

Introduction: The Third Voice

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Between the two kinds of research devoted to sound within its environment - the predominantly technical ones that regard it as a nuisance against which protection is needed (the acoustic, normative, and urbanistic studies) and the chiefly aesthetic ones (through the approaches of musicology and ethnomusicology) - a third path has recently opened up, which aims, in a more fundamental way, at the *anthropology of sound*. This third way touches directly on the concerns of architects, to the extent that it cuts across and integrates the fundamentals of space (applied acoustics, architecture, urbanism), of perception (psychophysiology and the sociology of everyday life), and of sound production (technology, communications theory, and the media).

The work carried out in France by the CRESSON Team (The Research Centre for Acoustic Space, an affiliate of the CNRS within the School of Architecture, Grenoble) which has led to the recent emergence, in various parts of the world, of concepts such as 'the sonic landscape', 'the influence of sound', or 'aural comfort', demonstrate this development. In tackling the question of the *effective handling of urban public spaces*, the texts gathered in this issue of *Architecture & Behaviour*, in line with its international, interdisciplinary, and integrative character, are in keeping with this third way of research.

The *international* perspective falls under two headings. For one thing, there is the Franco-Swiss Conference organized at Lausanne in June 1990, from which we include here some of the proceedings, which permitted four researchers from CRESSON to compare their work with that of four others from Lausanne and Lyon who have been engaged on related questions. There is also the very reason behind this issue: the creation of a *European research network* devoted to the broad theme of *the acoustic quality of lived-in space*.¹ It is fitting to add that we mounted this conference on the occasion of launching exploratory research whose stakes are fully European in scope.²

¹ Inaugurated at CRESSON's initiative, the first European colloquium on *the acoustics of lived-in space* took place at Grenoble from 20-22 March, 1991. Its primary objectives were "to lay down the theoretical and methodological foundations of the research network", "to help to improve the livability of urban spaces", and "to foster greater awareness, among professionals in architecture and urban design, of the dimension of sonic comfort".

² It is a matter of perfecting an interdisciplinary tool for analysis of the quality of urban acoustic spaces in various European countries after pilot tests have been conducted in Switzerland. This exploratory

This issue of the journal is *interdisciplinary* in principle. Located as it is along the interface of "architecture and behaviour", the question of acoustic quality in urban space cannot even be raised without bringing to bear intersecting viewpoints and differential approaches. Therefore we have called on various disciplines and experts (i.e., in the order of their presentation: philosophy and psychological sociology, architecture and geography, sociology and linguistics, acoustics and physics). Likewise, we have smoothed out none of the wide linguistic variety among the texts, stemming as they do from different traditions and starting points. This variety has been safeguarded from editorial interference, so that each way of formulating the issue may call on its own terminology and preserve its own kind of specific quality.

The *integrative* approach taken here is devoted, then, to dispensing with the fire-works of footnoted authorities. On the one hand, the reader will be led gradually from the 'soft' sciences to the 'hard' ones - the initial bridging among our various fields. On the other hand, this issue is divided into four parts - the features of sound associated with 'territory', 'the public factor', 'communication', and 'perception' - which offers a bridge this time between aural comfort and acoustic quality. Each of these parts brings together two articles: one devoted largely to a theoretical viewpoint, the other for the most part practical. One looks specifically at sound, while the other expands on the problematic involved and enlarges its scope. Now for further details.

The first subtopic is *territoriality* - meant in the strict sense of the term as 'that which creates a territory'. If it seems possible to define clearly the idea of urban space in the visual domain, and to make a subject out of the appropriative modes that can be observed systematically, acoustical space, one comes to realize, is not congruent with the visual order of things. It knows no boundaries, and is discontinuous, invisible, and bodiless. If, therefore, there is no such thing as an acoustic territory in the strict sense of the term, does acoustic territory even exist? While visual territory constructs and manifests itself through an image, does not sound, on the contrary, refuse to appear straight off, in this palpable way of creating territory? Such are the questions tackled in the first section by Jean-François Augoyard and Michèle Grosjean. The *theoretical aim* of the first, which assigns certain sonic qualities to human territoriality, based on the findings of animal ethology and ecology, has bearings on the *practical aim* of the second, which inquires into the territorial role of public-address systems in contemporary public spaces, with their various forms of announcements, and singles out two securely operative criteria: the infrequency and the authenticity of the broadcast transmission of speech. At the outset of every cosmology, remarks our first study, there is sound; and our second adds that the foundational moment for cities is marked by the voice. Behind the archetypal character of sound marking out a field or place - whether it fills or divides - just as behind the archaic character of the voice that creates territory - whether soothing or strident - rests *the spatial dimension of aural comfort* whose parameters are surveyed in this first section.

The second subtopic is that of *the public factor*, meant in the sense of 'that which gives rise to the public character' of a given space. The idea of *public space* has been the subject recently of important theoretical discussions that highlight at times the spatial aspect (pertaining to Sennett's treatment of anonymity and the *mise en scène*)

and at times the aspect of expression in public (with reference to Habermas on transparency and "the communicational act"). Beyond Ola Söderstrom's recasting of this opposition - in which he brings a helpful concrete example by looking into the new identity of Vancouver's *Downtown Eastside* quarter - it is necessary to inquire into the acoustic aspects of 'the public factor': how does a public space lend itself to hearing? What are typical acoustic public behaviours? What role do the various kinds of social noise play in separating public from private, and in relating the individuals to the group? Finally, how do space, and the public, *hear themselves* (also in the sense of *intend themselves*)? Such are the questions posed and dealt with by Grégoire Chelkoff. For those questions, besides any spatial criteria, *the social dimension of aural comfort* is paramount.

The third subtopic is *communicability*. The sonic environment as a public space either allows or prevents, promotes or hinders, protects or exposes interpersonal communication. These factors literally 'create communication'. Why and how? And by what means? How are the effects of sound and semantics related to each other? In other words, how does sound make sense and vice versa? These are the questions taken up this time by Jean-Paul Thibaud and Lorenza Mondada in their articles below. The first concerns itself with *nonverbal communication* by work teams confronted with the need to communicate in a highly constraining acoustic environment, the construction site. The second, by contrast, deals with situations of ordinary *verbal communication*, and tries to show how the physics of sound and the semantic universe are inseparable. In the first case, the repetition, punctuation, and rhythmic character of the acoustic signals let out by the 'interacting agents' seem to be the determining factors, and the associated effects are what establish a 'working unit', on the site. In the second article, repetition, resonance, and the recurrence of themes spoken by interlocutors seem to be decisive, and it is the quasi-acoustic factors one can link to these (sequence, the rhythm in turns of phrase, synonyms and parasyonyms) that allow a 'speech unit' to form, in a conversation. On one side work, on the other speech. In both cases it is the temporal nature of sound which affords meaning, in acting just as in speaking. And here the reference to acoustic effects lends clarity to *the temporal dimension of aural comfort*.

The fourth subtopic, finally, is *perceptibility*. Once again, the question we are posing is not so much how space is made perceivable by the perception of sound, as what happens to make space itself resound. Not that one perceives, but how, and not only how sound presents itself (how one gauges and measures it) but also how one *constructs* 'acoustic objects'. Here of course the theories of perception in phenomenology play a guiding role. Beyond the propositions of empiricism and idealism, which see in physical sound either a given object or an ideal representation, Jean-Jacques Delétré and Yves de Ribeaupierre in their informal pieces, respond to such questions by taking on two problems that touch directly on the idea of aural comfort: *measurement* and *localization*. The first article has us notice, by way of a brief historical survey, that aural comfort has always been determined by the evolution of the tools and techniques of measurement (statutory acoustics and then auditorium spaces established the standard of comfort). It argues, then, for a reversal of the usual practice and the creation of a third way for acoustics, namely 'environmental'. As for the second article, it urges an "axiomatics of the acoustic object" which cannot be reduced to its manifestations: the object is not a 'given', but rather a "multisensory construction" that one must represent not as an image but as an "interactive group of properties". These include the properties of space (referential either absolutely or relatively), physiology (the ear is active), and psychophysics (acts of localization and

discrimination). These are the *acoustic and psychophysiological dimensions of aural comfort* which are singled out in the final part of this collection.

It goes without saying that we do not pretend to have exhausted the material in our four themes concerned with territory, the public factor, communication, and perception. What we have been able to present, perhaps, is a preliminary approach to the idea of aural comfort. To consider the aural factors in urban space which set off a territory, lend it public character, permit communication, or afford clear perception, is to reflect not so much on the intrinsic acoustic *qualities* of space as on the acoustic factors of *adequate or inadequate handling* of such space. In other words, one passes from thinking about aural *comfort* to the *potential* for that quality.

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The visual dimension too often has taken pride of place in the study of urban space. In our culture, architecture is something to look at: the tourist *gazes* at it, the student *observes* it, the designer *draws* it; sometimes one expects it to dictate our behaviour! But one forgets that architecture is also something that has ears - something whose materials and spatial ordering reflect or structure sound in specific ways, and make it necessary both to engage in careful audition and to invent technical and scientific means for such audition.

The city has many voices. The first, we might say, is simply the kind that creates a nuisance, and submits to technology for the provision of relief. The second is its contrary, consisting simply of music and yielding to a strictly aesthetic approach. Let us wager that this collection of essays finally gives voice - tentatively, to be sure, but finally quite vividly - to the third voice, which transcends the dualisms of technology and aesthetics and answers to an anthropological and interdisciplinary approach to the idea of aural comfort.