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CHRISTIAN BRÖER

THE TRAGIC HISTORY OF NOISE ABATEMENT

Review of: K. Bijsterveld (2008) *Mechanical sound: Technology, culture and public problems of noise in the twentieth century*. Cambridge MA: The MIT Press, 368 p.

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Industries, cars, planes or gramophones: the drums and hums of modern technology have been accompanied by noise complaints ever since their introduction. According to Karin Bijsterveld's well written and insightful book *Mechanical Sound*, the history of attempts to reduce noise annoyance has turned into tragedy: despite all efforts, complaints and protests persist. Persistence of issues is far from obvious though, as the successful elimination of stench demonstrates: Unpleasant industrial smells have been eradicated and bodily odours or are successfully deodorized. Why haven't we contained sound to such a degree, Bijsterveld asks? Her book therefore aims to uncover 'what made noise such a persistent issue on the public agenda' (2).

Common explanations for the persistence of the noise issue do not suffice. Economic growth and the accompanying noises do not automatically lead to annoyance. Mechanical sounds are valued as a sign of progress too and

the industry itself strives for noise reduction. Why, then, is the noise issue still with us? Bijsterveld, a historian of science and technology at Maastricht University, explains this with path-dependency: how earlier solutions are institutionalized and structure the way we deal with more recent technological advances. Two elements stand out: first, how various specific struggles over noise resulted in the 'paradox of control': noise indexes and contours suggest the possibility of handling annoyance while at the same time masking a basic political decision: that noise is here to stay. Second, the spatial approach to noise obstructs a solution. Anti-noise measures are meant to 'create islands of silence, yet have left a sea of sound to be fiercely discussed'.

This argument is based on archival research of the period 1850 to 2000 and comprises Western Europe and The United States. Chapters 3 to 7 deal with four cases of noise control policies: industrial noise, traffic noise, gramophone noise of neighbours, and aircraft noise. A literature review and a content analysis of novels brings to the fore repertoires of dramatizing sound (chapter 2): most prominently the claim that modern industrial noise disrupts social order. But, the 'topos of intrusive sound' (51) does not chime with law-making and industrial policy. The anti-modernization tone of these arguments often precludes a coalition between industry workers and anti-noise activists in the late nineteenth and early twentieth century (chapter 3). The early anti-noise activists (chapter 4) focussed on silence as a valuable good in itself, which in turn was discarded by their opponents as 'hypersensitivity'. But they also started a tradition of 'silencing'. As silence could be linked to order, they found, for example, traffic regulators on their side. Especially, 'honking' was successfully trimmed down in the first half of the twentieth century. The honking regulations also show how visual culture – road signs and traffic lights instead of honking – was a consequence of auditory concerns (rather than visual culture suppressing auditory sensitivity). The artistic celebration of mechanical sounds in the early twentieth century and the democratization of music making in the last quarter of that century hampered noise abatement in two ways: they framed unusual and loud sounds as art and they spread this art to homes and streets (chapter 5).

Neighbourhood noise, then, followed another trajectory (chapter 6). At times when ever more city-dwellers were cramped together and started to buy gramophones and other machinery, noise problems were relegated to negotiations between citizens. Noise, in this case, was ‘dequantified, but also individualized and depoliticized’ (191). This is in stark contrast to the way sound from airplanes is dealt with (chapter 7). Although we see a comparable emphasis on quantification of sound and limits to exposure in Western Europe and the US since the second half of the twentieth century, it took half a century before different countries started using the same noise index. National traditions of expertise hampered its development, which was imposed through EU-regulation.

The chapter on aircraft noise-indices contains one striking finding I want to present in some more detail. Bijsterveld also looked at the Dutch history of introducing a noise index. She was able to unlock the black box of scientific expertise by studying the archives and mail exchanges of some of the chief scientists: Kosten (an acoustician) and Bitter (a psychologist). Kosten was head of the committee which was given the assignment to devise a Dutch noise index and present a scientifically based threshold of annoyance: how much noise is too much? The answer to that question had to come from the psychologist Bitter. But Bitter replied that while he could show correlations and effects, everything else was a political and normative decision. It took months of pressure from the committee before Bitter agreed to formulate some thresholds, which Kosten could then translate into limit values for politics. Bijsterveld presents this as a main instance of ‘pragmatic objectivity’, the logic of intervening with the aid of ‘numbers’. What is now taken for granted – acoustic load as a sign of annoyance – had to be forced into scientific practice.

Bijsterveld has successfully drawn together a range of different empirical cases and theoretical strands. The history so described can be read as co-evolution of technology and culture, mediated by public policy. Our current sonic environment is the product of both increasing numbers of sound sources and of increasing sensibilities. Both are coupled to noise policies and – crucially – lead to new technologies of sound production and regulation.

In the sense that ‘older solutions’ set the scene for new problematizations, her argument is one of path-dependency. Another example of path-dependent technology development comes from Lynn Eden’s stunning book ‘The whole world on fire’ (Eden 2004). Eden shows how the US military systematically neglected the fire damage of nuclear arms and focussed instead on the lesser damage of the blast. Eden traces this to the nineteen fifties, when US military scientists stated that fire damage was too hard to calculate. From that time on, expertise, training, and funding focussed on blast damage, which then created a collective that sustained itself.

This kind of path-dependency is apparent in noise-annoyance science too. For example: until recently state-of-the art noise models for Schiphol did not include the sound of aircrafts when they taxi to the runway. In the past, the decision was made to focus on noise caused by a plane in the air. This selective approach then structured decades of research and planning.

In a path-dependent process, expertise is reproduced and new regulations partly confirm the old ones, which add truth to an approach which was once peculiar. These truth regimes (*dispositif*) assume ‘fine-tuning’ as the basic operation: instead of avoiding noise problems altogether, they try to contain the conflict. Bijsterveld even uses a more specific version of path-dependency theory. In the case of noise research and noise policy, new insights and new policies are added to the old ones, and do not replace them. So, for example, in the Netherlands we see a tendency to add ‘non-acoustic factors’ to the current acoustic-based policy. Next to maximum levels and noise contours, airport neighbours are consulted and have to negotiate what is locally important to them. A layer of stakeholder involvement is added to noise abatement policy. This *layering* is a more specific structure of path-dependency.

One wonders how these (layered) regimes, once established, affect those hearing machinery or aircraft sound? Bijsterveld states that in the history of modern noise abatement, sensitivity, distinction and refinement have been arguments to counter (new, technological) sounds. ‘It was only in the course of the 1930’s, when experts in psychoacoustics started to medicalize and pathologize one’s sensitivity to noise, that the notion of subjec-

tivity of hearing began to hamper particular forms of noise abatement.’ (p.238). Decreasing class differences also added to this, since the (cultural) elite could no longer claim universal validity to their tastes. But, since ‘Mechanical Sound’ focuses on historical developments in technology, actual sensitivities and hearing practices outside science, technology and policy are accessed only through complaints.

Bijsterveld’s approach is risky. The conclusion drawn from a combination of divergent cases assumes sound as a basic category, which is then shown to be constructed in different ways. What if not sound or noise, but, for example, communication is the basic category? What if the sound of an aircraft is part of a communication between, for example, authorities and citizens? A comparison between different sound-sources would seem less compelling.

Bijsterveld’s is a rich book, answering questions and opening new lines of inquiry. It’s a bold attempt which adds significantly to the field of science and technology studies and should also be read by policy makers and anti-noise activists who might find their expertise severely challenged.

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Eden, L. (2004) *Whole world on fire. Organizations, knowledge, and nuclear weapons devastation*. Ithaca, N.Y.: Cornell University Press.

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