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Using Soundscape Ecology in Design and Function | Vol. 14 (2016), Short Notes

Wieteke Holthuijzen

The following Short Note on environmental aesthetics was guest-edited by Tom Baugh.

Although broadly defined, environmental aesthetics tends to focus on the aesthetic value of human and human-influenced systems in addition to that of natural systems. It places strong emphasis on physical manifestations, often analyzing the design and function of structures. Sound, however, is rarely identified as a critical component of an aesthetic analysis. This short note examines soundscape ecology—an emerging discipline in ecology—and its strong ties and potential contributions to environmental aesthetics.

Soundscape ecology, as put forth by Pijanowski et al. in 2011, broadens the field of bioacoustics to include not only the study of biophony (sounds created by organisms), but also geophony (nonbiological, ambient sounds such as wind, storms, rain, and rivers) and anthrophony (sounds caused by humans and human-related activity)—collectively referred to as the “soundscape” of a given landscape. Pijanowski suggests that “processes occurring within landscapes can be tightly linked to and reflected in patterns of sounds in landscapes.” Thus, the soundscape provides a wealth of information about a particular landscape. In addition, its acoustic patterns over various spatial and temporal scales can be used to evaluate its state or processes that transpire therein. For instance, Bernie Krause used sound as a proxy to determine ecosystem health through his underwater recordings of coral reef ecosystems in Fiji before and after bleaching events. Sound recordings can also serve as a (rough) index of biological diversity, in which a species’ presence is determined by its recorded vocalization(s).

The interactions between the soundscape and the organisms that inhabit a landscape can be quite complex and unexpected. For example, if a threat is perceived, an individual organism may sound an alarm to alert its kin and mate. Such calls can also be eavesdropped upon and shared by other species so they can take appropriate action. In human influenced systems with “noisy” soundscapes, anthrophony may mask such alarm calls and inhibit them from being communicated to specific audiences. This, too, is the focus of soundscape ecology: how anthropogenic sounds affect soundscape function and composition, how soundscapes differ with land-use patterns, and how species coordinate communication and vocalizations across different landscapes. The results of this research complements other ecological information and helps to create more effective and holistic approaches to conservation.

Beyond “natural” systems, sound is an important component of our day-to-day lives and has an explicit aesthetic value. Moreover, sounds influence our perception of our environment and direct—to some extent—our behavior. For example, relaxing music in airports and hospitals induces feelings of calmness and comfort, yet upbeat music can make consumers buy more products in a grocery store. On the other hand, white noise pumped into office settings shields office workers from unwanted distractions. Just as in more natural settings, the soundscape provides us with much information about a certain location.

Some structures are specifically designed around sound. For instance, theaters and concert halls are constructed in such a way that sound emanating from the stage is amplified and reflected back to the audience. Other structures inhibit sound, as seen (or heard) through sound walls along busy motorways that reduce (unpleasant) noise. This then begs the question—what message should sound convey?

With the construction of transportation networks, office buildings, neighborhoods, and more, we ought to evaluate these collective effects on the soundscape. While this is done to a certain extent by federal and state agencies, sound is considered only within basic and limited measures such as frequency (pitch) and amplitude (loudness). For example, strict regulations by the Federal Aviation Administration that ban all supersonic flight by aircraft over the United States represent an intersection between soundscape ecology and environmental aesthetics. After all, we may not want sonic booms going off overhead in our neighborhoods. But this does make the question of sound’s aesthetic nature salient—and what constitutes the difference between sound and noise (likely non-aesthetic)? And why?

We must think of sound as part of the structure or environment in question and also as a product. Just as we analyze the visual aesthetic nature and value of a structure and its function, we must consider sound as an equal factor. For instance, we might ask what sounds (or noise) a structure will produce. Will the sounds produced (before, during, and after construction) mask the surrounding soundscape? Will we need to mitigate for potential negative impacts? How will we do that?

And so, soundscape ecology invites us to take sound into consideration and broaden the field of environmental aesthetics. After all, our environment is one of interaction and complexity. In turn, a greater awareness of soundscapes in human systems may ultimately lead to more acoustically aesthetic and sound designs of structures and environments.

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Reference

B.C. Pijanowski, et al., "Soundscape Ecology: The Science of Sound in the Landscape," *BioScience*, 61(3), (2011), 203-216. DOI: 10.1525/bio.2011.61.3.6.