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THE SOUND HERITAGE OF A NEW TOWN : AMBIANCE SHOCKS IN CONTEMPORARY URBANISM

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How does the sound heritage of a recent urbanization form? We would like to highlight the various processes involved in constituting the environment of a great urban area : how old and new sounds, specific effects due to the natural environment and the particular sound output of the population or infrastructure (roads, railways, industry) combine and leave a mark on the place. One of the principal result of our investigation is that contemporary urbanism creates what we call *ambiance shocks*. The research (that was carried out in 2008) focused on the new town of Isle d'Abeau, near Lyon, France, which was built in the 1970s. This urban area stretches over 20 kilometres beside the Lyon-Grenoble motorway. The conurbation was designed as an archipelago of built islands in a natural landscape and around old villages. Various urban and architectural forms have taken root in this gently rolling landscape, beside the motorway that runs along the valley bottom. Our aim was to use sounds to explore the sensory identity of this type of new town and to identify options for change in order to give developers a greater awareness of dimensions that are difficult to represent. The study of *ambiance shocks*, would be then a paradigm to understand the sonic experience of this kind of contemporary urbanism and to find different solutions to integrate or resolve these conflicts in urban design.

1. Introduction

The approach developed here aims to grasp the sound characteristics of a place and understand how they came into being – their phonogenesis – considering their past, present and possible evolution. The difficulties arise when we try to introduce this qualitative approach to sound into urban development, particularly as the latter operates at a larger scale. In the specific case of the new town that we studied, the local councillors wanted to explore the patrimonial dimensions of their built environment, for their own benefit and that of the population. For our part we proposed to focus on the sensory construction of their heritage and in particular the role played by sound in the dynamic of this shared sensory urban heritage, both historic and contemporary, natural and built. It

may seem odd to take an interest in the idea of urban sound heritage and it is important not to make this approach too narrow by looking exclusively at historical aspects. The word heritage tends to conjure up the idea of historic, latter-day towns and traditions, or perhaps values recognized as belonging to a common culture. In the present case most of the urban development is recent, and though it includes existing villages, it also has its own centres. In addition, given the particular features of the site, the natural heritage attracts increasing attention. In the specific case that formed the basis of our study, the local council has for the last 10 years been promoting the idea of a “nature town”, on account of the large number of ponds in the vicinity, but also the considerable extent of farming land and undeveloped space. We have assumed that in the future the natural dimension, with the notion of landscape heritage, could well make an increasing contribution to acoustic values. Lastly, introducing the dimension of hearing into the discussion of sensory heritage does not necessarily oblige us to reduce it to historic or purely landscape-oriented aspects. It also involves identifying local people’s current practices, which forge tomorrow’s sound heritage in this type of urban development. Within the framework of our study, we set out to study an environment in formation and to identify its strong points and possible outcomes, noting what we owe to the past but also what may constitute the area’s future. In this type of approach the aim is to predict which trends should be encouraged in the future and which factors may serve as a basis for enhancing identity and points of reference (or even creating new ones), but also to prevent sound resources from being wasted. Trying to compile a sound map, or cartophony, may provide an incentive to visit an area in order to listen to it – every bit as much as to see it – bringing out its qualities and particularities, whether one lives there the whole time or only pass through occasionally in pursuit of leisure or relaxation. It may also make people realise that they are part of the soundscape themselves and prompt them to offer policy-makers new points of reference.

The research we carried out bears on both the collection of a material that makes it possible to represent the sensory configurations of the new town, and on possible ways of raising non-specialists’ awareness of qualitative sound dimensions.

In keeping with our laboratory’s traditions, we considered three aspects with a view to constituting a repertoire of sound situations that may be heard at the location under study, in order to reveal its particular listening qualities:

- the spatial morphology that creates unusual conditions for propagation,
- the modalities of sound production linked to spatial appropriation marking inhabited areas,
- the particular signals and sound backdrops that characterize certain places.

These goals immediately raise two difficulties:

- How to go about harvesting clues to a sound identity in such a far-reaching environment?
(Our study concerned three localities – Isle d’Abeau, Villefontaine and Vaulx-Milieu – that make up the new town)

- How to make a dimension as little represented as sound accessible to both non-specialists and spatial specialists?

2. Methodology

2.1 Themes and classification of sound surveys

From the very beginning of this study we took an interest in various spatial scales, different types of contemporary objects and practices that seemed to be contributing to today’s relatively complex sound fabric, made up of very disparate situations and in some cases even causing “atmospheric clashes”, as well as areas of self-sufficient unity. Listening to our material we defined five major headings which overlap but nevertheless delimit the dominant sound bearings:

- particular sonic markers,
- social practices producing sound contexts and more specifically vocal contexts,

- built or natural spaces determining propagation effects,
- relaxation with nature-related sounds (water, wind, wildlife, etc.),
- sound backgrounds and signals associated with mobility practices.

2.2 Collating sound situations

Drawing on the experience of previous studies of urban sound carried out by Cresson¹ over more than 20 years we decided to immerse ourselves in the environment and identify remarkable situations on the basis of our own experience, not being inhabitants of the locality. Our “strangeness” with regard to the place meant that we needed to explore it, with occasional surprises. We consequently made no attempt to describe a perception akin to local people’s average perception, the aim being to carry out an experiment in discovery, which through repetition or comparison, reveals remarkable features. Here the notion of “remarkable” does not refer to anything extraordinary, indeed quite the opposite. It is an incentive to look at signs, forms of structuration or sound effects that specify the environment under study, perception and memory. Furthermore, by designating a material to be listened to we are making it “remarkable”, prompting debate on it, with a view to making the material available on the internet.

Before addressing the vast area covered by the study and discovering certain parts, we had first to define certain criteria. The brevity of the study prevented us from surveying local people with a long-term perspective. The study team therefore waited for a period conducive to spending time outdoors², and then spent several days touring the area, first making observations and then recording specific situations. At the same time, we read various documents on the recent development of the conurbation which suggested various leads. The method deployed during the phase devoted to collecting sound material was therefore based on a direct approach to the area, our exploration seizing on various characteristics (relief, high and low points) and various key features, marked on maps (viewpoint, canal, ponds, various forms of urbanization, ranging from the relatively natural to the more built up). This process was mainly the work of experts in the sound environment (a sound ethnographer, an acoustic architect, a sound engineer) observing and exploring places habitually accessible to the general public and to rambblers.

2.3 Selection of points of sonic interest

This collation of sound situations was obviously not exhaustive and was restricted to spots selected on account of their value in terms of landscape or space, their built characteristics or unusual functionality, or indeed on the basis of various documents outlining the goals enshrined in the original project to build a new town. Our selection was also guided by discoveries related to our lack of familiarity with the site, and its usual or emerging social practices. About 15 hours of recordings constituted the raw data from which we selected material to reveal certain remarkable situations or characteristics. Recordings were made with – in parallel and in so far as possible – a Leq type sound level (equivalent sound level throughout the duration of the recording, which in this case has a representative value for conditions at the time of recording). Some sound recordings, made at three points at the same time (marked PMP in the records) are particularly valuable for highlighting differences in sound level, that may be due to the relief or built environment.

Below: a map of selected points of sonic interest (Posi), available on the net at:

{HYPERLINK

"<http://maps.google.fr/maps/ms?ie=UTF8&hl=fr&msa=0&msid=103951478232712168326.000458bd51f113804a9fd&z=13>"}

¹ Cresson is a research laboratory affiliated to the Directorate of Architecture and Heritage (DAP), located at the Grenoble School of Architecture (Ensay). It is part of the CNRS mixed research unit, UMR 1563, Architectural and Urban Atmospheres.

² April 2008 was particularly tumultuous (wind and rain) so we had to wait till the end of the month to really start surveying sounds.

We recorded the GPS coordinates of each recording point, which can thus be accurately located. The map shows the importance of the motorway and railway which occupy the valley bottom and the various roads serving the centres of the urban archipelago.



3. Representing collected material

To represent the collected material we opted to establish a qualitative sound map, using computer graphics techniques to access the sound bites thought to reveal phenomena or effects characterizing listening situations at Isle d'Abeau. This system, which combines text, photographs, sonagrams and sound recordings, took quite a long time to produce. Systematic listening notes were drawn up for each sound bite. Finally, an account of the whole investigation is provided by a printed booklet containing 50 listening notes and a summary (this written material is also included on the CD) and a compact disc containing CD-quality sound bites, but also the associated multimedia presentation, under Adobe Flash Reader (available free of charge on the net) with various points of entry – photographs of the site, sonagrams, maps and cross-sections.

Below is an example of a listening note on allotments (rented to local families for use as a garden).



ÉPIDA con-tract Head G.Chelkoff	ALLOTMENTS	Villefontaine, Ser-venoble	Le jardin des radios	1'59"
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Sound engi-neer JL. Bardyn	040508	Couple ORTF Schoeps Bonnette grand vent
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SPECIFICATIONS SUMMARY
 Various birds, cuckoo, bells, radio, metallic impact of spade on earth, human breathing, road noise in back-ground, plane, starting up of a lawn mower

SOCIABILITY
 Digging the garden

REMARKABLE SOUND EFFECTS
 Metabole

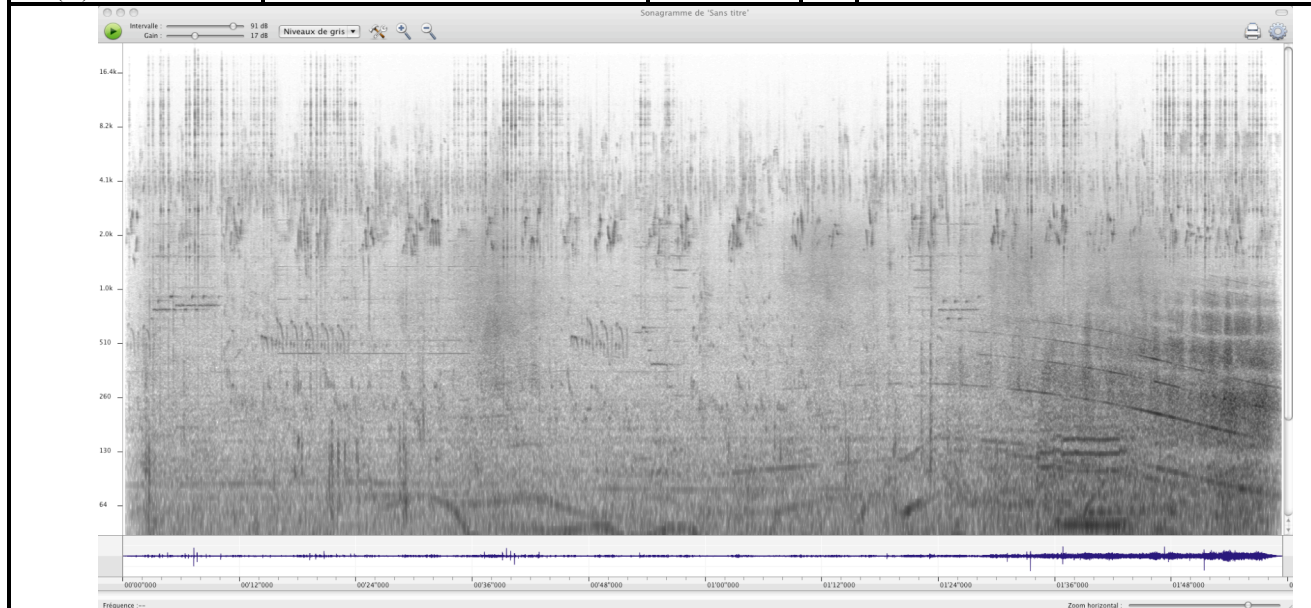
SUMMARY OF HYPOTHESES
SPACE
 Allotments between two housing estates

SOUND MATERIAL
 Narrative side of the sound extract, as we hear the sounds of human activity and what goes on beside it (music on the radio). The disparity between nature (the cuckoo and very present birds), human sounds close by, either physical or cultural (breathing, radio), or the Doppler effect of the plane on another scale, concealing part of the soundscape, add a humorous touch.

WEATHER
 Sunny Sunday, time for well earned relaxation ...

INTEREST
 Considerable human interest in the extract, very figurative, the various off-beat elements creating an odd scene. Tuning to various radio stations reveals the communicating character of the place, the sharing of the elements (earth, water, sun) is also reflected in the sound exchanges (voices, spades, radio). The practice of allotments, enjoying the heritage of the earth, colours the landscape in a paradoxical way and creates an unexpected sound atmosphere.

Leq dB(A)	LMax dB(A)	PUP	GPS N45 36.455 E5 08.898
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The diversity of timbre is apparent in the sonagram for this sound bite.

4. Heritage, specifically sound heritage, in a changing environment

In our presentation of the notes for each sound bite we defined thematic categories, enabling us to analyse and highlight the interest, in terms of identity and heritage, of specific sound situations. These themes refer to various topics of interest to development: spatiality, naturality, sociability, mobility and markers. These are dominant factors in the process of taking one's bearings and, as such, they are difficult to separate from one another. They are consequently not water-tight and the classification of a sequence under a given them is necessarily a little arbitrary. The aim is nevertheless to make the material express something and it is obviously by making cross-references between levels and seeing how they relate that meaning may emerge. Furthermore it should be clear that the link to each of these themes may be environmental, media or landscape-related.

The mobility theme is represented by eight sound bites in which road or rail sounds are set against the backdrop of the landscape, exerting a powerful influence over its perception. As the area is marked by major rail and road infrastructure it may seem odd to consider this remarkable, or even of aesthetic interest in sound terms. However it seemed to us that certain situations gave a particular status to the sounds of mobility, under certain conditions. Distance effects, in particular, seemed to be playing a special role in the area's sound make-up. For example the variation in background road noise seems to correspond to the undulation of the natural landscape. In addition, some historic sites overlooking the valley are swamped by road noise, with significant conflicting effects creating real "atmospheric shocks". In other instances the sounds of mobility accompany and mingle almost harmoniously with other sounds. Lastly mobility is always an opportunity for self-expression: the sound of cars accelerating or hooting on the roads, expressing mobility by way of singular events.

The naturality theme is represented by 10 sound bites in one or more sounds stimulate the relationship with the natural environment or, on the contrary, when listeners are located in a largely natural environment, there is nothing sound can do to raise their awareness. In this type of urban setting it is possible to move from environments that are dominated by infrastructure to other situations that partly escape its influence. The natural heritage in sound terms becomes perceptible through the presence of water and birdlife. The presence of small ponds that attract fishers encourages sorts of sound icons specific to their immediate neighbourhood. However these sound enclaves are fragile. We also noted the sound experience of the wind, which in certain situations (crest of hills and edge of woods) becomes a perceptible sound element, marking our experience of the natural environment.

The sociability theme is represented by 13 sequences illustrating sound and more specifically voice interaction between individual and social practices, and built or natural spaces. It is unusual to include the social dimension in the idea of a common sensory heritage. However we realised during this exploration the extent to which the sound presence, in the form of social and vocal interaction, gives a place a specific value. The forms of vocal interaction have a powerful significance, not in terms of their semantic content but by their own texture. Either they result from usual practices or meeting rituals (people playing *boules* or fishing, allotments, sporting activities, bars) creating singular sound environments, or they are due to more ordinary practices in the course of which exchanges (particularly near homes) give a certain tonality to the place.

The aim of the markers category is to identify emerging signals that may temporarily mark the territory or timeframe of the site. In particular we had in mind markers that might be related to both the cultural and industrial heritage. But in the course of our investigation it was mainly the first category that made a real mark on our hearing. They are illustrated by nine sound bites in which bells are audible. The bells are due to the presence of former parishes: three bell towers are still active, covering part of the territory. The audibility of these bells at a considerable distance some-

times (when they are out of visual range) connects places. Indeed it was their main function. Various listening situations connect them to the context in which they arise.

Although the spatiality theme is horizontal it is more particularly represented by 10 sound bites in which sound reveals the spatial characteristics. This type of urban territory is characterized by very diverse natural or built morphologies: valley bottoms, dominant hills, urban development at several levels, in high-rise blocks or clusters, or indeed attempts to reproduce a village-type organization. Each of these spatial configurations produces specific sound environments.

For example the long, high-rise blocks primarily located on the crests of hills, which mark the visual identity of the landscape impose on local life a radically bilateral grasp of sights and sounds, contrasting a broad landscape with distant sounds, on one side, with an everyday life with close sounds, on the other. However in fact the broad landscape is made up of a world of sounds from the valley dominated by transport and the road just below the blocks, so the relationship seems more visual on the overlooked side and sound-related on the urban side.

Furthermore distance and depth are the remarkable features of the auditory experience of this new town's landscape. It is undoubtedly a key feature of the identity of the auditory experience of this type of area. Listening to sounds at long range leaves an impression on our perception, creating a sense of depth. Through sound Isle d'Abeau people are connected well beyond the area they actually occupy, providing of course they emerge from their built enclaves. This is certainly one of the major effects of the rolling landscape, of the relief that reflects sound flows, and also of the urban sprawl.

Another remarkable feature is the enclave effect that defines each urbanized cluster separated by a sort of sound "blank" that is perceptible in one's experience of the area. This is due to the new town having been designed as an archipelago. The roads connecting the built centres still do not procure qualitative experiences that can be enjoyed on foot.

5. Conclusion

As a provisional and open conclusion, it seems necessary to enhance three types of environment of heritage value in the area covered by the new town.

First, there is a need to consolidate sound reserves the main qualities of which relate to hearing urban sounds at a certain distance while at the same time making natural sounds that form a common heritage more audible. This translates into the need to avoid disseminating roads and restrict the number of detached houses that give rise to them. Without actually setting up a conservatory it would be possible to favour the audibility of sound resources with a rich timbre.

Secondly, the sounds of sociability need to be encouraged. It would consequently be advisable to concentrate the potential for sociability to encourage vocal sound environments at various scales. This could be achieved by concentrating or increasing the density of urban sectors, combining new housing developments with mainly paved public spaces (thus limiting reverberation) with areas of abundant vegetation. Minimal outdoor spaces connecting directly to dwellings encourage the relationship with the natural environment (patios, courtyards and terraces) and create enclaves in which one can shut out the common environment or at least filter it.

Lastly the third goal would be to prevent roads from completely taking over the spaces through which they pass, by developing spaces along their route cultivating multiple paradoxes and experiments, possibly even hybridizing the uses to which they are put. In this way walking, supermarkets, watercourses or even dwellings and allotments could recolonize places to mitigate their

road-dominated character (the advent of vehicles that make less noise will encourage this trend, which should be anticipated immediately). Also under the mobility category it would be advisable to study pedestrian or cycle routes from the perspective of the sound spaces they cross with a view to favouring these forms of transport.

In conclusion it may be said that this research project enabled us to address a type of urban fabric that has not yet been explored in much detail with respect to sound, despite this type of fabric having played a predominant role in recent developments. The method of presentation provided an opportunity to test classifications and tools that could help to evoke sound in the process of urban development. It also allowed us to imagine various forms of change to requalify certain non-places, in sound terms, drawing on local resources.

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