

## **Music and Noise: Towards a Politics of Sound Ecology**

**Mark Reybrouck**

Music is everywhere. As such there is a problem of overexposure and overstimulation, especially in case of noisy music. But what is noise and what is noisy music? Can we speak in objective terms of noise pollution or should we take also subjective factors into account? The questions are related to actual discussions about critical sound levels for music festivals and music consumption in general. Technology, in fact, has provided the means to increase the level of sound intensity to unprecedented heights. This same technology, however, has also furthered the digital revolution, which has enabled the production and reproduction of music at the highest levels of perfection. It makes sense, therefore, to show some nuance in reflecting on the possibilities and pitfalls of music technology.

Technology, as a rule, mostly shows its disadvantages first. This has been the case with music technology and the terror of decibels, which are responsible for a lot of hearing damage and modification of the arousal level of the listeners. There are, in fact, the known facts of impaired hair cells of the hearing organ and hearing loss for certain vibration frequencies. Less known, however, are recent findings about impairment of the spiral ganglia of the cochlear nerves, which may be acute as well as delayed, but which can as yet not be detected by common diagnostic techniques for hearing damage (audiogram).

It is arguable, therefore, to intervene in the listening habits of common listeners, both in a restrictive and positive way. The restrictive way is related to the biological constraints of our hearing apparatus. Some sonic stimuli are obviously located in the zone of discomfort and even above the threshold of pain and permanent damage. There is, further, a problem of medical decadence, in the sense that we may convince ourselves that we like stimuli, which our body doesn't like. This is a kind of bad conditioning, which is driven by media-indoctrination and social pressure, which both invite listeners to listen to music in the zone of overstimulation. The positive way aims at a better education of the senses, in an attempt to train listeners to listen with more attention and precision. Technology can be helpful here by means of visualizing music and providing interactive tools for dealing with the sounds, both at a receptive and productive level. Technology, in fact, can be considered as an extension of our natural tools, in providing both precision and power. Music technology, accordingly, has provided means to go beyond traditional limits of volume, speed and range. It is an oversimplified picture, therefore, to conceive of it merely as the principal cause of excessive sound volumes. Digital technology has proven to be very useful at the level of production, recording and rendering of the music: there are no technical limitations (speed of playing, volume of sound), no musical limitations (virtual infinity of possible sounds) and the quality of rendering of the sound has been brought to the highest standards.

The musics of today have embraced this technological evolution. Starting from the technological turn at the beginning of the 20<sup>th</sup> century, with pioneers as Russolo who promoted the art of "bruitism" with sounds that were the outcome of the modern urban landscape, characterized by speed, energy and noise, there has been a tendency to the musicalization and emancipation of noise, with a culmination in the advent of

musique concrète and electronic music. There is, however, a distinction between music and noise. Music, mostly, relies on regularity and harmonicity in its spectral characteristics and on the possibility of identification and differentiation of the sounds. Musical (acoustic) sounds, moreover, are located preferentially within the optimal zone of stimulation.

This brings us to the process of dealing with sound. The ear, and the hearing apparatus, is basically a sound detection device. It is one of the most sensitive organs of the body with a pitch range between 16 and 20.000 Hz and a dynamic range between the hearing threshold and the threshold of pain with the loudest perceivable sound being one billion times stronger than the weakest one. Its primary function is to create distinctions in the wealth of sound, and to evaluate the sounding environment in terms of survival value. It provides information about size and distance of objects in the environment and can induce reactive behaviour such as the startle reflex and heightening of arousal. It is possible, however, to deal with sound, not only in terms of coping with the environment, but also in terms of auditory stimulation. Listeners, as a rule, need some kind of critical stimulation in order to function optimally and music can provide this stimulation. Music, moreover, has inductive power, and there are several biological mechanisms that underlie these music-induced effects, such as the linkage with pleasure and reward centres in the brain, the release of hormones in the blood, stimulation of the nervous system and activity in the emotional brain.

There is, however, a problem with the dosage of the stimulation. Most actual soundscapes (both urban and musical) are characterized by an abundant wealth of stimuli. Ecological soundscapes, on the contrary, provide stimuli in the zone of optimal stimulation. They have been coined by Murray Shafer as a hi-fi soundscapes, which possess a favourable signal to noise ratio, with discrete sounds being heard clearly because of the low ambient noise level. In such a soundscape even the slightest disturbance can communicate vital or interesting information. In a lo-fi soundscape, on the other hand, individual acoustic signals are obscured in an overdense population of sounds. There is cross-talk on all the channels and in order for the most ordinary sounds to be heard they have to be monstrously amplified.

Actual soundscapes, as a rule, are lo-fi, not only in the environmental soundscapes but also in much contemporary music. As such, there is a problem of abuse of some of the possibilities of sound technology with sound intensity levels that go beyond the threshold of pain and damage. It is arguable, therefore, to formulate some recommendations in order to go from a lo-fi soundscape to a hi-fi soundscape again. To do this, it is necessary to challenge the media and their programming policy, which is too narrow in its supply. There is actually a segmentation of the market, which is conform to social acceptance and shared standards of listening with limiting formats that are driven by economical forces rather than educational claims. It is arguable, therefore to recommend basically four steps to be taken: (i) there is need of a strict regulation by law of sound pollution and sound nuisance, (ii) some recommendations should be formulated for the media and their programming policy, (iii) the current musical standards which use overstimulation as a norm should be challenged, and (iv) there is need of a widening of the listening horizon and to emphasize the skill of listening.