 2015, 132).<sup>1</sup> Many scholars have argued for a contemporary Asian city soundscape that favours the boisterous, vigorous, and energetic in contrast to the West’s ‘quest for oases of calm’ (Chenhall, Kohn and Stevens 2021, 26–27). Recent research, however, shows that sound in contemporary Japan clearly sits at the centre of an ongoing battle over social and cultural propriety, individual belonging, and the politics of public space (Hankins and Stevens 2013). Thanks to this challenging of the presumption that Japan is somehow unique or special with regard to sensitivity to sound, it is becoming clear how the sensory experience of noise in Japan informs and transforms the ways in which people actively listen, not just to music, but to the sounds of the everyday. And there is a growing volume of work, in English and in Japanese, that analyses the differing genealogies, embodiments, manifestations, and theorisations central to the field of sound

studies (Yoshimi 1995, Edwards 2011, 89–102; Dolan 2008, 662–690; Kreutzfeld 2006, 88–99; Plourde 2019, 1–14; Novak 2008, 15–34; Abe 2018; Hayshi and McKnight 2005; Service 2018; Manabe 2015; Yasar 2018). If, as Steingo and Sykes have recently noted, it is important that scholars investigate ‘diverse sonic ontologies, processes, and actions’ (2019, 4) to better understand core components of the history of sound in global modernity, then that work is well underway for contemporary Japan.

Still, what little research has been done on the history of noise as an urban problem in Japan prior to the 1970s has often focused on complaints about the noise of US military bases and concerns around aircraft noise (Igarashi 1993; Cox 2013). As this chapter shows, a longer historical perspective on discussions and debates over noise in urban Japan highlights continuities and similarities as much as contingency and diversity. The problem of urban noise in Japan has a history. Far from passively accepting or culturally embracing noise, the Japanese have long struggled with the definition, measurement, and control of unwanted sound, even if these efforts appear in vain from a contemporary perspective. Since at least the 1870s, debates and discussions created sonic ontologies and produced similar processes and actions, at similar moments, as in the cities of Western Europe or the US. Noise came to be seen in tandem with other modern social problems, but unlike in Europe at the same moment, these debates were not necessarily connected to anti-urban or anti-modern discourses (Payer 2007; Mansell 2017). From the late nineteenth century to the late 1970s, noise and the idea of the ‘modern’ soundscape also worked within a feedback loop that amplified politically driven debates about the nature of ‘modernity’ and the meaning of ‘civilisation’.<sup>2</sup> In Japan, rather than a pathological aspect of the process of modernity, noise often became an indication of the low level of civilisation and enlightenment of the people and exposed the nagging need to ‘catch up’ with the West and the necessity of expert intervention. This chapter traces some of those debates to better understand the process through which the noise of modern technology was constructed as an urban problem that gave way to the noise of people and everyday life by the late 1970s.

The first section will examine how the physical sound, or sonic ecology, of Japan’s cities changed in the late nineteenth and early twentieth centuries and outline some of the responses to that transformation. Authorities’ concern for noise stemmed from an overwhelming fear of embarrassment in the eyes of the Western powers, as the Meiji Restoration sought to transform the country into a modern nation-state as quickly as possible. This paternal approach to urban noise mainly targeted the lower classes and, in step with a growing intellectual discourse, framed the Japanese people as backward and unsuitable for civilisation. Although during the 1910s and 1920s, middle-class citizens did take up moral cleansing and prompted cultural reform movements, such as those against prostitution and for temperance, urban noise failed to become a rallying point for citizens’ movements. In most Japanese cities, the main cause of complaint was increasing traffic rather than the noise of that traffic. Dealing with this required top-down expert interference and

regulation raising questions about the nature of urban noise itself. I then go on to discuss the pressing problem of definition that arose by the late 1920s as groups of scientists, engineers, and acousticians began to come together to try and find ways of dealing with the problem of noise. Through their debates, noisy neighbours, street noise, or the noise of people going about their daily business came to be understood as 'urban music' and was disregarded in favour of a focus on traffic, transport, and civic construction projects. The lack of popular, citizen-driven anti-noise movements like those that formed in Europe and the US at the same moment took the problem out of the hands of the individual. Social or individual responsibility for urban noise in Japan was muted in favour of modern technological solutions to a problem of modern technology. The final section outlines the re-emergence of the problem of city noise in the early post-war years and highlights the connections to the early 1900s. By the late 1950s, the noise from individuals going about their everyday lives in the city was increasingly recognised as a problem that was refocused as one of personal and social hygiene best solved by individuals, society, and the state working together. Still reverberating throughout these debates, however, was the belief that the difficulty of dealing with urban noise was at its root a problem with the backwardness of the Japanese people. The solution to the 'barbarism of civilisation' lay in their eventual enlightenment.

### **The changing ecology of sound**

An 1817 ordinance applying to the whole city of Edo (Tokyo) stated that noisy disturbances, *kensou* (喧噪), should be sorted out amicably by the people involved. *Kensou* mainly applied to public unrest, fighting or general boisterousness. Mostly related to human or animal noise, *kensou* could be dealt with through amicable agreement; it did not usually require the intervention of the authorities and was not considered in relation to its effects on health (Sueoka 2007, 77–78). After the Meiji Restoration of 1868, the new national government's immediate concern was catching up with the 'Great Powers'; a task which involved unleashing the potential of the Japanese people through western style education, government, and the promotion of culture. The new leaders believed that the great nations of Europe relied on the resourcefulness of their populations and hoped to create a community of loyal, self-actualised, dutiful national subjects. Unfortunately, they also believed that the Japanese people were simply not that sophisticated. Their craftsmen were ignorant of modern machinery, merchants chased petty profits instead of focusing on world trade, farmers lacked independent thinking, and the former samurai class was ignorant of modern statecraft and warfare (Ravina 2017, 149–150). Creating a sense of public order and civilised values that would be acceptable to western sensibilities and ridding the country of the barbaric customs of the past required a more centralised system for dealing with immoral or illegal behaviour and different definitions of what constituted both. In Tokyo, an 1879 ordinance added a prohibition against singing,

dancing, or playing music after midnight, and otherwise disturbing sleep, to already banned behaviours such as urinating in the street, mixed bathing, or displaying tattoos (Sueoka 2000, 208). As in Victorian England (Picker 2003), the notion of noise here mainly targeted the sounds of the lower classes—street musicians and performers, as well as Kabuki theatres. By many accounts, the sounds of everyday life in nineteenth-century Japan were not well-suited to refined European sensibilities (Naito 2005; Yasar 2018, 59–68). British traveller Isabella Bird complained of the high-pitched whining of voices in the street, the discordant sounds of the shamisen, Noh chanting, and the thud of Taiko drumming. Whilst Bird's neurotic whingeing about noise may well have been a reflection of deeper psychological, orientalist, and blatantly British Victorian concerns with perspective (Holt 2017), she, like many other Westerners visiting Japan in the late nineteenth century, nevertheless conjured a soundscape still largely dominated by organic noise.

After the restoration of 1868 though, the government instituted a process of industrialisation and modernisation that rapidly transformed the social, economic, and political nature of the country. Environmental pollution quickly became a serious concern for the Japanese people but was generally viewed as an unfortunate sacrifice to be made in pursuit of nation building projects central to the process of modernisation. The emphasis on designing Japan's urban spaces around transportation as a bringer of prosperity and an indicator of a city's commercial and economic vitality, for example, lauded roads and streets as an index of civilisation and modernity; so much so that street improvement became central to Japan's urban construction projects in its colonies (Gun and Townsend 2019, 19). By the early twentieth century, the authorities had begun to recognise and take action to tackle smog, chemical, and industrial pollution problems arising from industrialisation and mass production (Miyamoto 2013). Yet the process of modernisation also dramatically changed the sonic ecology of Japan's cities, and soon made clear the need for new ways of understanding, discussing, and dealing with noise.

It took less than half a century for factories, trains, buses, trams, cars, motorcycles, telephone, radio, pneumatic drills, and steam hammers to begin to drown out the more organic sounds of everyday life that disturbed Bird's orientalist quest for peace and tranquillity. As the landscape became industrialised, mechanised, and increasingly dominated and dictated by modern forms of transportation, the sounds heard, and their volume and consistency, contributed to the emergence of a sonic ecology very different from that of Edo-Period Japan.<sup>3</sup> The density of Japan's pre-Meiji urban spaces—Edo was the most populated city in the world by the 1700s—meant that the presence of people, traffic, transport, and construction was a constant feature. Nevertheless, from the late 1800s rickshaws, horse- and ox-drawn wagons, pull carts, and pedestrians quickly came to compete with bicycles, trams, trains, automobiles, and motorbikes as transportation moved from the river to the roads. If, as Emily Thompson claims (2002, 1), a soundscape is both a physical environment and a way of perceiving that environment, then from

the early 1870s, the physicality of Japan's urban soundscape was fundamentally transformed. Gradually, the pernicious and violent effects of modern, machine-made noise on human health, and the need to use modern technology to adapt the environment to reduce it, increased the influence of acoustical experts, engineers, and scientists. But the battle over the perception of the noise of modernity in Japan nevertheless continued to work on the Meiji-era assumption that the Japanese people themselves lacked the required level of civilisation to understand the need for quiet.

In the 1870s, *kengou* (喧囂), which, like *kensou*, marked noise as an organic problem, was increasingly being used in complaints about 'the wild uproar and pandemonium of public bathhouses' and the noise made by night soil collectors—still associating noise and boisterousness with the lower classes. However, in May 1878, the Osaka authorities noted that *kengou* was becoming increasingly related to issues of public health, as were the increasing number of complaints about vibrations (*chikyō* 地響) from people living next to metal works and smithies (Koyama 1973, 282–283). From the start of the Meiji period (1868–1912), the Osaka authorities had noted the need for regulations targeting factories (Sueoka 2000, 212). Over the following decades, the noise caused by civil engineering projects increasingly impinged on the environment of everyday life, as city planners rebuilt large areas of Japan's major cities, laying concrete foundations, building subways, and dreaming up various modern cityscapes. By the 1920s, Osaka was the sixth largest metropolis in the world. Modern transportation increased the population densities of both Tokyo and Osaka, and, with the appearance of trams, trains, and taxis, the problem of traffic noise came to be understood as one of the biggest threats to the lives and health of urban residents. As once formerly cobbled roads were tarmacked and rubber tyres began to become commonplace, the use of car horns and bells increased. These could be essential to the prevention of fatal accidents, and their excessive use was even actively promoted by the authorities in Amsterdam (Jacobs 2012, 305–321). Nevertheless, in Osaka, they contributed to what one newspaper described as a 'hell of modern sound' that had given birth to the 'scream of civilisation sickness' (*Kotsu hanka ga unda bunmei-byō no himei*', Osaka Asahi Shimbun, 2 February 1929 reprinted in Koyama 1973, 349). By the start of the Showa period (1925–1989), the organic basis for the noise problem had been drowned out by modern urban lifestyles.

The number of automobiles, trucks, and motorbikes on the streets of Osaka grew from 39 in 1915 to 6,886 in 1935. In Nagoya by the mid-1930s, the 2,000 cars on the roads jostled for space with countless bicycles, 809 'automatic bicycles', and no less than 26,630 hand-pulled carts. Various vehicles competed for space on narrow and winding streets designed for pedestrians (Gun and Townsend 2019, 21). The noise was impressive, and loud internal combustion-powered vehicles, combined with rough road surfaces and rudimentary driving etiquette, served to amplify the problem (Hanes 2016). In 1929, the November 9th edition of the *Osaka Asahi* newspaper explained how the city's main street, Sakaisuji, was the source of a disorderly,

untidy ‘symphony’ at rush hour when 7,000 vehicles streamed through the area as ‘the sandbags were lifted, and all kinds of wheels stampeded forth like a torrent’ (Osaka Asahi Shimbun 9 November 1929, reprinted in Koyama 1973, 349–351). At those times, Sakaisuji became more than simply a bustling street and far from melodious. The cacophony caused a ‘sorrowful cry’ to ‘well up inside’, as shopkeepers and pedestrians took their lives into their own hands simply going about their daily business. ‘Born of the bustle of transportation’, the ‘scream of civilisation sickness’ had forced 450 residents along Osaka’s main street to petition the prefectural government to do something (Koyama 1973, 349). The petition outlined the lethal nuisance caused by traffic, particularly for school children, and called for limits on the speed of cars and bicycles as well as the provision of clearly marked pedestrian crossings. The banning of bulky delivery bicycles or tricycles and rules to stop empty taxis driving around small areas were also necessary. The petition reflected a very real concern with the physical presence and violence of modern transportation because the immediate danger to life lay in the very real prospect of being run over. Yet, of the 13 points noted in the petition, seven concerned the problem of noise.

By adding these seven articles on noise, the authors aimed to bring about salvation from the ‘hell of sound’ (*onkyo jikoku*) (Koyama, 1973, 349). They recognised the biological, affective nature of modern noise. The indescribably unpleasant cacophony of blasts and sirens from vehicles dashing down the road was making the people who lived and worked around Sakaisuji, particularly those who worked on the upper floors of adjacent high-rise buildings, sick from nervous exhaustion. The Sakaisuji petition sought to combat this, requesting devices to reduce sound levels from automobiles, motorbikes, and even bicycles. Residents urged the authorities to consider ways to reduce noise from exhaust pipes, bells, and horns. Indeed, it was imperative to ban any continuous and unnecessary sounding of horns, the petition noted. Outside certain areas, this should be banned altogether, and the tone of car, train, and bicycle horns should be changed to make them more pleasing to the ear. The local police inspector saw excessive noise as a clear side effect of the development of a traffic culture in the city but warned that the increased sounding of horns and bells was not necessarily a bad thing. Mr Oda, of the traffic safety section of the local government, saw the physical danger posed by traffic as more important than the noise emanating from it. Changing the sound of the horns would cause all sorts of problems over how to distinguish different vehicles. Restricting their use could well lead to an increase in traffic accidents. At the end of the day, the noise problem was likely more to do with the fact that a lot of horn blowing was unconscious and ‘even in jest’ (Koyama 1973, 349). Despite the *Osaka Mainichi* newspaper labelling the city’s noise ‘the barbarism of civilisation’ (*Osaka Mainichi Shimbun* 9 October 1931, reprinted in Koyama 1973, 354–356), this idea that the Japanese were profligate with their noisemaking connected the problem to a broader issue with the Japanese people’s adaptation to modernity rather than the process itself. For many commentators, educating the

Japanese people in the correct ways of making modern noise was an essential, though difficult task.

In this context, the class-based prejudices of the discourse on noise developing in the West—that noise was causing the mental and physical breakdown of men who would 'do lasting work of the greatest public importance as lawyers, social reformers, preachers, journalists, physicians or surgeons' (Mansell 2017, 36–37)—was transposed in Japan onto the nation as a whole in its quest to catch up with the West. Excessive noise was soon understood as a problem with the supposedly backward nature of the Japanese people, rather than a form of social and environmental pollution that needed to be dealt with in a formal manner. Indeed, the noise along Sakaisuji could also interfere with the correct functioning of modern technology and thus the process of modernity itself. According to the owner of one restaurant on the street, the noise of the traffic was so loud that he had trouble hearing his customers' orders over the phone and often made simple mistakes that cost him good business (Koyama 1973, 350). The growing consensus was that the problem of city noise (*toshi souon mondai*) could best be solved if the Japanese people learned to make it in the correct manner. The result of this concern with noise and how to control it was not so much the pathologising of modernity, as in Britain or Europe in the same period, but a concern with traffic noise as uncontrolled interference with the everyday life of the people and, at the same time, one expression of the Japanese people's lack of 'civilisation'.

Debate and discussion around the problem of noise in Japan was gathering pace by the 1920s. As in Europe and the US at the same time, this idea of noise as 'unwanted sound' or interference became common among acoustical engineers and scientists (Bijsterveld 2001, 52). Yet its problematisation in Japan had centred on a lack of civilisation since at least the start of the twentieth century. In September 1902, Mr A. Victim wrote a letter to the editor of the *Japan Times* regarding the 'tremendous and unnecessary amount of steamboat whistling' on the Sumida River in Tokyo. As one of the 'thousands of innocent people' disturbed by the whistles, Mr Victim hoped to draw the attention of the proper authorities, whether the harbour police or the city police, to the 'almost continual howl of that greatest of modern nerve-destroying devices the steam whistle in the hands of men who regard it only as a means by which they may gratify their barbaric desire to make a noise'. The writer acknowledged the legal right of the officers in charge of the boats to blow their whistles. It was necessary to avoid collisions and warn 'some dilatory junk or other vessel' that it should get out of the way. That was, after all, 'the rule of the road at sea by all civilised nations'. Yet, whereas 'other civilised nations' had 'long ago stopped all playing with whistles such as occurs every day and every night on the Sumida', the whistles in Tokyo could be heard every 20 to 30 seconds; '[f]or no other reason that anyone can observe, excepting that they like to play with their whistles' (*The Japan Times* 1902, 3).<sup>4</sup> Mr Victim had undertaken his own (unofficial and unscientific) survey into noise pollution along the river providing the evidence. From around four in the morning, boats blew their whistles on average twice a minute. Between

three and five in the afternoon, the presence of several boats at a time meant they were even more frequent—‘an average of fourteen times in six minutes’ (*The Japan Times*, 9 September 1902, 3). This was clearly annoying for all those who lived within earshot of the river, claimed Mr Victim, but it must have been especially distressing for those who lay on their sickbed. Moreover, the cacophony of boat whistles was on top of the sounding of factory whistles at all hours of the day and night, ‘not just once but with a number of prolonged blasts’ that made sleep and repose almost impossible (*The Japan Times*, 9 September 1902, 3).

Mr Victim argued that in other countries, a single blast of the factory whistle was quite enough to ‘remind the most stupid workman’ that it was home time (*The Japan Times*, 9 September 1902, 3). Yet, from the vicinity of Tsukushima, a man-made island in Tokyo Bay, two long blasts would bellow out at midnight. Then, from four in the morning and throughout the day, various factories competed to blow their horns, each longer than the other. As with the steamboat whistles, this caused very great distress and annoyance to ‘all who have to endure it at all hours of the day and night’ (*The Japan Times*, 9 September 1902, 3). The letter contrasted an apparently (previously) tranquil and peaceful ‘natural’ city to the threatening nature of the noise made along the river. As with Osaka’s main thoroughfare in the late 1920s, the noise of river traffic destroyed the nerves of those subjected to it, and the cacophony caused by the factories and the boats along the Sumida was ‘out of joint with the ancient repose and general good management of Tokio [sic]’ (*The Japan Times*, 9 September 1902, 3). Mr Victim believed that the authorities’ attention had not yet been directed to this nuisance but acknowledged that he was not certain to which authority the regulation belonged—the department of Communications, or the Water or Land Police. He nevertheless hoped that ‘the proper officers would take it promptly in hand and [...] do all that is lawful to suppress it’. Doing so would earn them the gratitude of ‘many citizens of this old city’. No one could object ‘in the least to the necessary signals of commerce, nor to a reasonable length of factory whistle to call the men together’. Still, Mr Victim found it hard to believe ‘that the Japanese can possibly be so dull as to require three times as many steam whistle blasts, either on river or land, as the men of any other nation’ (*The Japan Times*, 9 September 1902, 3). The unnecessary, unpredictable, and threatening noises on and around the Sumida River demonstrated an incomplete process of civilisation, according to Mr Victim’s logic. The discourse about Japanese people’s unsuitability to modernity—modern forms of working as well as modern forms of transportation—rang out loud and clear long before the Sakaisuji residents put forward their petition.

As elsewhere then, the effects of noise on health, particularly the nervous system, came to underpin anti-noise campaigns from the early twentieth century onwards. Yet, in Japan, this medicalisation of noise carried prejudices of class and rural repose that informed the contrast between ‘civilisation’ and ‘backwardness’ in debates about modernity in Japan: Japanese factory owners and steamboat captains did not understand the need for control over

unnecessary noise, or the threat it posed, and the workers they employed were unable to get the message that it was time to go home. Yet the chaos of modernity also made clear a lack of 'modern' forms of authority, such as central control over what happened on the river or over the traffic along Sakaisuji. If the feudal regime had worked within a system of delegation to local authorities when dealing with noise, the modern state needed to establish forms of authority to deal with the noise problem and its threat to health and the (perceived) ancient peacefulness of Japan's cities. As early as 1902, Mr Victim's discussion of noise hints at wider debates over the nature, meaning, and threat posed by a process of modernity that originated in the West. As with the bustle of rush hour along Sakaisuji in Osaka more than two decades later, the sound of the whistles on the Sumida was a form of interference; a noise that interrupted the transmission of modernity and signalled a lack of civilisation. The 'hell of modern noise' that triumphed by the 1930s then was not only a condition of modernity—an inescapable component of the technology that came with it—but also a problem with the response of the Japanese people to that modernity.

### **Defining, understanding, and controlling noise**

Perhaps because the Japanese people were seen as unsuited, or at least not quite ready for civilised modernity, solutions to the serious urban noise problems caused by overcrowding and industrialisation in the 1910s and 1920s involved the increasing engagement of scientists and other specialists rather than being driven by citizens' movements. In these decades, cities like Tokyo and Osaka became some of the most densely populated cities in the world (Townsend 2014). Although treatment of some of the more obvious environmental pollution problems was bringing faith in scientific solutions into question (Watanabe 2013, 74–75),<sup>5</sup> the quest for ways of measuring and ultimately controlling urban noise soon came to incorporate experts in the fields of acoustics, public health, construction, and transportation. As Raymond Smilor (1977) has shown, in the US, a shift in approach to the noise problem occurred around the time of the first world war as citizens' groups began to wage a legal battle against noise. Nevertheless, during the 1920s, experts, scientists, and managers took over these campaigns and expanded research, experiments, and measurements aimed at examining every aspect of the problem (Smilor 1977, 25). In Japan, it was the scientific and technological prospects for controlling the noise of modern technology that brought the problem to public attention. In 1930, an exhibition was held in Osaka showcasing work that was underway in various fields and introducing the different scientific means of measuring sound and the problem of defining noise. The exhibition included the results of a survey by New York's Noise Abatement Commission which had measured noise at different locations around the city. The problems plaguing America's largest city were little different from those highlighted in the petition by the residents of Sakaisuji: screeching brakes, the abuse of car horns, pneumatic drills, as well as the turnstiles in subways

and train stations (Hirokawa 1979, 279). The New York report made it clear that the noise of machinery now needed to be considered a serious health hazard. The clamour of the city impaired the hearing of New Yorkers and induced harmful strain upon the nervous system that led to loss of efficiency for workers and thinkers and that disturbed everyone's sleep (Bijsterveld 2001, 53). In Japan, the exhibition raised public awareness and spurred research and investigation into the prevention of city noise but, unlike in the US and Europe where citizen-led anti-noise movements were taken over by the experts, in Japan the driving influence behind the search for solutions to the problem came from experts, scientists, business conglomerates, merchant associations, and the state. Due to the rapid process of urbanisation from the early twentieth century, the problem also became dominated by the issue of traffic noise.

At the Osaka exhibition, the city's architectural association set up a sound-proof room and an echo chamber. Ten different kinds of car exhaust mufflers were on display, and the museum's director had recorded noise levels around several locations using the latest technology to create a database of information that 'would be of great interest to the people of the city'. The display also included more 'traditional' elements of the soundscape: the sounds of animals, folklore, religious rituals, superstition, and those 'sounds used to sell goods' ('Toshi no Souon Shindan ni-ju Kara Akareru Kyomi Bukai Tenrankai', *Osaka Asahi*, 12 December 1930, reprinted in Koyama 1973, 351; see also Hanes 2016, 34–35). But it was the problem of the noise of trains, trams, and cars that was taken up as the most pressing. In the Kanto region, private rail companies represented by Odakyū, Tokyo Shiden, Shonan Dentetsu, Tokyo Chikatetsu, Nanbu Tetsudo, and others, met to discuss the problem of train noise and the best way to study it in more detail (Hirokawa 1979, 279–280). The noise created between the tracks and the carriages, different kinds of train whistles, and the acoustics of the manufacturing materials used in the making of carriages made clear the diverse fields within which the problem of sound and noise emerged. The project quickly expanded to include experts from the manufacturing department of Tokyo Imperial University, Tokyo Imperial Aeronautics Research Centre, Japan Electric, as well as a representative from the research division of the railway ministry, and it even included presentations from several biologists interested in the Japanese voice. In 1931, the issue became even more pressing when the government began to promote tourism to overcome economic depression (Hirokawa 1979, 279–280). The promotion of peaceful and relaxing tourism by train was an important impetus for the increasing understanding of—and growing alarm at—the effects of noise on the human body.

In October 1931, the *Osaka Mainichi* newspaper explained that the damage to health had long been ignored, even though the 'noise of the factory came from the right and, from the left, the roar of traffic'. Noise increased the heart rate, raised blood pressure, could weaken muscles, and even 'attack you in your sleep' (*Osaka Mainichi Shimbun*, 9 October 1931). People needed to be made aware that noise was not only psychological, but also biological.

In 1928, a similar case had been made by the prosecuting lawyers in a Tokyo court case. Representing people disturbed by the constant vibrations of trucks going to and from a book binding factory, they argued that, compared with smoke and river pollution, noise was a relatively recent problem:

the special characteristic of noise is that it directly and powerfully gives citizens a sense of being damaged. Unlike water and air pollution, where the problems build up gradually and the cause is often hard to find, there is none of that ambiguity with noise. Noise also seems to be impossible to deal with as it shocks the nerves and destroys everyday life. Physical well-being and sleep are affected, thought, study, work and conversation are impaired. Noise directly causes stress and discomfort in the ordinary activities and very existence of human beings.

(Quoted in Koyama 1973, 283–284)

By the early 1930s then, concerns over the effect of noise on public health and the prospects for control over sound through the latest technology were clear, but the focus had shifted completely since the early Meiji period. In 1937, thanks to increasing concern over disturbed sleep and study, the Osaka authorities issued the first regulation aiming to control excessive noise from radios, gramophones, and other electrical appliances emanating from the home (Sueoka 2000, 210). Nevertheless, from the early twentieth century, it was the noise of modern machinery-transport, industrial production, and construction that took precedence over the noise of people going about their everyday lives.

Bringing experts from various scientific fields and social policy makers together to tackle this problem raised the subject of terminology and further focused the urban noise problem on transport and industrial production. In April 1934, in a special issue of *Toshi Mondai* (Urban Problems), Fujiwara Kujirou published his seminal study of noise abatement, which included noise data from sound meters. Two years later, the Japan Acoustical Society was established by a concerned group of physicists (Hirokawa 1979, 281–283).<sup>6</sup> By the mid-1930s, the term *souon* (騒音) was being used in some anti-noise ordinances (Sueoka 2000, 213), and appeared regularly in the media. However, since the 1870s when mechanical noise had begun to overtake organic noise as a cause of complaint, the issue of how to define noise from different sources—what *was* noise—had actually never really been tackled. It was by no means an easy task. In media debate and discussion, the compounds (騒音) (噪音), both pronounced *souon*, were often used interchangeably to refer to noise. Because of increasing interest in the problem by the early 1930s, there was a lively debate over terminology and the complexity of definition in comparison to English. As various groups began to form to investigate the problem, an agreed definition became necessary if researchers and specialists from different fields were to work towards mitigating urban noise. That definition politicised the issue by separating and then prioritising certain sounds over others.

In physics, the concept of sound (*onkyou* 音響) can be *ongaku* (音楽); referring to melodious sound waves—relatively constant in volume and timing and generally repetitive—this is the compound used to translate the word music. The term *souon* (噪音) consists of complicated sound waves—they rarely repeat and can change in volume and timing. In physics, this term is restricted to unappealing, unwanted sound and interference: noise. But, taken on its scientific definition alone, *souon* (噪音) can of course be suitable for discussing the sound of the wind, water, footsteps, and the sounds of daily life in any city (Koyama 1973, 290–292). As the scientists, engineers and acousticians took on the issue in Japan in the 1920s, the term *souon* (噪音) became the common way of referring to noise. Yet, as physicist Kohata Shigekazu pointed out in the September 1930 edition of the journal *Toshi Mondai*, the complexities of urban noise were disavowed by the scientific bias of the term. To study the problem using the term *souon* (噪音), it was necessary to label many of the usual, acceptable, and expected sounds of daily life or the natural world as noise because of their diverse, constantly changing frequencies (reprinted in Koyama 1973, 297–303). It was two months later that architect Satou Takeo sought to remedy this by proposing a different word, 騒音 (still with the same pronunciation of *souon*), be used to separate city noise from noise in physics and music (Koyama 1973, 290–292). In the compound 騒音, the first character implies boisterous or turbulent; and in contemporary Japan, it refers to noise which violently obstructs peace and quiet, interferes with the transmission of organised sound such as music or conversation, and can damage the sense of hearing and human health. The article argued that making this distinction would help to broaden the terms of the debate and make it easier to distinguish noise that had an unpleasant effect on daily life from the more organic noises emanating from humans, animals, or the natural world (Koyama 1973, 292).

A few years later, in 1933, in the September issue of the same journal, Kinichi Hirose proposed *kensouon* (喧噪音) as another means of solving the problem of definition. Adding the symbol for boisterous, noisy, brawling (*yakamashii*), used in the Edo and Meiji periods discussed above, the author further stressed that the compound 噪音 did not really imply a boisterous or unpleasant sound:

*Kensouon* (喧噪音) is different from 噪音 (*souon*). 噪音 (*souon*) is the term for noise constructed through the study of acoustics. It certainly does not refer to unpleasant sound, and 喧噪音 (*kensouon*) is not (meant to imply) 噪音 (*souon*). From the perspective of acoustics, much of the sound that creates urban noise (*Toshi kensouon*), can be labelled music (*ongaku* 音楽) [...] The general name given to the problem is mistaken.

(Koyama, 1973, 290–292)

Hirose wanted to make it clear that the problem to be addressed was ‘city noise’ (都市喧噪音), not ‘city music’ (都市噪音). It was necessary to highlight the unpleasant sounds of urban life, but scientific terminology based on

the nature of different types of sound waves was not enough. In this way, the debates over terminology rendered the problem of noisy neighbours, street noise or the noise of people going about their daily business extraneous to the problem of city noise. Footsteps, singing, music blaring, and tradespeople shouting in the street would not come under the definition of city noise as the scientists shaped it, because these were seen as part of the aesthetic appeal of city life. For those writing in the 1920s and 1930s, the 'noisiness' of everyday life that the contemporary philosopher Nakamichi describes in contemporary Japanese cities was not a problem. It was simply 'city music'. The real task lay in putting the latest technology to use in order to tackle the discordant sounds of transport, civil engineering, and construction techniques—the hell of noise created by modern machinery. The debates during the 1920s and 1930s were certainly lively and important, yet they served to restrict the noise problem to a mechanical, industrial, and scientific one.

### **Reconstruction and the re-definition of the problem**

By the late 1930s, domestic concerns about noise came to seem luxurious anyway. Many of the reports and articles drawn up by research groups founded in the 1930s were destroyed during the bombing of Japan's major cities and, from the late 1930s onwards, scientists, acousticians, and experts on noise and sound were drafted to work with the military, particularly the navy (Hirokawa 1953, 203). In any case, given the stringent living conditions in post-1945 Japan, noise was the least of the problems facing the Japanese people. The need to demolish ruins, rebuild and reconstruct infrastructure, homes, and livelihoods, must have made both urban and rural areas increasingly loud. Yet, the problems with terminology and the pre-war process of addressing city noise as a technical and scientific issue that required expert knowledge to understand, treat, and control had in many ways removed the problem of the noise of everyday life from the realm of social and scientific debate. And the re-emergence of debates over city noise in the late 1940s remained focussed on the environmental impact of industrial noise, construction noise, and traffic noise (Koyasu 1987, 223–234). Some echoes of the early twentieth-century debates remained, however. Not long after the formal end of the US-led occupation in 1952, the noise problem again became linked with doubts over the suitability of the Japanese people for modernity, as the pressing need to overcome the social, political, and cultural baggage of the years of militarism tapped into Meiji era debates about cultural and moral reform.

In 1953, the chief of the Acoustical Society of Japan, Koji Sato, set the problem of urban noise within wider issues of the modern development of the country and returned to the theme of comparison with the West. In 1952, Sato had spent three months travelling around Europe and the US. On boarding an aeroplane in Tokyo for the first time since the war, he immediately appreciated the fact that the soundproofing inside the plane had improved dramatically. Nevertheless, Japanese people's attitude to noise had not.

According to Sato, the waiting room at the gate in Haneda airport was ‘always crowded and so very noisy’, in stark contrast to the US and Europe where waiting rooms were bigger but much quieter. In the West, the technology was also better. Although there were constant announcements over loudspeakers about flights, speaker volume was not too loud, and the sound quality was decent (Sato 1953, 206). On arriving in Europe, Sato experienced an ‘eerie, weird silence’ that would unsettle anyone used to the cacophony of Tokyo. The streets were quiet. The noise of three-wheelers or motorbikes was negligible. In Europe and the US, buses were large and sturdy, emitting far less noise than the diesel-powered Japanese type, and the roads were all paved. Trains and trams were also quiet. Indeed, the whole experience of public transport was much quieter than in Japan. But this tranquillity had implications for the unsuspecting Japanese tourist similar to the concern over quieting traffic noise in Osaka back in the 1920s. Sato claimed that trains ‘make no sound when they pull into a station. They also make no noise as they leave the platform, so there is the fear of missing the train’ (Sato 1953, 206). He complained that, at some point without knowing it, the Japanese had become accustomed to diving out of the way of traffic on hearing a horn. The concern for physical safety shown by Mr. Oda in 1920s Osaka had clearly been successful. Yet, in Europe, the quiet made it difficult for Sato to cross the road, because it lulled him into a false sense of security. Unless there was a danger to life, car drivers did not blast their horns: ‘I would step out into the road, only to jump back as lots of cars came past in front of me’. In Japan, Sato argued, cars constantly sounded their horns to shoo people out of the way. The problem of urban noise, when prioritised as a problem of traffic and modern technology, appeared to have been successfully dealt with in Europe and the US.

Sato, probably unconsciously, harked back to the debates over ‘city noise’ versus ‘city music’ that had come to the fore in the 1930s.<sup>7</sup> He noted that in the West, there was no noise spilling out from radios, gramophones, or record players. Dogs and domestic animals were kept inside the house and there were no advertising announcements. These were the sounds of everyday life disregarded in the 1930s in favour of scientific solutions to the noise made by transport, production, and construction. Solutions to the pre-war urban noise problem required the involvement of experts, and there was little, if anything, the people themselves could do. In the 1950s though, debates began to incorporate the noise made by the people—what some had referred to in the 1930s as ‘city music’. Sato saw that war damage in Japan’s major cities provided a useful opportunity for the development of sound prevention technology. He noted the views of his American counterpart, acoustical physicist Vern Knudsen, founder of the Acoustical Society of America, that because of the lack of war damage the US lagged behind European countries in the implementation of the latest noise reduction technology.<sup>8</sup> Sato himself was surprised during his trip to the US to find instruments from the 1930s still being used. He stressed the opportunity for Japan to follow Europe and eliminate noise at its roots by incorporating research on sound into building

regulations as the country was being rapidly rebuilt. Sato argued, as had the organisers of the Osaka exhibition of 1930 and the debates and discussions of the early twentieth century, that technical control over noise would help bring Japan into line with the more modern and developed countries of Europe and the US. At the same time though, he shifted the focus of the debate towards the sounds of everyday life and the people and goods that made them, rather than traffic, transport, and industry.

Just a year later, in the same journal, Kaname Kurihara rejected the development of expert knowledge and better use of new technology as the best and only solution to the noise problem, and also shifted the discussion of city noise away from industry and traffic. Kurihara urged a change in the social and cultural, rather than technological approach to the problem of sound. He believed that noise needed to be discussed as both an individual and a social problem. It was subjective. Noise affected each person differently. In contrast to the efforts of scientists and experts working in the 1920s and 1930s, Kurihara believed that the Japanese approached noise as a subjective issue that required an individual solution. He estimated that half of the 'random noise' problem was caused by the behaviour of the mass of ordinary people rather than by industry. He believed that the 'half-hearted' sound prevention measures being put in place in Tokyo did at least acknowledge that sound could be a social problem, and he recognised that framing the problem was difficult: was it a 'safety issue, a health issue, a problem of enlightenment, or punishment?' (Kurihara 1954, 159). Yet, whatever the difficulties in defining the problem of noise—understanding it as a purely technological one or one that could be solved by simply legislating against certain sounds—missed the point.

In the 1920s, the petition against the 'hell of noise' in Sakaisuji had argued that it was an obstruction, blocking work, destroying the health of those who were sick or injured, and reducing the positive effects of modern technology. Noise was not a symbol of modernity or a consequence of it, but a hindrance in achieving it made worse by the Japanese peoples' supposed lack of civilisation. Writing a quarter of a century later, Kurihara agreed, and he claimed that the Japanese people were 'immature and sluggish' in their understanding and approach to the problem of noise (Kurihara 1954). Although he did not reference the debates of the 1920s, and, like Sato, may have been unaware of them, he believed that blaming the technology that produced noise—or a lack of technological progress in insulating against it—disavowed a deeper problem with the nature of noise itself and the lack of 'enlightenment' of the Japanese people. Noise was a thoroughly modern problem that needed to be confronted in the same way as certain communicable diseases (Kurihara 1954). Given that scientists working on research into sound looked at how to suppress or reduce its transmission, Kurihara saw that there was already a connection between their work and that of the doctors who sought to prevent and understand the transmission of disease. By making noise an issue of public sanitation (*souon no koushu eisei* 騒音の公衆衛生), means of prevention, legal protections, and prosecutions would naturally emerge—as had

been the case with other industrial diseases. But this required a change in the way noise was thought about. In post-war Japan, Kurihara wanted to promote a discourse that treated noise as an infectious disease. He acknowledged the need for a legal and scientific definition and agreement on the technical measurement of it, but he also insisted that people making random noise should be treated and thought about in the same way as the carrier of an infectious disease: a carrier who did not know they had the disease but happily moved through the city spreading it.

In the same way that public health experts treated infectious disease with agreed definitions and measurements, acousticians and specialists in noise control would be able to carry out activities to trace the source of a sound and prevent it at its root, or at least maintain its outburst at the lowest level. Like Sato, Kurihara shifted the debate about urban noise away from the noise of transport, industrial production, and the noise of modern machinery to the noise made by the people going about their everyday lives. In the latter part of the nineteenth century, Kurihara argued, it was strange to think that a social understanding of hygiene would become a norm for the masses and achieve significant success in preventing disease. Yet, the concept of public hygiene quickly emerged to construct disease as both a national, public problem and an individual one (Kurihara, 1954). Although Kurihara chose not to reference him, Shimpei Goto's writings on *The Principles of National Hygiene*, published in 1889, were central to shaping hygiene as the hygiene of the nation-state (*kokka*). Yet, while Goto was the first to translate the concept using the compound *eisei* (衛生), his ideas were deeply tied to the context of imperial nationalism and the nation-state (*kokka*) as a representation and sublimation of the human body. In the context of early twentieth-century Japanese nationalism, hygiene was an 'evolutionary force' that could act on the nation as a whole and 'manifest itself in the change from ignorance to enlightenment, from shamanistic superstition to sanitation, from treatment to prevention, from prolonging life to enriching life, and from savage to civilised' (Chung 2014, 444–445). The body of the individual and the national body could be acted upon at the same time through the concept and practical application of public hygiene. Kurihara was writing about urban noise in the post-war period when imperial nationalism and the concept of the national body (*kokutai*) had been largely discredited and rejected during defeat and occupation. Although the 1950s was a period when concepts and ideas formed in the 1920s and 1930s were being recast in the context of 'peace and democracy' (Dower 1999), the goal of achieving a western standard of living through rapid economic growth still lent itself to appeals for the enlightenment of the people by the state.

Because the importance of public sanitation was common and deeply ingrained in Japanese society, Kurihara believed that noise prevention—and punishment in case of infringement—would happen logically. In this scenario, scientists, engineers, and experts in acoustics would take the place of doctors and professors of public health and, as Kurihara put it, 'just as we have infectious diseases determined by law, we could create legal (and hence

illegal) sounds' (1954, 159). If noise was better understood from a third-person perspective—that of the victim—and analysed through the analogy of the pathogen, it could be more easily tackled. Unlike in the 1920s, the urban noise problem in post-war Japan was slowly becoming understood as produced, and made worse, by human activity rather than technology—traffic horns, blaring radios, musical instruments, gramophones, dogs barking through the night, and so on. Here the problem went right back to the 1930s discussion of 'city music' versus 'city noise' and the consequent definition by scientists, because, Kurihara argued, most people had come to think of this kind of noise as the sonic expression of an exciting modern 'city music' (1954, 159).

The early twentieth-century view of the people as too backward to understand or tackle the problem of noise lingered though. Kurihara's practical solution echoed the pre-war Japanese state's, and he complained that the problem with the Japanese people was that they were simply 'selfish, barbaric, and anti-social'. In this context, appealing to the idea of public morality as the key to noise prevention would be 'useless and abstract' (Kurihara 1954, 159). Lack of awareness and concern about noise was due to the very low level of social morals amongst the Japanese. To fix this, Kurihara urged a programme of, what he called, 'public enlightenment' linked to the long-standing, and more easily understood, notion of public hygiene. Rather than explaining to the people how many phon a certain sound was, what caused the sound, or what the physiological effects were, the Japanese should be taught that noise is the same as disease, caused and transmitted by humans, and then given the tools to reflect on whether they themselves were a disease carrier. As Kurihara noted, with a physical disease, the person transmitting it usually suffers physically. With 'random noise' though, the person making it was usually not suffering from it; indeed, they were quite often enjoying it. Kurihara was confident that once people understood that they were all carriers, or potential carriers, of an easily transmissible disease, they would willingly go and seek out experts for advice and help (1954, 159). The difficulty with this solution was that the appeals to unite individual and national bodies for the greater social good had ceased to have the influence and political impetus they had in the early twentieth century when hygiene became central to everyday life in Japan's increasingly crowded urban spaces. At the same time, the dominance of experts in the pre-war era had rendered the types of urban noise both Sato and Kurihara discussed as having nothing to do with the people themselves.

By the 1950s then, the problem of urban noise had re-emerged within the parameters of earlier discussions that restricted the definition, control over and solution to experts, and pressed the need for the enlightenment of the Japanese people. The issue of urban noise and rapid economic growth again allowed for comparisons between Japan and a West that was more civilised because it was quieter and quieter because it was more civilised. But, by the middle of that decade, the complexities of the definition that Hirose had touched on in the 1930s were back. Distinguishing between 'city music' and

‘city noise’ had been a job for the experts in the 1920s and 1930s as they developed technological solutions to the problem of the changing sonic ecology of Japan’s urban spaces. But, by the 1950s, the onus was on individuals within society to become aware of their own contribution to the problem and its solution within a renewed sense of national belonging. Although, like earlier commentators, both Sato and Kurihara were concerned that the Japanese people lacked the necessary civilisation to understand and deal with the issue of urban noise, they both saw better education alongside technological transformation as essential and began a shift in the understanding of ‘urban noise’ that would become fundamental to the recognition of the loudness of Japanese cities by the 1980s.

## **Conclusion**

By 1981, noise was ‘the most annoying single environmental problem’ in the world (Alexandre and Barde 1981, 166). That year, the OECD noted that in its 24 member countries, total noise emitted, or ‘noise energy’, had doubled since 1960. Over this 20-year period, according to the report, rapid urbanisation, increased personal mobility, and high levels of industrial activity made the use of noisy vehicles and mechanical equipment widespread. In many countries, the noise of everyday life was coming to be seen, by the public at least, as a significant environmental problem. Opinion polls taken by the Japan Environment Agency mirrored findings in France and elsewhere—that noise had become a more serious concern for its citizens than air pollution.

In Japan, large-scale human tragedies, such as those at Minamata and Yokaichi, focused activists and eventually government attention on the pressing need to clean up the environment. By the early 1970s, Tokyo and the Japanese archipelago had become infamous, but ideal, case studies for an increasingly global environmental movement (George 2001; Avenell 2017). In the early 1950s, standards had been set for the measurement of noise, and in 1955 some soundproofing of schools and hospitals was undertaken by the government; yet, until the 1970s, there were few national guidelines for dealing with noise as pollution. Between 1971 and 1975, the Environmental Protection Agency (EPA established in 1971) set guidelines and standards for road traffic, high-speed train lines, and aircraft noise (Igarashi 1993). The number of original, academic papers published on noise more than doubled, and in 1977, the Japanese Environmental Disputes Coordination Commission began to treat noise separately from industrial pollution. Methods of research and data gathering dealing with sound and sound technology still varied between different cities or regions, and this research was often carried out by private companies within very diverse academic disciplines (Hirokawa 1979). Nevertheless, because noise became uncoupled from the problem of industrial pollution, and as rising population densities changed the sonic ecology of Japan’s post-war cities, noise gradually became associated with daily life. Thanks to this increasing attention, by the time the OECD published its report, 32.5% of the environmental pollution complaints logged by local

authorities throughout Japan concerned noise. In urban conglomerations, such as Tokyo and Kanagawa prefecture, noise grew to account for over half of all pollution complaints (Japan Environment Agency 1983). Most of these complaints related to the noise of the neighbourhood.

In the mid-1980s, the Institute of Kanda Soundscape Studies began to explore the ways in which the perception of the soundscape of Kanda in Tokyo had changed in the period after 1945. Founded by Keiko Torigoe, who was deeply involved in the activities of R. Murray Schaffer's World Soundscape Project and the translator of his book *Soundscape: Our Sonic Environment and the Tuning of the World*, the institute asked senior citizens to describe the sounds they most remembered and associated with the city. The first noted change followed the Great Kanto earthquake of 1923 when the city was rebuilt as a 'modern metropolis'; the development of department stores, the growth of traffic, and an influx of people from the countryside significantly altered the urban landscape and the volume and nature of urban sound. Rapid urbanisation, increased personal mobility, and high levels of industrial activity made the use of noisy vehicles and mechanical equipment widespread and brought a gradual recognition that noise was a problem. As is clear from this chapter, this period saw the beginnings of attempts at defining and dealing with urban noise. In Osaka, the petitioning of local authorities, the organisation of museum exhibitions, and discussions in newspaper articles raised awareness of the problems caused by the changing sonic ecology of the city. The discussions and debates in the media and amongst the experts did not label noise as a necessarily negative result of the process of modernity. Rather they established noise as a problem that highlighted the lack of civilisation of the Japanese people themselves. It could best be solved through the specialist knowledge of scientists and engineers and, in any case, the noise of everyday life in the city was not something that concerned the people themselves.

This changed post-war. Writing in the 1950s, commentators such as Sato and Kurihara were shifting their focus to the noise of people going about their everyday lives and, for most of the respondents to Torigoe's survey, it was during the late 1950s and early 1960s, the period of reconstruction and rebuilding leading up to Tokyo's hosting of the Olympic Games in 1964, that the contemporary Kanda soundscape—traffic noise, public address systems, electric machinery, and more—originated (Hiramatsu 1993, 135).<sup>9</sup> The population increased, entertainment venues thrived, and a popular mass consumer culture flourished. The sonic ecology of Japan was rapidly transformed by increasing traffic, individual mobility, and consumption.<sup>10</sup> But, even during the Tokyo Olympics, as Japan prepared to display to the world its unique combination of 'Western spirit, Eastern Beauty', the problem of urban noise was discussed in terms of the indifferent, irrational, and barbarous behaviour of the masses.<sup>11</sup> The authorities and experts continued to focus their attention on the noise of transportation and industrial production until rapid economic growth came to an end in the early 1970s; and, with the cities yet again lively and over-crowded symbols of modernity, the redefinition of 'city music'

as ‘city noise’, with all the implications for urban anomie that that implies, allowed the Japanese to finally appear well and truly ‘pickled in noise’.

## Notes

- 1 David Novak makes this assertion in his excellent entry on ‘Noise’ in *Keywords in Sound*. I translate the notion of ‘sound-saturated’ as ‘pickled in’ here as it seems closer to Nakajima’s playful if plaintive tone in this instance.
- 2 See Jacobwitz (2016) for an insightful account of how ambiguous, and indeed frightening, the appearance of new technologies of sound such as telegraph poles could be in this context. Kerim Yasar (2018) provides an outline of the way technologies of sound like the radio, telephone, and phonograph came to mediate everyday sound and bolster the creation of the modern nation.
- 3 For an outline of the concept of sonic ecology see Atkinson (2007).
- 4 It is difficult to know whether Mr Victim (clearly a pseudonym) was a westerner resident in Japan or not. The Japan Times was established in the late 1890s by Motosada Zumoto as an English language newspaper that would allow the Japanese to read about and discuss current events in English and participate in the international community.
- 5 Watanabe (2013) discusses one example from the early twentieth century when, although the state’s agronomic programmes had succeeded in producing bumper crops across one particular region, the pollution of farmland in one area actually led to depleted harvests. There were reports of a growing suspicion of science amongst villagers, most of whom, because of the inability of agronomists to offer a solution, had ‘lost faith in technicians’ (see pp. 80–81).
- 6 See also, in English, <https://acoustics.jp/en/overview/> (last accessed 27 January 2021). Fujiwara’s study is reprinted in Koyama (1973).
- 7 It is not clear whether Sato had access to, or knowledge of the debates that took place in the 1930s as discussed above.
- 8 For the importance of Vern Knudsen to the battle against noise in the US see Thompson (2002).
- 9 The Kanda institute was the forerunner of The Soundscape Association of Japan.
- 10 See Seidensticker (1991) for an insightful and highly readable outline of the post-earthquake reconstruction. For an account of the re-construction of Tokyo as a “dream modern city” in the run up to the Tokyo Olympics see Smith (2018).
- 11 Even Shinichi Sueoka ends his quite recent (2000) article on the history of noise regulation expressing his doubts that Japan has achieved the goal of the first anti-noise regulation in 1889: preserving the peace and quiet of the night and creating a ‘modern state that is nothing to be embarrassed about’ (2000, 214).

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