

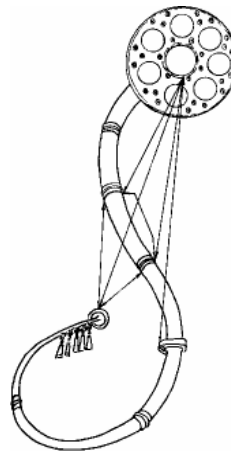
Set the wild echoes flying

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BARRY BLESSER & LINDA-RUTH SALTER. *Spaces speak, are you listening? Experiencing aural architecture*. xiv+438 pages, 21 illustrations. 2007. Cambridge (MA): Massachusetts Institute of Technology; 978-0-262-02605-5 hardback £25.95. CHRIS SCARRE & GRAEME LAWSON (ed.). *Archaeoacoustics*. x+126 pages, 68 illustrations, 5 tables. 2006. Cambridge: McDonald Institute for Archaeological Research; 1-902937-35-X hardback £25.

Second only to scent as the most evanescent of sensations, sound would seem particularly elusive of archaeological inquiry. And yet — and obviously — human life is inherently aural, and ancient sound is intertwined in our species' evolution and social existence. Throughout prehistory humans have extended the ambit of sound with instruments, specially created spaces, and composed tonalities. For such reasons, at some level archaeology must consider ancient sound, even if in a partially deaf manner.



The two volumes under review form a complementary pair of texts, although not a perfect fit. Barry Blesser and Linda-Ruth Salter's book, *Spaces Speak, Are You Listening?*, is a broad overview, an often engaging introduction to aural architecture and spatial acoustics. *Archaeoacoustics*, edited by Chris Scarre and Graeme Lawson, is a collection of conference papers that present specific case studies about the creation of auditory spaces and, to a lesser extent, the development of culturally formalised sounds in ritual and music. Each book has its strengths and weaknesses.

Spaces Speak

Blesser and Salter present their volume as an introduction to aural architecture, an inherently multi-disciplinary inquiry into *'the properties of a space that can be experienced by listening'* (p. 5). Arguing that architectural studies have been dominated by the visual sense, the authors point out that while the aural properties of concert halls, cathedrals and other musical spaces have been studied — essentially as constructed extensions of musical instruments — the aural architecture of religious, political and social spaces has not been systematically explored.

The authors' agenda is intentionally multi-dimensional and while only two chapters (discussed below) would seem directly relevant to an archaeology of sound, in fact there are many points of archaeological interest throughout the volume. Thus the chapter entitled 'Scientific Perspectives on Spatial Acoustics,' while largely concerned with the design of concert halls, includes a bracingly frank discussion of the difficulties of studying auditory spatial awareness. The chapter 'Spatial Innovators and Their Private Agendas' focuses on how modern aural architects and kindred specialists are divided among different scientific sub-cultures and academic disciplines, but also discusses the social implications of new soundscapes — an issue relevant for archaeologists thinking about prehistoric sound.

Two chapters are of immediate archaeological interest. 'Aural Spaces from Prehistory to the Present' is an historical overview filled with stimulating notions that archaeologists might pursue. For example, Blesser and Salter introduce the concept of an aural icon — an *earcon* — *'a sonic event that contains special iconic meaning not -present in the sound wave'* (p. 82). They cite examples of prehispanic West Mexican bells and the Aeolian harp of ancient Greece, an instrument whose taut strings made audible by the passage of wind; archaeological readers may think of other *earcons*, such as the prehispanic Andean *Strombus* shell trumpet or the flat drum of native North America. Blesser and Sailer's historical synopsis (pp. 94-108) of soundscapes and public spaces in western Europe should stimulate archaeologists to consider the aural correlates of sedentism, settlement density, and urbanism.

'Auditory Spatial Awareness as Evolutionary Artifact' is the weakest chapter, dealing with a subject the authors apparently do not command. For starters, the authors argue that auditory spatial awareness

is the product of evolution: well, what else could it be? Yet, when they contend that *'The same evolutionary pressure that led individual species to optimize their auditory cortex for different functions also operates on small groups of individuals living in their particular soundscape niche'* (p. 347), they expose a theoretical naivete that is earnest but unfounded. Blesser and Sailer's summary of the evolution of mind is well meant, but not attuned to current controversies regarding genetics and natural selection, such as the complex overlapping functions of genes. Their background research is spotty: they cite, for example, Leslie Aiello's work on the expensive tissue hypothesis, but overlook Aiello and Dunbar's work on neocortex size, social group size, and the evolution of language — which is immediately relevant to their discussion. As for the proposition that *'We may speculate that those [humans] with an enhanced auditory spatial awareness had ancestors living in an environment where that ability had survival value'* (p. 346), is there any earthly environment where such ability *does not* have survival value? Overlooking such flaws, Blesser and Salter provide an engaging and often very stimulating overview of the relationships between sound and space, and their book comes close to a primer for archaeologists interested in the effective qualities of sound.

Archaeoacoustics

The contributors to *Archaeoacoustics* approach the sounds of the past via a specific and difficult question: even in spaces that have distinctive aural properties, are the properties intentional characteristics or accidental side-effects? As Aaron Watson (p. 11) notes, "*Intentionality*" describes the deliberate investment of purpose or meaning' either in an artefact, archaeological feature, site, or landscape. In his introductory chapter, 'Sound, Place, and Space: Towards an Archaeology of Acoustics,' Scarre explores this issue of intentionality and usefully compares it to an analogous problem in archaeoastronomy. Just as a built environment may have an associated acoustic effect (e.g. an echo), features in the built environment may have an associated astronomical event (e.g. a solstice alignment). How does one demonstrate that the associations were intentional in the built environment's design? While Scarre proposes two broad lines of validation — patterned repetition and closeness of fit — other authors explore intentionality in more specific ways.

For example, Steven J. Waller examines the correlation between echoing locations and the placement of rock art in two sites (Horseshoe Canyon, Utah and Hieroglyphic Canyon, Arizona), arguing that the placement of rock art and the strength of echoes are positively associated. Similarly, Igor Reznikoff examines evidence for resonance in a variety of architectural and natural spaces. Parallel to Waller's analysis, Reznikoff finds statistical correlations between the placement of rock art motifs and the aural properties of caves, but, in an interesting extension, points out that caverns and cathedrals share properties — vaulted chambers and pillars — that enhance resonance and allow for the '*magic practice [of] singing with echoes*' (p. 83).

Shifting from spaces to instruments, Francisco d'Errico and Graeme Lawson apply 15 criteria to three sets of bone pipes from Upper Palaeolithic, Middle Palaeolithic, and medieval contexts. Their analysis leads them to accept the medieval and Upper Palaeolithic pipes as musical artefacts, but to reject the Middle Palaeolithic object as a cave-bear femur punctured by carnivores rather than carved by Mousterian craftsmen. Conversely, Peter Holmes's study of Bronze Age Scandinavian *lurs*—thin, cast-brass, lip-reed horns shaped into elegant curving pairs — indicates that these objects were intentionally made musical instruments (a conclusion that this reviewer, frankly, found less than earth-shattering.)

Several of the authors deal with the technical challenges of studying soundscapes. Ian Cross and Aaron Watson offer a brief overview of the acoustics

of socially organised sounds, questioning whether standard 'Western' methods of approaching sound are relevant for understanding 'pre-modern' experience. They conclude that while the application of standard acoustic methods provides initial strategies for studying the soundscapes of archaeological sites '*rather more work needs to be done to further elucidate the meanings, emotions or powers that ancient soundscapes embody for the people who embodied them*' (p. 115). Watson tackles this question further in an engaging essay discussing methods and interpretations of the acoustic ambiguities of Neolithic monuments.

Less ambiguous soundscapes are the Greco-Roman amphitheatres discussed by Eleonora Rocconi, who marshals Classical sources on acoustics and architecture and demonstrates that '*there was indeed amongst the ancient Greeks and Romans an acoustic intentionality . . . which was mindful of acoustic laws, even if their scientific approach was mainly an empirical-deductive one*' (p. 75). In sum, each of these studies focus on the issue of intentionality, i.e. whether an archaeological site or artefact was intentionally selected or modified based on its aural properties.

I understand the importance of intentionality, but it is frustrating that so many authors fail to explore the social implications of prehistoric intentions. Only a few of the authors consider what the instruments and acoustic spaces were intended to do. An exception is Iain Morley's survey of hunter-gatherer music that draws '*attention to the diversities and similarities of musical behaviours and instrumentation and to the implications which these hold for the use of acoustical space in the past*' (p. 96). His conclusions? Music and dance '*may have an important role in engendering group cohesion and altering mood*: most attendees participate in the music unless there are ritual roles assigned to specific individuals, most of the music is vocal and percussive, and some music is lyrical while other sound '*consists of non-lyrical vocables and animal sounds*' (p. 103). Ezra Zubrow and Elizabeth Blake also consider intentionality, but as one, although important, issue in the larger problems of the prehistoric transition from pre-music to music. They propose a hypothesis linking human heartbeats, the tempo of flint knapping and the origins of rhythm, just one element in an interesting article that serves as a research design into prehistoric sound systems.

Again, these papers generally avoid discussing the social implications of prehistoric sound. This avoidance is partly due to the original conference's emphasis on intentionality, but clearly most archaeologists would be interested in the social significance of sound. Were prehistoric sound systems creations vital for

human adaptation or are they epiphenomena? Is evidence for acoustic intentionality correlated with other developments in the evolution of mind (e.g. with other symbolic systems)? What is the social significance of correlating rock art placement and echoes, and what does it imply when other sites of the same cultural traditions (e.g. the Barrier Canyon Rock Art style that Waller studies) lack those acoustic properties?

As an archaeologist who has written on the ancient experience of place, I wish these volumes had been published sooner, as they represent major advances in the reconstruction of aural experience. Further, they are valuable resources for thinking about how an

'archaeology of the senses' might proceed. These two books leave numerous questions unanswered, but point to new directions for archaeological research into the sound of the past.