

SPACES SPEAK, ARE YOU LISTENING?

by Barry Blesser and Linda-Ruth Salter

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Did you know that you are an aural architect? You are, I am, we all are. How so? According to this book, "Aural architecture refers to the properties of a space that can be experienced by listening." We may not have designed or built great edifices, but we all have made decisions that influence impressions of direction and space heard by ourselves and others. If, as the authors do, we extend the notion of acoustical space to include those real and synthesized spatial sounds incorporated in recordings, and those that are reproduced through loudspeakers in our listening rooms, it is clear that audio engineering and home entertainment offer many opportunities for us to be aural architects.

The audio industry uses, indeed needs, measurements to define benchmarks of what is acceptable or not. Standards describing recommended listening situations slavishly follow traditions of acoustic measurements that we now realize are less than completely relevant in small listening rooms. Blesser and Salter contribute a refreshingly simple, but not totally reassuring, perspective on the value of measurements. It begins with the recognition of a hierarchy in hearing. At the lowest level is sensation, an indication that the organism reacts to a sound—a detection threshold. This is probably quite well related to physical measurements of the sound. The next level is perception, which incorporates cognitive processes embracing cultural and personal experiences. Here we recognize what it is that we heard, and perhaps initiate a process of adaptation. At the highest level of response to sound, we attribute meaning to the recognition, which can range from irrelevant to highly relevant, from undesirable to good. As the authors state, "detectable attributes may not contribute to perceptible attributes, and perceptible attributes may not be emotionally or artistically meaningful. . . . Furthermore, affect can be at once meaningful and undesirable." What we, as individuals, consider meaningful and desirable is largely learned, although some of us show more or less native ability to hear certain spatial and other attributes of sound. At this level, measurements are irrelevant.

Since the audio business is dependent on communicating much more than raw sensation, how do we quantify acoustical parameters that confidently relate to the perceptions and meaning of

sounds to individuals with wide-ranging personal and cultural differences? In the final analysis, it is probably not possible, but there is hope that we may be able to connect with some of the key underlying perceptual dimensions.

The authors lead us through a fascinating history of human aural experiences and how they have, at different times, led us to do quite different things, for different reasons. You will learn how to select a location in a cave where the acoustics lend the appropriate aural support to a specific kind of visual wall art. You will understand how early religious ceremonies and music followed the lead of early structural architects, but how some recent religions have embraced aural architecture in order to deliver their differently formatted messages. Music of old was tied to physical spaces; now there is no requirement for a physical space in order to enjoy music. Along the way, recent generations have suffered through the nonspacious years of monophonic sound, which led to acoustically dead studios, and close microphones to further avoid contamination by environmental acoustics. They adapted to it. As the authors say: "Dead acoustics were the cultural norm." Now, even though modern microphones permit much greater flexibility, the tradition continues, but with an important difference: electronically generated simulations of acoustic space and components of space are available in recording equipment, and these are added at will. Spatial illusions are no longer attached to visual correlates; they exist in the abstract, conceivably a different one for each instrument in a multimiked composition. Recording engineers are now "aural architects." Do we complain? Traditionalists might, but most find it just another form of sensory stimulation. "Novelty now competes with refinement," the authors believe.

"Acoustic engineers determine the physical properties of the recording environment; design engineers develop the recording and reproduction equipment; recording engineers place the microphones; mixing engineers prepare the final musical product for distribution; interior decorators select furnishings for the listeners' acoustic space; and listeners position themselves and the loudspeakers within that space. Often acting independently, these individuals are members of an informal and unrecognized committee of aural architects who do not communicate with one another. With their divided responsibility for the outcome, they often create the spatial equivalent of a camel: a horse designed by a committee." Listeners are merely the last in a long line of aural architects, but with no influence on, or connection with, what has happened before.

No matter how meticulously the playback equipment has been chosen and set up, and no matter how much money has been lavished on exotic acoustical treatments, what we hear in our homes, headphones, and cars is, in spatial terms, a matter of chance. The authors conclude that "...spatial accuracy is not a significant criterion for much of our musical experience." And, does it really matter? "The application of aural architecture to cinema is a good example of aesthetically pleasing spatial rules that never presume a space as a real environment. Artistic space never represented itself as being a real space; it is only the experience of space that is real; and achieving artistic impact often requires spatial contradictions," they maintain.

Where does this leave us in terms of being able to measure what we hear? We absolutely know that we have understanding of some of the building blocks of aural spaces. Is this enough? "... a sign hanging in Einstein's office said, 'Not everything that can be counted counts, and not everything that counts can be counted.' " It seems that our challenge is to identify those parameters that are most closely correlated with pleasurable attributes, and work on them, regardless of their relationships to "reality," whatever that may be.

I have my favorite parts of this book, and so will you. Since it integrates aspects of sociology, acoustics, architecture, and music, there is something for everybody. It is a shame that, given the detail lavished on the aural architecture of concert halls and other spaces of historical interest, there is not a more detailed and accurate account of how multichannel audio came into being. It is what this and future generations will be listening to in our cinemas, homes, and cars. Nevertheless, this book has so much to recommend it for audio and music industry people that the lapse is hardly noticed. This is an extremely articulate, literate, and thought-provoking book. Read it; it will change how you listen to and think about spaces.

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How we experience space by listening: the concepts of aural architecture, with examples ranging from Gothic cathedrals to surround sound home theater. We experience spaces not only by seeing but also by listening. We can navigate a room in the dark, and "hear" the emptiness of a house without furniture. Our experience of music in a concert hall depends on whether we sit in the front row or under the balcony. The unique acoustics of religious spaces acquire symbolic meaning. Social relationships are strongly influenced by the way that space changes sound. In Spaces Speak, Are You List...