

Spaces Speak - Are You Listening?

Jim Slater reviews a very 'different' book about sound

I was initially attracted by the strange, rather 'musical' title of this book, and the nicely produced and weighty hard-back with its attractive dust-jacket had me looking forward to making a start. But any superficial ideas that I might initially have had were rapidly modified as I began to read the 400 densely packed pages of what is effectively a major text book on a whole range of subjects relating to what I would have called acoustics, but soon came to know as 'aural architecture'.

It is a solid, academic book, packed with interesting facts and information on every page, and reflects the deep background knowledge of its authors, Barry Blesser, former Professor at MIT who spent 40 years working on audio, acoustics, perception, and cognitive psychology, and Dr Linda-Ruth Salter, who has spent 25 years focusing on the interdisciplinary relationship of art, space, culture, and technology. Although the book is introduced as 'an adventure story transforming a narrow topic into a set of broader issues', and it does undoubtedly have a narrative thread throughout that keeps you interested and leads you from one topic to another, it is also a comprehensive reference work, bringing together the combined knowledge, experience and opinions of the many people with whom the authors have worked over the years. There are hundreds of references and footnotes.

The biggest surprise for me, a broadcasting engineer with a basic understanding of acoustics who has been listening to classical music all his adult life, and who regularly listens to live music in a wide range of different halls (acoustic spaces I had to learn to call them...!) was to recognise early on how little I knew and understood about the topics being considered. On virtually every page there were (to me) new ideas, new concepts, and new ways of 'looking at' sound and all its manifestations. The book introduced so many ideas that I hadn't previously contemplated, and I really enjoyed the learning process, as so many experiences were explained in terms of previously unrecognised analogies between seeing and hearing. I loved the simple idea that just as visual embellishments can make a space

aesthetically pleasing to the eye, so aural embellishments can do the same for the ear, adding aural richness or special attributes to the space. Just as mirrors can change the visual impression of a space, so acoustic mirrors, curved surfaces, can change the apparent location of aural objects and give illusions of expanded space.

Auditory Spatial Awareness is explained as a complex mixture of the 'obvious' factors such as the ability to experience a particular space and detect that it has somehow changed or affected the sounds within, with a whole range of other 'human' factors. Listeners' reactions depend on the social, cultural and personal values that they bring to a space as well as the recognised acoustic features of the environment such as reverberation.

Acoustic horizons, the distance at which a listener can hear a sound, are studied in detail, with the concept of sonic boundaries and acoustic arenas being used to explain how a couple of people may converse in an otherwise noisy environment, whether on a factory floor or at a cocktail party.

There are good explanations of how our ancestors well understood how the structure of caves and other sites with enhanced resonances, echoes, and reverberation, and interesting suggestions that cave paintings and the acoustics of their locations were deliberately interrelated.

The many different types of spaces suited to music are considered, and it is explained how acoustic architects first learned from buildings that were seen to 'work' acoustically, copying the designs, and then started to understand and develop new buildings to provide the aural effects that they required. Changes in church layouts and designs to suit changing requirements are discussed - if the focus is to be a speaker in a pulpit, then the reverberant qualities of a cathedral are totally unsuitable.

The effect of sound on the cinema industry over the years is considered. It is suggested that some decisions regarding cinema audio were made without the

decision makers fully understanding the reasons for their choices, but credit is given to those who initially realised the importance of the 'centre' channel in the early days and to those who developed artificial surround sound systems - the first aural architects of virtual aural space came from cinema, not audio backgrounds.

There is a fascinating section discussing scientific perspectives on spatial acoustics, which provides many examples but also serves to highlight just how much more we need to understand before we can reliably apply scientific techniques in many of the areas concerned.

The book moves into sociology (and perhaps a little too far from its acoustic roots) in a big way as it considers the effects of evolution, both in animals and in humans, describing many different cultures and the part played by language in bonding processes.

'Spaces Speak, Are You Listening' is undoubtedly enjoyable, and I thoroughly appreciated the constant stream of new ideas and concepts that flow as you turn the pages, but I also found it hard work to get through, although I am not absolutely sure why. The text is dense, with little in the way of illustrations, and the language is frequently 'academic' and often ranges widely around the basic topic being discussed, taking off in directions tangential to the main subject. If you want to deepen your understanding of the way in which sound in all its manifestations has affected mankind throughout the ages then you too will enjoy this book - but you will need to be prepared to put in some serious effort in order to make the most of it.

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