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# “The City Of Din”: Decibels, Noise, and Neighbors in the Netherlands, 1910–1980

*By Karin Bijsterveld\**

## ABSTRACT

Science and technology have played a crucial role in regulating problems resulting from urban overcrowding. In the twentieth century, the decibel became a major factor in controlling, for instance, urban traffic noise in the Netherlands. “The city of din” led to the creation of the portable noise meter to measure decibels, but the urban context also set limits to its utility in noise conflicts between neighbors. Regarding neighborly noise, the trust in numbers failed to be productive. Legislation, based on objective noise levels, aimed at regulating disturbance from neighbors was not realized in any comprehensive manner, due to changing class relations and the increasing recognition of both the subjectivity of noise and the right to make noise in the privacy of one’s own home.

## INTRODUCTION

In the first half of the twentieth century, people in western Europe and North America showed a mounting interest in the problem of noise. Intellectuals, physicians, scientists, engineers, and other concerned citizens founded noise abatement societies, organized antinoise campaigns, and published pamphlets and essays about noise. Hundreds of articles in the popular press featured the search for silence. The various campaigns and publications focused on the city. One of the problems addressed was the noise nuisance coming from neighbors and its relation to the introduction of new technologies such as the gramophone and the radio.

The noisy neighbor was hardly a new phenomenon. Local ordinances aimed at regulating noise, including that of next door’s crowing cocks and barking dogs, date back to medieval times—and some even to antiquity.<sup>1</sup> However, it was the mechanical age that set the stage for gramophones, radios, hi-fi stereos, and other kinds of electric devices that radically changed the nature of the sounds produced by neighbors. It also triggered new public debates on the ways in which acoustic privacy should be or could

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<sup>1</sup> Raymond Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Rochester, Vt.: Destiny Books, 1994), 190.

be secured. In such debates, a wide range of issues directly related to city life and scientific and technological developments converged.

Science and technology have played crucial roles in regulating and resolving the potential conflicts and problems resulting from urban overcrowding. In late-nineteenth-century Paris, for instance, the science of the “germ” helped legitimize formerly inconceivable interventions in private homes that were aimed at preventing epidemics and securing public health.<sup>2</sup> In twentieth-century urban traffic control, the responsibility for safely and efficiently regulating enormous flows of citizens through a limited set of streets became largely delegated to machines such as traffic lights. Moreover, all kinds of science-based criteria, such as blood alcohol level and maximum speed, have objectified norms of behavior, in cities and elsewhere. In a more general sense, this kind of “trust in numbers” within a “culture of control”—which in some urban contexts has reached sheer perfection—has been a major concern in the history of science and technology.<sup>3</sup>

This paper focuses on a characteristic urban conflict in which our reliance on objective scientific standards failed to be productive: the case of domestic, or neighborly, noise. Regarding this issue, our confidence in numbers and technology has *not* been rewarded. Even though the decibel became a major factor in measuring and controlling urban traffic noise, decibel- and noise level-based legislation aimed at regulating disturbance from neighbors has not been realized in any comprehensive manner. A careful exploration of this phenomenon, I argue in this paper, will inform our understanding of the relationship between science and city life as much as the studying of cases in which the creation and application of objective criteria in fact succeeded.

More specifically, this paper aims to understand why Dutch attempts to solve controversies over neighborly noise on the basis of scientific or technology-related standards failed. In the mid-1970s, the Dutch government expressed its frustration with the fact that it was impossible to capture problems associated with individual cases of noise nuisance or neighborly noise “inside a legislative system.”<sup>4</sup> In the mid-1980s, local police needed to intervene about 70,000 times in neighborly noise disputes, mainly in response to noise produced with the aid of modern technical devices.<sup>5</sup> In the Netherlands today, nearly one out of three citizens complains of noise produced by neighbors.<sup>6</sup> The country’s Noise Abatement Act, however, does not encompass the noisy behavior of neighbors. In 1979, when the act went into effect, the government chose instead to address the issue of neighborly noise by subsidizing a huge public information campaign, titled “Let’s Be Gentle with Each Other.”

This paper understands this policy to be the result of three long-term developments that all started in the first half of the twentieth century: changing class relations, the increasing recognition of the subjectivity of sound perception, and the recognition of

<sup>2</sup> Andrew R. Aisenberg, *Contagion: Disease, Government, and the “Social Question” in Nineteenth-Century France* (Stanford: Stanford Univ. Press, 1999).

<sup>3</sup> Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton Univ. Press, 1995); and Miriam E. Levin, ed., *Cultures of Control* (Amsterdam: Harwood Academic Publishers, 2000).

<sup>4</sup> *The Soft Sell: Making Noise a Public Campaign* (Amsterdam: Instituut voor Sociale Kommunikatie, [1979]), 16.

<sup>5</sup> J. A. van Rossum, J. Tellinga, and P. Bertholet, *Burenlawaaï - een onderzoek naar klachten over burenlawaai* (The Hague: Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer, 1988), 29–30.

<sup>6</sup> *Statistisch Jaarboek 1994* (Voorburg and Heerlen: Centraal Bureau voor de Statistiek, 1994), 91.

the right to make noise at home. All three trends somehow prevented neighborly noise from being regulated by technology and standardized scientific measurement. Before elaborating on these trends I will provide a context for the rise of the public debate on neighborly noise by focusing on the changing sound environment and noise awareness in early-twentieth-century cities.

### THE WORLD OF SOUND IN CITY LIFE

In the first half of the twentieth century, the world of sound in Western cities was a world of paradox. Talkies, gramophones, radios, and telephones offered people's ears an exciting new array of sounds.<sup>7</sup> Yet the ways in which those inventions were used could deafen those very same ears—at least so people said.

The paradox itself may be one of the reasons why noise from neighbors became an issue of concern for Dutch citizens in the years after 1910. People wanted, for instance, to be able to hear the party with whom they were speaking by telephone but had trouble doing so because of the noise coming from devices their neighbors were using at that very moment. They wanted to listen to their radio, but some nearby electric machinery interfered with proper reception. They wanted to talk to each other, but people shouting into their telephones prevented them from doing so.<sup>8</sup>

Another change relevant to the genesis of neighborly noise as a public problem was the rise of noise abatement in western Europe and North America in general. From the late nineteenth century onward, intellectuals increasingly published on noise. They described the sounds of the new mechanical age, which varied from the shriek of the locomotives to the shrilling of gramophones to the roaring of automobiles, as most nerve-racking. Within a context of general anxiety about the growing number of urban sensory experiences, the resulting nervousness of city dwellers, and the chaos and accidents caused by city traffic, two waves of noise abatement campaigns swept western Europe and North America—the first between 1906 and 1914, the second between 1929 and 1938. Since making noise was thought of as barbarian, uncivilized, anti-intellectual, and disruptive behavior—in short, as a lack of self-control—public education geared toward a “noise etiquette” was seen as the ultimate solution for restoring silence. At first, intellectuals and students were understood to be the ones suffering most from noise, but subsequently the health and work output of all citizens came to be seen as at risk. This change did not, however, alter the conceptualization of noise as emanating from a lack of manners. Despite the proposal and implementation of many practical measures, such as new pavements, new transportation facilities, new city plans, and a ban on the use of the car horn at night, the need for public education continued to be seen as the alpha and omega of noise abatement.<sup>9</sup> In New York, for instance, the Noise Abatement Commission proudly claimed in its first report of 1930 that it had successfully asked “the radio stations of New York City to aid us in a campaign to educate radio listeners in noise etiquette.” Each night at 10:30,

<sup>7</sup> *Noise Abatement Exhibition* (London: Anti-Noise League, 1935), 65.

<sup>8</sup> A. M. N. Verberne, “‘Een vergunning onder voorwaarden’: Hinderwet en leefklimaat in Tilburg, 1875–1937,” (master's thesis, Katholieke Universiteit Brabant, Tilburg, 1993), 44, 48, 52; “‘Men spreke duidelijk . . .,’” *De Boerhoorn* 3 (1999): 24.

<sup>9</sup> Karin Bijsterveld, “The Diabolical Symphony of the Mechanical Age: Technology and Symbolism of Sound in European and North American Noise Abatement Campaigns, 1900–40,” *Social Studies of Science* 31 (2001): 37–70.

stations asked listeners to turn down their loudspeakers “as an act of good sportsmanship.”<sup>10</sup> According to a noise survey organized by the same commission and filled out by more than 11,000 city residents, radio was third on the list of the most reported sources of annoyance. (Only the noises produced by traffic were seen as worse.)<sup>11</sup> As one of the press responses to the commission’s report said, something had “to be done about the radio corsair who forgets the health, the privacy and the sanity of all the rest of the world in his own blind and crazy devotion to the metallic blatancies of the horn.” Exacerbating the problem was the growing practice of listening to the radio while engaged in other activities (rather than just sitting down to listen), a practice already quite common in the United States by the early thirties, as Susan J. Douglas has shown.<sup>12</sup> That meant more and longer periods of radio noise. Neighbors, so the campaigns indicated, were frequently forced to listen in, and this did not necessarily please them.

That many people saw the city as the main locus of such nuisances is understandable. In densely populated areas, the sound of mechanical devices could be heard all over. Yet as early as 1908 the German philosopher and physician Theodor Lessing suggested it was possible to run into the sound of a gramophone in a remote valley of the Alps.<sup>13</sup> Therefore it was not exclusively the spread of gramophones and radios in cities that caused the uproar over noise from neighbors. Nor was the loudness of mechanical devices the sole reason for complaints. As Emily Thompson has claimed, it was the newness of particular sounds, even more than their loudness, that prompted citizens to action.<sup>14</sup>

Several other factors, characteristic of urban areas, likewise contributed to the annoyance new technologies could create. First, as Alain Corbin has made clear for France, late-nineteenth-century cities displayed a remarkable de-standardization of the rhythm of everyday life. From the 1860s onward, city dwellers started to complain of the ringing of bells in the early morning because of “a greater determination to lay claim to one’s morning sleep.” Developments such as street lighting, “the circulation of elites within the town,” and “the novel presence of women in public space together produced a gradual modification in nocturnal behavior. An enhanced desire for individual liberty prompted challenges to standardized rhythms.”<sup>15</sup> Such a desire led to the protests against bell ringing and also accounts for the increasing public commotion over neighborly noise.

Second, the general focus on the significance of hygiene for people’s health brought not only fresh air into homes but noise as well. “Within the last quarter of the century,” the British surgeon Dan McKenzie suggested in *The City of Din* (1916), people had been confronted with “a triumphant crusade in favor of the open window.” Tragically,

<sup>10</sup> Edward F. Brown, E. B. Dennis Jr., Jean Henry et al., eds., *City Noise: The Report of the Commission Appointed by Dr. Shirley W. Wynne, Commissioner of Health, to Study Noise in New York City and to Develop Means of Abating It* (New York: Noise Abatement Commission, Department of Health, 1930), 55.

<sup>11</sup> *Ibid.*, 27.

<sup>12</sup> Susan J. Douglas, *Listening In: Radio and the American Imagination* (New York: Times Books, 1999), 84.

<sup>13</sup> Theodor Lessing, *Der Lärm, Eine Kampschrift gegen die Geräusche unseres Lebens* (Wiesbaden: Verlag von J.F. Bergmann, 1908), 15.

<sup>14</sup> Emily Thompson, *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900–1933* (Cambridge: MIT, 2002).

<sup>15</sup> Alain Corbin, *Village Bells: Sound and Meaning in the Nineteenth-Century French Countryside* (Columbia: Columbia Univ. Press, 1998), 302.

however, “in noisy streets sound cannot be kept out if the windows are open.”<sup>16</sup> Moreover, the same quest for hygiene led to new sanitary and heating facilities; newly installed plumbing and heating systems transmitted sound to every corner of an apartment building. A desire for better hygiene also changed the room interiors, with smooth surfaces and floors, simple furniture, and less decoration—all of which had surprisingly negative acoustic consequences. In the words of F. C. Bartlett, professor of experimental psychology at Cambridge, hygiene was “won at the cost of needless mental irritation.”<sup>17</sup>

Furthermore, the employment of reinforced concrete, many experts held, worsened the acoustic situation in private houses. “I regret to say,” McKenzie wrote, “that many modern houses, particularly those which are made into tenements or flats, are not nearly so well segregated from each other’s noises as the older houses are.”<sup>18</sup> In a reinforced concrete and iron framework building, Dutch engineers claimed, the vibration of mechanical moving power could easily manifest itself.<sup>19</sup> This was due not to the use of concrete per se but to the fact that buildings had become monolithic structures based on a single construction principle and no longer consisted of the variety of building materials found in older structures.<sup>20</sup>

Because of these social and technical changes, neighbors began to play a more audible role in the life of city dwellers. Dutch citizens who felt too bothered by their neighbors and wanted to do something about it found some legal recourse in local ordinances as well as in the Dutch Penal Code. Since 1881, the penal code had included two sections on disturbance. The most important one was section 431, which stipulated that it was illegal to disturb people’s sleep at night, be it through raising tumult that threatened the peace of one’s immediate neighbors or through disturbances that broke the quiet of a complete neighborhood. According to the section’s explanatory memorandum, the regulation was aimed not at noise caused by professionals who had to work at night nor people who attended balls and concerts, but rather at noise caused by people engaged in mischief. More specifically, the law sought to prevent yelling, cursing, and other rowdy behavior from intoxicated or overly excited people.<sup>21</sup>

The introduction of the gramophone and the radio in the first decades of the twentieth century created a new potential noise problem between neighbors, one that the existing legal framework in the Netherlands had trouble addressing effectively. In my discussion below, I focus on the debates on this new technological noise that took place in the city councils of eight Dutch cities.<sup>22</sup> It will become clear that it was far from easy to find common ground.

<sup>16</sup> Dan McKenzie, *The City of Din: A Tirade against Noise* (London: Adlard & Son, Bartholomew Press, 1916), 109–10.

<sup>17</sup> F. C. Bartlett, *The Problem of Noise* (Cambridge: Cambridge Univ. Press, 1934), 76–7.

<sup>18</sup> McKenzie, *City of Din* (cit. n. 16), 109.

<sup>19</sup> R. L. S. Schoemaker, “Het dempen van gevoels- en geluidstrillingen,” *Bouwbedrijf* 6 (1929): 275–6, on 275; “Beton en acoustiek,” *Bouwbedrijf* 6 (1929): 476.

<sup>20</sup> C. Zwikker, *Acoustische problemen bij de betonbouw: Voordracht, gehouden voor de Betonvereniging op 4 maart 1936 te 's-Gravenhage* (Delft: Geluidstichting, 1936).

<sup>21</sup> Willem Jacobus van Dam, *Burengerucht* ('s Hertogenbosch: W. C. van Heusden, 1888), 40–1.

<sup>22</sup> The cities are Rotterdam, The Hague, Leiden, Breda, Utrecht, Amsterdam, Maastricht, and Groningen. Their selection is partly based on cross-references. City councils that were faced with the issue of gramophone and radio noise commonly referred to debates or policies in other cities. Other selection criteria include geographic dispersal and size.

## DO NOT SILENCE THE INSTRUMENTS OF COMMON MEN

The gramophone came up for discussion in Dutch local politics as early as 1913 in Rotterdam. This port city had recently witnessed spectacular expansion; between 1869 and 1913 its population quadrupled.<sup>23</sup> According to the Rotterdam Committee of Penal Regulations, the time had come to ban the use of what they referred to as “mechanical musical instruments” in specific circumstances. Those circumstances included the use of loud gramophones on or near “homes, buildings, halls or structures, balconies, porches and open appurtenances that form part of them or belong to them, as well as on vessels lying by or near public quays.” Also included was the use of those devices *inside* homes, buildings, and so forth, in cases where the sound reached the outdoors through open doors, windows, or other openings.<sup>24</sup> The committee claimed that so many people made such “immoderate” use of the gramophone that neighbors who were forced to listen in “for hours” could barely stand the nuisance;<sup>25</sup> yet the committee also stressed that authorities should be hesitant about interfering with people’s activities at home. Hundreds of thousands of people lived in close proximity to each other, and they should impose a certain measure of self-restraint. When residents failed to do so, however, authorities needed to issue rules to ensure an orderly and undisturbed community life.

The committee’s proposal caused a heated debate in Rotterdam’s city council. Leftist council members and a few others completely opposed the new ordinance. Their main argument was that the gramophone—as a fairly inexpensive source of music—had become “the musical instrument” of the lower classes and that an exclusive ban on gramophone-induced noise would therefore hurt them in particular. One did not hear gramophones, a critic claimed, in the city’s upper-class districts. To underscore his point, he told an anecdote about a man from one of the poorer districts who won the lottery. “The first thing he did . . . was to buy a gramophone. Now the neighbors enjoy it so much [as well], that they put some money aside each week in order to be able to buy a new record for it.”<sup>26</sup> As another opponent of the proposed regulation put it, rather than driving a wedge between neighbors, the gramophone brought them together.<sup>27</sup>

Families also benefited, according to one of the more conservative council members:

I have been frequently pleased by the fact that such an inexpensive device can keep a family together, whereas its members might otherwise each do their own thing and probably be tempted to seek entertainment that is less appropriate, albeit less of a nuisance to neighbors.<sup>28</sup>

The same member also pointed out that although “the incessant audibility of gramophone sounds can be a great nuisance to many, . . . one can also be desperately

<sup>23</sup> Jan Bank and Maarten van Buuren, *1900: Hoogtij van burgerlijke cultuur* (The Hague: Sdu Uitgevers, 2000), 124–6.

<sup>24</sup> Municipal Archives (hereafter cited as MA) Rotterdam, Printed Papers 1913, no. 180, litt. b., Resolution Draft, Article 1.

<sup>25</sup> *Ibid.*, litt. a., 29 Dec. 1913.

<sup>26</sup> MA Rotterdam, Proceedings City Council Rotterdam, Session 26 Feb. 1914, 64–70, on 65.

<sup>27</sup> *Ibid.*, 69.

<sup>28</sup> *Ibid.*, 66.

bothered by lady singers, trombonists, pianists, cellists and any other 'ists.'” In a similar vein, leftist council members argued that it would be unfair to ban the loud noise produced by “phonographs” while allowing the sound of “maltreated” pianos and house organs, as well as the “miserable lamentations” of concertinas, to go unregulated.<sup>29</sup> Another council member also concluded that one should question the fairness of excluding “only one of the musical devices, almost invariably the gramophone, [while leaving] the generally more substantial nuisance of other instruments unregulated.”<sup>30</sup>

Most Rotterdam city council members agreed, however, that the “hobby” of those who put gramophones in front of open windows was a “debauchery.” They insisted that there was an essential difference between music made by musicians and music generated by a device. “[A]fter an hour’s practice flutists, oboists, and so on . . . feel a need to do something else, like smoking a cigar, talking to someone or devoting themselves to some other study. They get tired and stop playing and therefore they cause less hindrance, nuisance, harassment, and irritation.”<sup>31</sup> After a lengthy discussion, the city council passed the proposed ordinance with a vote of twenty-four to thirteen.<sup>32</sup> The ordinance gave local government the power to interfere in situations where people caused nuisance through loud gramophones. Subsequently, on the instruction of the provincial government, the city council had to put in the important restriction that police officers only had the right to enter a house against the will of the inhabitant when accompanied by high officials.<sup>33</sup> This restriction, though, did not change the basic concept of the ordinance.

The first attempt of Dutch local authorities, then, to solve the problem of gramophone noise—by differentiating between noise produced by indefatigable machines, thus *technology*, and noise produced by humans with limited energy—came to be accepted. The difficulty council members had in weighing the various pros and cons, however, highlights both the legal limits they had to reckon with and the resistance of those who considered it an elitist form of noise abatement. The conservative council members won out, but simple reference to “mischief,” as in section 431 of the Dutch Penal Code, was not enough anymore. Significantly, the council members representing the working-class conceptually carved out, so to speak, the right of workers to a “sound culture” of their own. The members did so by referring to the low price of the gramophone, by characterizing it as a “musical instrument for the masses,” and by creatively redefining “making noise” into “sharing music.” In addition, they reframed the “menace” at issue from noise that disturbed the peace of a neighborhood to the danger of depriving families of an artifact that could secure them from disintegration or from engaging in socially less desirable activities.

The argument that the gramophone was a typical working-class instrument was perhaps merely rhetorical. Yet, as long as there are no specific data on class-based differences in ownership of devices such as gramophones, the suggestion that they functioned as the musical instrument of the lower classes is best interpreted as an indication of the relative *worth* and *significance* of those instruments to the lower classes.

<sup>29</sup> *Ibid.*, 66, 65, 69.

<sup>30</sup> *Ibid.*, 66.

<sup>31</sup> *Ibid.*, 67.

<sup>32</sup> *Ibid.*, 70.

<sup>33</sup> MA Rotterdam, Proceedings City Council Rotterdam, Session 23 April 1914, 177–8.

In the 1920s and 1930s, the city councils of The Hague, Leiden, Breda, Utrecht, Amsterdam, Maastricht, and Groningen followed Rotterdam in taking measures against the noise generated by music devices, now inclusive of the radio.<sup>34</sup> In general, the more progressive council members, especially communists, social democrats, and left liberals, declared themselves to be against such measures, whereas the more conservative ones usually supported the new ordinances. The latter sought to ban the “stupid, machinelike” playing of records and radios for hours and hours without really listening.<sup>35</sup> Yet most of the left-oriented council members again and again stressed that it was not reasonable to limit the pleasures of the gramophone and the radio while allowing piano and organ players to annoy their neighbors endlessly. “It strikes me,” a communist Amsterdam council member said in 1929, “that every time a certain commodity becomes available to working-class people, effectively ending its monopoly in the hands of the bourgeoisie, measures are taken to limit the use of that new commodity.” He added that people who worked in shifts might not be off until late in the evening. Why should they not be allowed to enjoy the radio at night? In working-class areas, radio noise was not considered a problem at all, he and other council members stressed.<sup>36</sup> “When I go home,” the Amsterdam communist said, “I always enjoy being accompanied by music from the same radio station coming from every house of the street.”<sup>37</sup>

Although the progressives’ resistance to these restrictions on gramophones and radios did not result in rejection of the proposed ordinances, it led to changes in their formulation. In time, the grounds on which the loud playing of gramophones and radios could be legally punished became narrower. In The Hague (1927), Leiden (1928), Breda (1928), and Maastricht (1930), not the use itself, but only the “bothersome” use of these devices was subject to fines. In The Hague and Leiden, this applied to both inside and outside private homes, but in Breda only to noise that could be heard in the radio’s or gramophone’s immediate environment. In Maastricht, The Hague, and Groningen, the authorities explicitly wanted to regulate noise violations vis-à-vis neighbors and on public streets, such as those produced by shop owners and radio manufacturers who tried to sell their products too loudly. In narrow streets, this kind of noise often caused traffic jams because people stopped to listen. The authorities of Maastricht thought their right to interfere in cases where noise could only be heard in private places (such as the back of a house) questionable. They decided only to exclude troublesome noise from radios and other mechanical devices that could be heard on public streets and only after violators had received a warning.<sup>38</sup> Such deliberations

<sup>34</sup> MA The Hague, Printed Papers 1927, no. 365, “Wijziging Algemeene Politieverordening”; MA Leiden, Municipal Publications (*Gemeentebblad*) 1928, no. 21, “Verordening op het maken van Mechanische Muziek en Geluid”; MA Breda, Municipal Publications (*Gemeentebblad*) 1928, no. 458, “Verordening tot wering van hinder van geluidsinstrumenten”; MA Utrecht, Municipal Publications (*Gemeentebblad*) 1929, no. 1, “Verordening Straatpolitie, 11de wijziging (art. 56bis)”; MA Amsterdam, Archives Municipal Police 1814–1956 (1974), Archive no. 5225, Inventory no. 2224, “Herziening Algemeene Politieverordening,” art. 67A, 1931; MA Maastricht, Archives City Administration 1851–1969, no. 1.759.42, “Verordening tot wering van hinderlijke radio- en andere mechanische muziek,” 1 Aug. 1930; MA Groningen, Appendices Proceedings Municipal Council 1933, no. 203, “Voorstel (. . .) tot wijziging van het Reglement van Politie.”

<sup>35</sup> MA Breda, Proceedings City Council Breda, Session 4 Sept. 1928, 851.

<sup>36</sup> MA Amsterdam, Proceedings City Council Amsterdam, Session 10 Dec. 1929, 2:2759, 2:2751, 2:2754–5; Session 23 Oct. 1930, 2:1993–4.

<sup>37</sup> *Ibid.*, 2:2755.

<sup>38</sup> Committee of Penal Regulations to City Council, 6 June 1930, MA Maastricht, Archives City Administration 1851–1969, no. 1.759.42, “Verordeningen tot wering van hinderlijk geluid (1930–

demonstrate the increasing difficulty city governments experienced in finding legal grounds for intervention.

Around 1930, the city councils of Utrecht (1929), Amsterdam (1931), and Groningen (1933) decided to regulate not only the noise nuisance coming from devices such as the gramophone and the radio, but also that from musical instruments. Over the years, this became a common policy in Dutch towns and cities.<sup>39</sup> This signaled that it was no longer considered acceptable, as progressive council members had argued all along, to make a legal distinction between the musical “noise” associated with high culture and that associated with low culture. Apparently, the argument that those who practiced music got tired and had to stop making noise after some time lost its validity; or, put differently, the specific character of the sound-producing *technology* was no longer grounds on which to base criteria for banning noise from neighbors. Complaints about this very phenomenon, however, did not vanish. People still spoke of “radio din” and the “poisonous radio monster.”<sup>40</sup>

Remarkably, hardly any violations were recorded under the new ordinances. Although data on the actual functioning of the ordinances against noise have only been studied for the towns of Leiden and Breda, the sources suggest that at most five violations per year were recorded.<sup>41</sup> This perhaps means that the ordinances indeed prevented abuse of radios and gramophones, or that it was merely sufficient for policemen to mention the existence of the ordinances, as the city council of The Hague had hoped.<sup>42</sup> Another possibility is that this kind of noise was not such a large problem after all. This is unlikely, however, given the persistence of complaints.

Probably, the ordinances proved difficult to enforce. Some council members had feared this even before the ordinances had gone into effect, since it was far from clear how to decide whether any particular sound was “bothersome.”<sup>43</sup> In 1937, the government of the Province of North Brabant sent a letter to all the province’s mayors to call attention to “the manifold occurrence of annoying sounds,” including noise from musical instruments, loudspeakers, cars, and motorcycles. The letter urged local leadership to ensure that people adhered to the ordinances.<sup>44</sup> Three years later, in January 1940, the governor of North Brabant repeated the request, now extended to radio noise.<sup>45</sup> In response, Breda’s deputy police chief explained to the city leadership that in individual cases it was very difficult to decide whether noise had been audible only in the immediate environment of a radio or loudspeaker. He added that it might be

1937)”; MA Maastricht, “Verordening tot wering van hinderlijke radio- en andere mechanische muziek” (cit. n. 34).

<sup>39</sup> D. J. van Manen to Vereniging Nederlandse Gemeenten, 3 Jan. 1973, Archives Nederlandse Stichting Geluidshinder, Delft, File “Werkgroep Plaatselijke verordeningen.”

<sup>40</sup> A. C. van der Bijl Jr. to chief commissioner of police, 11 May 1936; W. J. Sjollema to chief commissioner of police, 16 July 1939; and J. van Beek to chief commissioner of police, 5 July 1937, MA Amsterdam, Archives Municipal Police 1814–1956 (1974), Archives no. 5225, Inventory no. 5688, Letters of Complaint.

<sup>41</sup> MA Leiden, “Verslagen omtrent den toestand van de gemeente Leiden,” 1929–1939; MA Breda, “Verslagen van den toestand der gemeente Breda,” 1929–1937.

<sup>42</sup> MA The Hague, Printed Papers 1927, no. 364, Explanatory Note.

<sup>43</sup> MA Amsterdam, Proceedings City Council Amsterdam, (Evening) Session 23 Oct. 1930, 2:2003; MA The Hague, Proceedings City Council The Hague, Session 11 July 1927, 480.

<sup>44</sup> Provincial executives North Brabant to the mayors of the Councils of North Brabant, 17 Nov. 1937, MA Breda, Inventory no. 1.759.4, 235/II.

<sup>45</sup> Provincial governor North Brabant to the mayors of North Brabant, 22 Jan. 1940, MA Breda, Inventory no. 1.759.4, 235/II.

a good idea to start reporting violations in “decibels,” even though that “would require the purchase of expensive instruments.”<sup>46</sup>

He may not have known that the use of noise meters in abating the noise of neighbors had already been discussed in Amsterdam, an issue I will address below in section five. Before doing so, however, it is important to pay attention to another development that complicated the control of noise from neighbors by means of legal regulations.

#### SUBJECTIVE REACTION AND OBJECTIVE MEASUREMENT

Shortly after sound—whether live or generated by electric devices—became legally understood in certain situations as noise nuisance, the very notion of noise itself began to be disputed in new ways. Scholarly studies from the mid- and late 1930s on the physiological and psychological responses to noise significantly contributed to such debates, turning noise nuisance into an even more complicated concept than before.

Anglo-American research from the late 1920s described the effects of noise in a straightforward manner. Most publications showed a faster breath and a raised systolic blood pressure in response to unexpected noise, “a lowering of efficiency in action and mental processes when noise is introduced,” and contended “that quiet surroundings shorten the period of recovery from nervous strain.”<sup>47</sup> Such difficulties were especially relevant to the neurotic city dwellers, the Noise Commission of London claimed, since “sleep is indispensable to the neurotic, who does the work of the world,” and since the most disturbing noises for people who wanted to sleep were sounds of the city. These included “unusual and sudden horns, exhausts, drills, vibrations, whistles, and milk can deliveries.”<sup>48</sup>

From the mid-thirties on, however, experts on psychoacoustics increasingly stressed that “reaction to noise is largely temperamental and varies greatly from person to person, and that for the same person it varies with the conditions under which the noise is heard.”<sup>49</sup> Everyday life had always shown that “some persons complain of noises which others find innocuous.”<sup>50</sup> Yet little was known about the conditions under which “some persons” felt disturbed by noise. In *The Problem of Noise*, the experimental psychologist F. C. Bartlett explicitly addressed this concern. He wanted to qualify the “the menace of noise.”<sup>51</sup> According to him, serious damage to hearing only occurred in special occupations, such as that of boilermakers. The various noises to which average citizens were exposed generally were not loud enough to impair their hearing. The physiological effects of noise other scientists had spoken of were “transient” and “normally pass away rapidly and completely.”<sup>52</sup> Bartlett similarly criticized the putative effect of sound on the performance of work. On the basis of his own and

<sup>46</sup> Deputy police chief to city leadership, 27 Jan. 1940, MA Breda, Inventory no. 1.759.4, 235/II.

<sup>47</sup> Roger W. Sherman, “Sound Insulation in Apartments,” *Architectural Forum* 53 (1930): 373–8, on 373. See also Donald A. Laird, “The Effects of Noise,” *Journal of the Acoustical Society of America* 2 (1930): 256–62; Donald A. Laird and Kenneth Coye, “Psychological Measurements of Annoyance as Related to Pitch and Loudness,” *Journal of the Acoustical Society of America* 1 (1929): 158–63.

<sup>48</sup> Brown et al., *City Noise* (cit. n. 10), 17, 106–7.

<sup>49</sup> A. H. Davis, *Noise* (London: Watts, 1937), 10.

<sup>50</sup> A. H. Davis, *Modern Acoustics* (London: G. Bell & Sons, 1934), 260.

<sup>51</sup> Bartlett, *Problem of Noise* (cit. n. 17), 1.

<sup>52</sup> *Ibid.*, 18.

others' experiments, he argued that what mattered was not the noise per se, but the noise in relation to the task. "On the whole the more the work puts a demand on the higher mental processes, the more disturbing is the noise likely to be."<sup>53</sup> Whether or not a sound became treated as a nuisance depended on the background against which the sound was experienced, its loudness, its ambiguity of direction, its (dis-) continuity, and its (non-) familiarity. Moreover, the "disturbing effects of noise are at their maximum for people who have to do mental work, but are for some reason bored, tired, forced into a job which is a bit too difficult for them or not quite difficult enough, or in which they are only moderately interested." Bartlett even suggested that the "complaint against noise is a sign, sometimes, of a deeper social distress."<sup>54</sup> As another expert recapitulated, "In general, when a break-down in health occurs under exposure to noise, there are other influences at work. The noise seems to act as a catalytic agent or accessory factor, thereby inducing or accentuating a nervous state."<sup>55</sup>

Such a subjectification or even pathologization of complaints about noise was new. Before, as discussed in section two, intellectuals in particular publicly underlined the need for silence. Their antinoise essays and pamphlets were rife with notions of a civilized battle against barbarous noise, of silence being distinguished and noise being brutal. Their campaigns pitted intellectuals against workers, or sensitive individuals against indifferent ones. The new psychoacoustic studies, however, challenged such views. Noise was not simply produced by "the other"; it was also a product of one's state of mind. Moreover, the new notion of the subjectivity of sound perception made it, again, increasingly difficult to decide which sounds could or could not be treated as a nuisance. If previously noise was mainly understood in terms of the nature, source, and range of sounds, now other factors were also seen as contributing to what constituted noise. These factors included the specific nature of tasks and the sound context in which they were performed, as well as the personality and mental state of the individual who perceived a particular sound as noise.

While psychologists and other experts underscored the subjectivity of sound perception, acoustic experts, by contrast, tried to objectify noise and establish quantitative criteria for it. In 1925, the decibel was established as a unit of loudness. Five years later, E. E. Free claimed that the "acoustic expert may be called upon to measure as noise anything from the neighbor's piano playing to the crash of thunder of [sic] the bang of a cannon."<sup>56</sup>

The audiometer, or subjective noise meter, measured the loudness of a particular sound by changing the intensity of a reference or test tone until it was "just audible in the presence of the noise."<sup>57</sup> The audiometer thus indicated the subjective deafening or masking effect of noise. A plain model of the acoustimeter, or objective noise meter (also called phonometer or just noise meter), consisted of a microphone, an amplifier, and an indicating meter. It measured loudness on a solely physical basis. Furthermore, it was possible "to attach to the simple instrument a suitable electric

<sup>53</sup> *Ibid.*, 39; see also 49.

<sup>54</sup> *Ibid.*, 53.

<sup>55</sup> N. W. McLachlan, *Noise: A Comprehensive Survey from Every Point of View* (Oxford: Oxford Univ. Press, 1935), 134.

<sup>56</sup> E. E. Free, "Practical Methods of Noise Measurement," *Journal of the Acoustical Society of America* 2 (1930): 18–29, on 19.

<sup>57</sup> *Ibid.*, 123.

network of condensers and inductances the transmission characteristics of which for different frequencies approximate the sensitivity of the human ear at the same frequencies.”<sup>58</sup>

Although audiometers were at first used in a strictly medical context to test hearing, the city turned out to be a crucial context for the development and application of audiometers and other measuring equipment. Portable audiometers, first produced in 1924,<sup>59</sup> and portable noise meters, which first came into use in 1926, were soon deployed for measuring city noise.<sup>60</sup> The initial surveys of city noise—conducted in London, Chicago, and New York—were published between 1926 and 1930. A New York survey, commissioned by the Noise Abatement Commission in 1929, was based on 10,000 observations gathered at ninety-seven outdoor locations. A crew on a specially equipped truck, which had an audiometer as well as a noise meter on board, traveled more than 500 miles in the city to collect the data.<sup>61</sup> With the survey, the commission sought not only to provide an overall impression of outdoor noise in numbers, but also to determine which sources contributed most to the din. Traffic topped the list.<sup>62</sup>

The New York survey revealed several problems with noise meters, though. City noise, for instance, consisted of an array of complex tones, but noise meters did not “sum up the components of a complex wave in the same manner as the ear in producing loudness. Hence, if two successive complex waves differ greatly in composition, the corresponding meter readings will not compare the waves as they are compared by the ear,” since the meter results depended on the single frequency characteristics of the integrating device. Yet since the New York City surveys showed that “the complex waves encountered in out-of-door noise surveys are usually of the same general composition,” different noise meter readings were thought to be comparable after all.<sup>63</sup> Another problem was that the noise meters could not exactly trace noises that fluctuated rapidly. Again, this was seen as a minor problem with respect to traffic and other city noise, for in a case such as the sound produced by a passing elevated train, “the maximum or minimum is sustained over a period of two to five seconds.”<sup>64</sup> The physicist Rogers H. Galt underlined that noise was not the same as annoyance. In determining whether a specific noise was a nuisance, concrete circumstances—such as the noise’s frequency of occurrence, its component frequencies, and its steadiness or intermittency, as well whether the noise was regarded as necessary or not—were significant, too.<sup>65</sup> Nevertheless, the often-cited figures, graphs, tables, and loudness levels came to be regarded increasingly as keys to determining the extent of the noise problem.

This influenced the approach to the problem of neighborly noise in two ways. First, extensive inquiries, partly based on architectural acoustics, addressed ways of excluding noise from buildings in terms of the decibel reduction involved. Through instruction pamphlets, lectures, exhibitions, papers, and books on “the silent house,”

<sup>58</sup> *Ibid.*, 27.

<sup>59</sup> Allard E. Dembe, *Occupation and Disease: How Social Factors Affect the Conception of Work-Related Disorders* (New Haven: Yale Univ. Press, 1996), 182.

<sup>60</sup> Free, “Practical Methods” (cit. n. 56), 21–2, 24.

<sup>61</sup> Brown et al., *City Noise* (cit. n. 10), 111, 119, 32.

<sup>62</sup> *Ibid.*, 112.

<sup>63</sup> Rogers H. Galt, “Results of Noise Surveys, Part I: Noise Out Of Doors,” *Journal of the Acoustical Society of America* 2 (1930): 30–58, on 33.

<sup>64</sup> *Ibid.*, 35.

<sup>65</sup> *Ibid.*, 58.

acoustical engineers explicated what “resonance” could do to buildings, what the differences were between airborne sound and structure-borne sound, and how such differences complicated the issue of noise abatement in buildings. The engineers spoke about criteria for sound reduction, sound transmission, sound absorption, and sound isolation, and about the materials fit for excluding airborne sound, for, so they said, the velocity of sound propagation was dependent on the specific gravity of materials. Moreover, acoustical engineers showed how cavity walls, double windows, specific doors, and intermissions in water pipes could diminish the noisiness of houses.<sup>66</sup> Eventually, in the Netherlands and elsewhere, such work led to the enactment of governmental norms concerning the required soundproofing of housing (see next section).

Second, the deployment of noise meters for sorting out conflicts between neighbors was discussed. Initially, though, Dutch acoustical engineers and police officials—like their counterparts abroad—used noise meters to measure city noise, especially traffic noise. In 1933, the conservative national daily *De Telegraaf* bolstered the noise abatement effort by inviting Harry P. Samuel, engineer of Western Electric Holland, to ascertain the nuisance of city noise with help of the “mechanical ear” or “silent witness” (the noise meter).<sup>67</sup> The newspaper featured an article about Samuel taking notes of “the wild movements of the needle” in the presence of leading police officials.<sup>68</sup> Other detailed articles discussed the “hunt for decibels” and the levels of street noise coming from streetcars, trains, motorcycles, lorries, carts, automobiles, and automobile horns elsewhere.<sup>69</sup>

In 1937, Amsterdam police chief Bakker and acoustical engineer professor Zwikker joined forces in the creation of a simple, low-cost, pocket-size noise meter to be used by police on the streets. Bakker had argued for introducing maximum noise limits, and after their legal formulation in the Motor and Cycle Regulation of 1937, he needed a noise meter. The available meters, however, were too large, too expensive, or too sensitive. Bakker felt they were quite suitable for use in a laboratory, but altogether impractical for use by police officers engaged in tracking down noise offenders on the city’s streets. He therefore asked Zwikker to develop a more practical device.<sup>70</sup> And so he did—or actually, one of his students, F. W. van Gelder, did. The Silenta could only measure noise levels above 80 dB, which was perfectly fine because the 1937 regulation had set a maximum of 95 dB for the noise coming from car horns and a maximum of 85 dB for noise produced by the engines of automobiles and motorcycles. The meter would eventually come to be accepted as a legally valid measurement device by the Dutch Supreme Court in 1939.<sup>71</sup>

<sup>66</sup> See, e.g., Davis, *Modern Acoustics* (cit. n. 50); *Das lärmfreie Wohnhaus* (Berlin: Verein Deutscher Ingenieure, 1934); A. Dubois, *Lawaai en lawaaibestrijding* (The Hague: Hinderwetvereniging/Geluidstichting, 1937).

<sup>67</sup> “Anti-Lawaai-Campagne van ‘De Telegraaf’: Geluidsmeter zal bewijzen,” *De Telegraaf*, 9 Oct. 1933, avondblad.

<sup>68</sup> “Eerste aanval in de binnenstad,” *De Telegraaf*, 10 Oct. 1933, avondblad.

<sup>69</sup> See, e.g., “Nieuw wapen tegen den demon van het lawaai,” *De Telegraaf*, 22 April 1937, avondblad.

<sup>70</sup> “De Geluidsmeter: Schrik der lawaaiige voertuigen,” *De Telegraaf*, 13 May 1937; Notice Police Chief Bakker, 18 Feb. 1937, File A.8 1937, MA Amsterdam, Archives Municipal Police no. 5225, Inventory no. 5688.

<sup>71</sup> C. Zwikker, “50 jaar akoestiek,” in *Najaarsvergadering 1971, Publikatie nr. 22* (Delft: Nederlands Akoestisch Genootschap, 1972), 74–100, on 92–3; idem, *Geluidmetingen, Publicatie no. 24* (Delft: Geluidstichting, [1939/1940]); and A. de Bruijn, *50 jaar akoestiek in Nederland* (Delft: Nederlands Akoestisch Genootschap, 1984), 50.

The Amsterdam Police adopted the Silenta, in 1937, as the “mechanical ear” of a newly established unit: the Silence Brigade. Under supervision of a police inspector, four policemen equipped with a motorcycle with sidecar were deployed to abate excessive city noise. Their main task was to reduce the noise from unnecessary, polytonal, or voluminous sound signals and badly constructed exhausts, as well as to educate drivers not to sound their horn when they approached an intersection.<sup>72</sup> On the basis of the Silenta’s readings, the officers could provide evidence to drivers of their offense. Moreover, whenever someone lodged a complaint on specific traffic noise, the brigade checked the complaint’s validity with help of the Silenta. When, for instance, a woman complained about a motorcyclist, she was told that the sound level of that particular motorcycle, a Harley Davidson, did not exceed 85 dB.<sup>73</sup> (In this case, other neighbors declared that the woman had made similar complaints about minor noises, and this substantially discredited her complaint.) In fact, after some time, the Silence Brigade discovered that automobiles and motorcycles only rarely exceeded the maximum sound level. It therefore proposed that the maximums be lowered to 85 dB and 75 dB. This proposal was partially implemented in 1939, when the Motor and Cycle Regulation fixed the new maximum levels at 90 and 80 dB respectively.<sup>74</sup>

According to Zwikker, the Silenta failed to be a commercial success because of the advent of the Second World War and the ensuing shortage of repair parts.<sup>75</sup> Whatever role the war might have played, the truth was that in the everyday practice of the Silence Brigade the device turned out to have certain drawbacks. It was common for members on patrol to stop a motorist as soon they heard a suspect noise. As journalists testified in their articles, the members of the Brigade had well-trained ears for potential offenders; on their motorbikes they skillfully—albeit not silently—chased rowdy suspects amid the chaos of traffic. After stopping a motorist, however, problems might arise. According to the regulation, the noise had to be measured in “open space” and at a distance of seven meters from the vehicle. Given the many narrow streets of Amsterdam, this did not prove to be very practical. As police reports, press accounts, and pictures suggest, the members of the Brigade first tended to deploy their Silenta on whatever street the driver was on. If the readings surpassed the maximum level, the officer then asked the motorist to follow him to an open space. In most open spaces, however, the almost ever-present wind proved a major factor, one that could dramatically affect the readings of the Silenta. Depending on the force and direction of the wind, the discrepancy between readings could be as much as 17 dB, which of course altogether disqualified the use of the noise meter in this context.<sup>76</sup>

Other clients who used the Silenta claimed similar difficulties. The device gave readings that tended to be quite different from those of a similar device produced by

<sup>72</sup> MA Amsterdam, Archives Municipal Police, Inventory no. 5688, File 1937, “Diversen,” “Communiqué.”

<sup>73</sup> Police Report, 30 Oct. 1937, File A. 8. 1937, MA Amsterdam, Archives Municipal Police no. 5225, Inventory no. 5688.

<sup>74</sup> Police Report, 29 April 1938, File A. 8 1938; Notice Police Chief Bakker, 15 Aug. 1938, File A. 8 1938; and Notice Police Chief Bakker, 14 June 1939, File A. 8 1939, MA Amsterdam, Archives Municipal Police no. 5225, Inventory no. 5688.

<sup>75</sup> Zwikker, “50 jaar akoestiek” (cit. n. 71), 93.

<sup>76</sup> “Razzia tegen het lawaai,” *De Telegraaf*, 7 Oct. 1938, avondblad; “Met den geluidmeter op decibeljacht,” *De Telegraaf*, 8 Oct. 1937, avondblad; “Actie voor meer stilte in het stadsleven,” *Het Volk*, 12 Nov. 1937, ochtendblad; “Taxi’s zijn het allerergste,” *Het Volk*, 13 Nov. 1937, ochtendblad; “Geluidsoverdaad overal in de stad,” *Het Volk*, 16 Nov. 1937; “De stiltebrigade op stap,” *Het Volk*, 16 Nov. 1937, ochtendblad.

General Radio, and the Silenta did not work accurately when placed in an airstream because of its sensitivity to wind. Zwikker was said to be aware of the latter problem, but he asserted that it did not negatively affect the Silenta's use by the police. Moreover, he explained, unlike General Radio's device, his noise meter was calibrated for a mix of tones rather than for pure tones.<sup>77</sup> Zwikker may not have been telling the full story on these technical defects, for as will be shown in the following section, the Silenta also became a controversial measuring tool in the context of neighborly noise.

Clearly, then, the effort to objectify city noise by means of noise meters was accompanied by several challenges. First, they did not contribute to solving the complex issue of the psychoacoustic individualization of sound perception. Second, measuring street noise was one thing; creating effective or reliable pocket-size meters for police use was quite another. Finally, it proved difficult to deploy such meters in quarrels about noise between neighbors.

#### THE RIGHT TO MAKE NOISE

The Silenta was designed for measuring all the various noises one could hear on the streets of Amsterdam. The sounds of the city also constituted the focus of the Amsterdam silence campaign in the late 1930s. Yet according to the city's Police Chief Bakker, the noise produced by radios did not fit the category of street noise. He claimed that the trouble with radio noise was that it could only be ascertained *inside* private homes, and under normal circumstances the police could only enter private homes after neighbors lodged a complaint. This limited space for intervention conflicted with Bakker's preference for an active, sustained police campaign against noise.<sup>78</sup> He felt that at a later stage of the campaign it might prove necessary to tighten some regulations. However, before this came up for discussion among those directly involved in the campaign, voices in the press articulated views about the import of Bakker's mission that were quite unambiguous.

The potential deployment of the Silenta in cases of domestic noise nuisance came to be ridiculed by the same newspaper that had initiated the noise abatement campaign, *De Telegraaf*. "Amsterdam has its 'Silence Brigade,' which will take action against all those within the city's confines who make needless noise," stated an anonymous author of a column published on July 7, 1937. It is "a great measure," he added ironically. Imagine, he told readers, that you hear the twin babies of your neighbors screaming:

You snatch the phone and dial our silence dictator, Police Chief Bakker, and explain the case to him. . . . Hardly three minutes later, you can hear the silence brigade's motorcycle rush into your street. . . . With them, they have professor Zwikker's sound meter and indeed, true enough—this *is* too much needless noise. Yet whereas the noise little John produces exceeds the limit by 0.12, little Peter, his twin brother, exceeds the maximum limit by no less than 8.65 dB. What is the brigade to do in such a case? Arrest little Peter and take him with them, regardless of the protests of his happy parents?

<sup>77</sup> H. van Tongeren to C. Zwikker, 2 March 1940; Zwikker to van Tongeren [March 18, 1940]; and van Tongeren to Zwikker, 27 March 1940, Archives *Nederlands Akoestisch Genootschap*, Delft, *Loonmeetdienst*, File no. 110—"Silenta."

<sup>78</sup> Notice Police Chief Bakker, 7 Aug. 1937, File A. 8 1937, MA Amsterdam, Archive no. 5225 (Amsterdam Police), Inventory no. 5688.

After telling stories about other fictitious cases, the author concluded that the brigade might well run out of “zwikkers”<sup>79</sup> (a *zwikker* being a nickname for the Silenta).

If this was not enough, a year later *De Telegraaf* published a similarly fabricated dialogue between two neighbors:

By the time I wanted to read my newspaper serial last night, you were playing dance music, madam, as many as eighty-three *zwikkers* too loud. And somewhat later I could hear that in your kitchen you were speaking your mind to Trude, who first dropped the tureen—sixteen decibels too loud—and subsequently talked back to you, thereby largely exceeding the legal *zwikker* limit. . . . [F]amily life will become increasingly peaceful, since as soon as a particular family member raises his voice, he will not be responded to somewhat more loudly but one simply fetches the *zwikker* and disarmed this family member will be.<sup>80</sup>

By exaggerating the potential “advantages” of the noise meter in domestic and neighborly conflicts, the author of the mockeries seemed to be suggesting that some noise should merely be accepted and that any effort to objectify noise without taking into account the context and meaning of sound was completely ridiculous. In these situations, the author submitted, the limitations of sensible use of the noise meter were utterly clear from the start. Not a peaceful life, but a world of conflict would be the result of the deployment of a technology such as *Zwikker’s* noise meter in conflicts between neighbors. A truly calm neighborhood could only be secured if people accepted each other’s right to make noise to a certain extent and refrained from calling in the police for every minor incident. As early as 1933, *De Telegraaf* had approvingly quoted a Paris police prefect who said that one had to compromise between people’s need for silence on the one hand and their wish to listen to news on the radio and their love of music on the other. According to him, “city life” could not do without a certain degree of “courtesy.”<sup>81</sup> The mockery of the usefulness of *Zwikker’s* Silenta in quarrels between neighbors was perfectly in line with this reasoning.

According to Smilor, a comparable attitude prevailed in America. Because each person had a life within his community, he hesitated to grumble about noise since he wanted no one to gripe about him. A person hesitated “to invoke such powers of the law as are clearly his” since he did not want his neighbors to consider him “a killjoy or opposed to ‘progress.’” In every community, “the rule of ‘live and let live’” held “considerable sway.”<sup>82</sup>

In addition to the argument that the masses had a right to their gramophones and radios and the argument that sound perception was subjective, the argument that city residents had a right to make noise significantly influenced the post–World War II discourse on the noise of neighbors. Taken together, these three arguments made it increasingly unlikely that the noisy behavior of neighbors would become regulated as part of a national Noise Abatement Act, let alone that it would be controlled by quantitative criteria.

<sup>79</sup> “Spotternij of Sotternij,” *De Telegraaf*, 7 July 1937.

<sup>80</sup> “Spotternij of Sotternij,” *De Telegraaf*, 25 April 1938, ochtendblad.

<sup>81</sup> “Het groote-stadsleven eischt wellevendheid,” *De Telegraaf*, 22 Dec. 1933, avondblad.

<sup>82</sup> “In the Driftway,” *The Nation* 129 (1929): 353–54, quoted in Raymond W. Smilor, “Cacophony at 34th and 6th: The Noise Problem in America, 1900–1930,” *American Studies* 18 (1971): 23–8, on 25.

Experts who prepared reports on this issue, be it for their own institutes or for national authorities, kept stressing the variety in people's sensibility with respect to noise. A Dutch survey on the annoyance of the sound of radio, talking, walking, trampling, vacuum cleaners, and children playing, published in 1958, claimed that "those who did intellectual work usually experienced more sound nuisance than those who worked with their hands." One's sensibility for sound nuisance tended to go up as one's education, income, social standing, children's age, and level of intellectual activity (as well as that of one's family members) increased. In contrast, "sound nuisance showed a tendency to decrease when the size of the family increased."<sup>83</sup> Experts stated again and again that responses to noise were strongly influenced by one's personality and situation, as well as by one's mental and physical condition.<sup>84</sup> The most prominent scholar among them, C. Bitter, cited Bartlett's book and other Anglo-American research to underpin his claims.<sup>85</sup>

Apart from acknowledging individual differences, experts anticipated a growing need for leisure—which some people rather enjoyed *with* loud sounds and others *without* loud sounds; given this clash, the experts had reason to project a sharp rise in problems associated with noise nuisance. If the sound isolation of housing was not improved, they argued, it could lead to a pattern of life that would frustrate any form of spontaneity, as most people would be afraid to disturb their neighbors, which in turn would hamper their own mental development or the family's well-being.<sup>86</sup> In the domestic context, then, individual variety in sensitivity to noise complicated the noise problem even further. It was taken for granted that people somehow needed to express themselves within their homes. "Although I do not want to maintain that one should not be a little more considerate of other people," an expert in health technology wrote, "one should not forget that making sound, at times even much sound, is a very normal manifestation of life."<sup>87</sup> A year later, he said that listening to a good record might be as pertinent to one's personal development as reading a good book<sup>88</sup> and even claimed that drawing attention by making noise was an inevitable phase in a person's development.<sup>89</sup>

Thus the notion that making a certain amount of noise was a basic right of urban residents kept prevailing. In light of this view, acoustic "privacy" officially came to be defined as the right to an undisturbed tranquility inside one's home, *as well as* the right within the confines of one's home to express oneself freely, uncontrolled by others.<sup>90</sup> Hence new national interventions in noisy behavior of neighbors by penal law were unlikely.

<sup>83</sup> C. Bitter and Cary Horch, *Geluidhinder en geluidisolatie in de woningbouw II: Sociaal-psychologische aspecten van de geluidhinder* (n.p.: Instituut voor Gezondheidstechniek T.N.O., 1958), 85–6.

<sup>84</sup> C. Bitter, "Lawaai en Geestelijke Volksgezondheid," *Maandblad voor de Geestelijke Volksgezondheid* 15 (1960): 203–14, on 206–7; *Geluidshinder in de woning* (Delft: Geluidstichting, 1961), 15; *Geluidhinder en geluidwering in de woningbouw* (Rotterdam: Bouwcentrum, 1965), 2; "Geestelijk-hygiënische facetten," *Tijdschrift voor Sociale Geneeskunde* 45 (1967): 324–9, on 325.

<sup>85</sup> Bitter, "Lawaai" (cit. n. 84), 213

<sup>86</sup> *Ibid.*, 209.

<sup>87</sup> J. van den Eijk, "Voorkómen van geluidhinder in woningen: Wat is wenselijk? Wat is mogelijk?" *Maandblad voor de Geestelijke Volksgezondheid* 15 (1960): 277–86, on 277.

<sup>88</sup> J. van den Eijk, "Geluidshinder en woning," *Tijdschrift voor Sociale Geneeskunde* 47 (1969): 18–23, on 18.

<sup>89</sup> *Geluidshinder in de woning* (cit. n. 84), 3.

<sup>90</sup> *Geluidhinder: Rapport van de Gezondheidsraad*, Proceedings Parliament of the Lower House 1971–72, Printed Documents 11673, 17.

To be sure, authorities were not entirely powerless. From the late thirties onward, experts had advocated not only good city planning, but also the reduction of the sound emission from domestic appliances as ways of solving the noise problem at home. In addition, in the early fifties, the first provisional norm for soundproofing in housing was articulated.<sup>91</sup> In 1966, after years of research in test buildings, the Dutch government declared the so-called NEN (Dutch Norm) 1070 (1962) to be in force, which replaced the provisional norm.<sup>92</sup>

Toward the end of the 1960s, experts claimed that people had become more susceptible to noise because of their hurried way of life. In view of this new lifestyle, experts underscored the significance of silence and tranquility. Such an environment would help people regain their strengths, which in turn would be to the benefit of their family life and professional output. Yet city life was full of ambiguities. People looked for amusement as well as tranquility, and the former always seemed to be accompanied by some type of sound. A number of experts even observed that city dwellers' habituation to noise could be such that many would no longer be capable of sleep in a quiet village setting anymore. The fact that cities grew into more densely populated ensembles and more and more urban residents lived in apartment buildings, while at the same time culture at large generated more differentiated patterns of activities, also contributed to the emergence of new dilemmas associated with neighborly noise in urban settings.<sup>93</sup>

The formulation of stricter criteria for regulating noise nuisance from neighbors had little priority, however. Accordingly, the Board of Public Health, which advised the government on this issue and which had Bitter as one of its own advisers, proposed to address problems involving residential sound nuisance in four ways: soundproofing, reducing the sound emission from consumer appliances, careful city planning, and public information campaigns.

In 1975, the Dutch government sent a preliminary version of its first national Noise Abatement Act to Parliament. In the wake of a growing awareness of environmental problems, noise was put on the national agenda with new élan. The Noise Abatement Act had detailed regulations against several kinds of public noise, including industrial noise, motorized traffic, trains, and discos; many of the regulations were based on maximum levels of sound emission. Yet the act had far less to say on noise nuisance in the domestic, or residential, sphere. Although the act's explanatory notes made clear that noise from neighbors was a source of annoyance for one out of four Dutch citizens and although the act set standards for the use of sound-absorbing walls in housing, the government was unwilling to issue any national rules against the noisy use of equipment in private homes.<sup>94</sup>

Initially, members of parliament and spokespersons of noise abatement and environmentalist organizations expressed their surprise about this reluctance. The "industrialization" of homes, they argued, had brought complete audio systems into living rooms, effectively turning them into concert halls. Did not many people suffer from

<sup>91</sup> Normblad V 1070, *Geluidwering in woningen N.B.G. III*, 1951, quoted in *Geluidshinder in de woning* (cit. n. 84), 10.

<sup>92</sup> *Voorschriften en Wenken voor het Ontwerpen van Woningen* (The Hague: Ministerie van Volkshuisvesting en Ruimtelijke Ordening, 1966).

<sup>93</sup> Bitter, "Geestelijk-hygiënische" (cit. n. 84), 327–8; P. H. Schmidt, "Geluidshinderproblemen zoals een keel-neus-oorarts die ziet," *Tijdschrift voor Sociale Geneeskunde* 47 (1969): 3–6, on 4.

<sup>94</sup> Proceedings Parliament of the Lower House 1975–76, no. 13639, no. 1–4, 131.

neighbors who refused to lower the volume of their stereo or only use it during certain times of the day?<sup>95</sup> The answers the minister Irene Vorrink gave were quite ambiguous. On the one hand, she stressed that noisy behavior of neighbors should not be part of a national law, but of local ordinances. On the other hand, she claimed that such ordinances were not effective anyhow because they were difficult to monitor and uphold. It was far from easy for the state to interfere in people's private homes. Moreover, people's standards differed; what some considered normal, others saw as nuisance. Therefore, it was basically impossible to gain control over neighborly noise in legislative terms.<sup>96</sup> What the government proposed instead was subsidizing a huge information campaign, titled "Let's Be Gentle with Each Other," to be organized by the Dutch Foundation for Noise Abatement. This proposal eventually passed the Dutch parliament.

The focus of the information campaign "Let's Be Gentle with Each Other" was clear. It started from the assumption that everyone decides for himself or herself "whether and when noise is annoying" and that "each individual sets other standards." Therefore, "the only way to solve this problem is to work it out together," as a community.<sup>97</sup> An early publication of the Dutch Foundation for Noise Abatement advanced the view that producing excessive sound should become a phenomenon that people feel ashamed about, much like drinking and driving.<sup>98</sup> The designers of the campaign, however, felt that the subject should be dealt with in a "prudent, understated way" and that any shock effect, insult, or paternalism was to be avoided. Their final objective was a modest one. They wanted to "create a positive willingness to think about the subject. And maybe even to realize that once in a while they could be the source of another's bother. . . . Again: no reproaches, no corrections. For people will tend to shy away from those and become unapproachable."<sup>99</sup>

Initially, the Dutch Foundation for Noise Abatement claimed that the campaign was quite successful in raising people's awareness of the problem as well as enlarging their willingness to do something about it. With respect to actual changes in people's behavior, however, the foundation had to acknowledge that the campaign was far less successful.<sup>100</sup>

## CONCLUSIONS

In this article, I focused on the debate on noise, nuisance, and neighbors as it materialized in the Netherlands during the course of the twentieth century. I argued that the decision *not* to control the behavior of neighbors by means of science- and technology-based legal criteria resulted from a particular confrontation between science and the city.

The noise nuisance that followed in the wake of the increasing availability of gramophones and radios at the start of the twentieth century initially came up for debate in urban neighborhoods, where a substantial number of residents lived in close

<sup>95</sup> *Ibid.*, no. 5, 12, 4, and no. 8, 26.

<sup>96</sup> *Ibid.*, no. 6, 2; and Proceedings Parliament of the Lower House 1976–77, no. 13639, nos. 9 and 10, 2, 50–1.

<sup>97</sup> *Soft Sell* (cit. n. 4), 16.

<sup>98</sup> *Geluidhinder in het woonmilieu* ([Delft]: Nederlandse Stichting Geluidhinder, 1971), 24.

<sup>99</sup> *Soft Sell* (cit. n. 4), 5–6.

<sup>100</sup> *Effecten van voorlichting inzake burenlawaai* (Delft: Nederlandse Stichting Geluidhinder, 1997), 2–3.

proximity, frequently in modern-style concrete apartment buildings that were anything but soundproof. The residents of these neighborhoods embraced various lifestyles—some being on shift work in factories all the time, others actively engaging in the city's nightlife—and this made city residents more vulnerable than others to noise nuisance. Furthermore, experts linked up the issue of noise nuisance with urban life in particular because city dwellers were seen as the main contributors to the country's economy; since they were already exposed to a multitude of sensory experiences throughout the day, they badly needed their sleep.

Local Dutch politicians, when confronted with the noise problem generated by the mounting presence of gramophones and radios, wanted to issue tight regulations for their use. Soon the politicians were forced to take nonmechanical sound, such as that of singers and musicians practicing scales, into consideration as well. Leftist council members emphasized the class issue involved, since noise nuisance from gramophones was largely associated with working-class neighborhoods. It was considered unfair to single out the nuisance of loud gramophones and radios and control their use by means of local ordinances without also regulating nuisance caused by traditional sources of sound, such as musical instruments. The effort to establish a formal distinction between technology-induced noise nuisance, as from gramophones and radios, and noise nuisance caused by musicians ultimately failed. In any case, local ordinances aimed at banning noise nuisance in city neighborhoods proved difficult to uphold, in part because they implied the active interference of local authorities in people's private domain.

After psychoacoustic experts established that reaction to noise was largely temperamental, a concrete solution for the legal problems associated with noise nuisance, namely its objective measurement, was both developed and discredited in a strictly urban context. In the second half of the 1920s, the measurement of city noise such as the din of New York was one of the largest fields of deployment of the early noise meters. At first, the imperfections of the noise meters were seen as irrelevant to city noise. During the 1930s, in an attempt to get a better handle on city noise, the Amsterdam Police Department showed an active interest in the application of noise meters. The first Dutch pocket-size noise meter, specifically designed for establishing levels of street noise objectively in terms of decibels, was even a direct result of close collaboration between its designers and the Amsterdam city police. This custom-made measuring device, however, also had clear limitations that were directly associated with the urban context for which it was invented. The wind and the reverberations of buildings along city streets, for instance, could substantially reduce the reliability of the pocket noise meter's readings. Furthermore, the noise meter's potential for solving conflicts about noise between neighbors became the object of ridicule in the local press. Journalists argued that in such conflicts, which formed an inextricable part of urban life, courtesy was called for, rather than noise meters. More generally, experts increasingly began to stress people's right to make noise in the domestic sphere; listening to music was seen as an important form of leisure, just as the freedom to express oneself counted as a crucial aspect of privacy. Consequently, there were fewer reasons to believe that the effort to formally regulate neighborly noise on the basis of quantitative criteria could be successful.

Yet as the discussions about basing standards on the character of technology itself, on maximum decibel levels, and on pocket noise meters indicate, the outcome might well have been different in other contexts or other time periods. In view of such con-

tingencies, it is very interesting to find out if and how the issue of noise and neighbors has been legally addressed in other countries. The growing conviction that sound perception had a large subjective element clearly was an international academic trend. The broadening of local ordinances to cover all types of domestic noise, including that of musical instruments, also seems to have been a rather general development. In early 1930s Paris, for example, there was an ordinance that banned nuisance of gramophones and radios as well as of musical instruments, and the New York Noise Abatement Commission sought to broaden an ordinance against the “excessive and unusual noise” of mechanical or electrical instruments into one that included musical instruments as well.<sup>101</sup> In Germany, authorities had great difficulty finding legal grounds for intervention. As early as 1915, however, the court of justice decided to recognize local bans on making music as well as playing gramophones in front of open windows in the evening and at night.<sup>102</sup> In England, the Home Office prepared a model regulation that specifically prohibited nuisance from “loud-speakers” as late as 1938.<sup>103</sup> Then under the British Noise Abatement Act of 1960, noise nuisance “from any source” could be an offense. Moreover, the famous 1963 Wilson Report on Noise stipulated: “Ultimately, the best remedy” for “the disturbance from neighbours’ radio and television sets, record players and tape recorders” was “sympathy and consideration between the people concerned.”<sup>104</sup> The significance of educational campaigns specifically directed to the noise problem between neighbors may have been more substantial in the Netherlands than elsewhere, however. Certainly, the progressive government of the mid-1970s was more inclined to foster public education than earlier governments.<sup>105</sup>

Further comparative research in this area is called for, but it is clear that the “trust in numbers” that prevails in so many domains of modern society failed to solve the noise and neighbors issue in Dutch city life. The story of this type of nuisance is in fact a “tragic” one. We all favor a fair distribution and use of commodities. We all admire academic work that sheds new light on the manifold differences between peoples. We all acknowledge that quantification means reduction of meaning. We all realize that the music of our CD player allows us to sit back and relax each and every day. Yet we all hate our neighbors’ noise.

<sup>101</sup> MA Amsterdam, Archives Municipal Police 1814–1956 (1974), Archive no. 5225, Inventory no. 5688, Ordonance sur le Bruit, no. 1 1931—Fevrier, Art. 1; City Noise II 1932, chap. 1, 10–1, chap. 3, 7, chap. 4, 6–7.

<sup>102</sup> Klaus Saul, “Wider die Lärmpest’: Lärmkritik und Lärmbekämpfung im Deutschen Kaiserreich,” in *Macht Stadt krank? Vom Umgang mit Gesundheit und Krankheit*, ed. Dittmar Machule, Olaf Mischer, and Arnold Sywottek (Hamburg: Dölling und Galitz, 1996), 151–92, on 169–70.

<sup>103</sup> “The Neighbour’s Loud Speaker,” *Quiet* 2 (1938): 31.

<sup>104</sup> Alan Wilson, T. Ferguson Rodger, Albert Fogg et al., *Noise: Final Report* (London: Her Majesty’s Stationery Office, 1963), 117. “H.M. Government Committee on the Problem of Noise,” *Quiet Please* 1 (1962): 15–8, on 18; Noise Abatement Act, 1960, 8 & 9 Eliz. 2, c. 68.

<sup>105</sup> *Soft Sell* (cit. n. 4), 3.