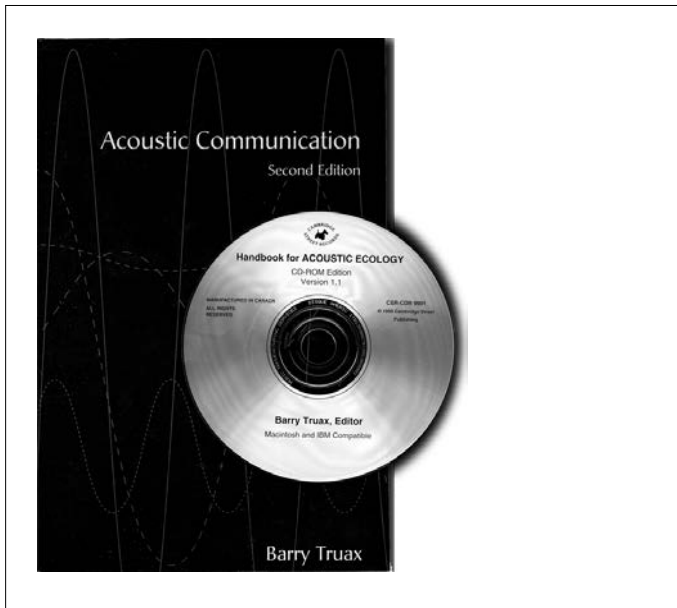


Book Reviews (continued)



Acoustic Communication [2nd Edition] (2001)
Author: Barry Truax

Ablex Publishing, Westport, Connecticut.
ISBN: 1-56750-537-6 <http://www.ablexbooks.com>

Reviewed by Kendall Wrightson

Launch your web browser, take a trip to the “Google”¹ search engine, type in “Acoustic Ecology” and press return. The top three hits will point you to the *World Forum for Acoustic Ecology*², this journal³ and to the *The Sonic Research Studio, School of Communication, Simon Fraser University*⁴, a page maintained by Professor Barry Truax.

As a member of the original *World Soundscape Project* (WSP)—an educational and research group established by R. Murray Schafer at Simon Fraser University (SFU) during the late 1960s and early 1970s—Barry Truax has been working in and around the interdiscipline of acoustic ecology for over thirty years. His two most significant contributions to the subject are the *Handbook of Acoustic Ecology* (1978) and *Acoustic Communication* (1984). These two volumes—and R. Murray Schafer’s *The Tuning of the World* (1977)⁵—constitute the entire library of published books relating directly to acoustic ecology. It is, therefore, welcome news that the most recent textbook relating to ecoacoustics is no longer seventeen years old, as this year sees the publication of an updated, second edition of *Acoustic Communication*, reviewed here.

For Truax, the major changes occurring between editions are firstly a massive leap in technology and secondly, a large number of relevant publications many of which are mentioned in the updated text. Truax has also taken the opportunity to include a CD ROM with the second edition. This disc contains all the descriptions from the *Handbook of Acoustic Ecology* in html (web page) format—over 500 terms from the fields of acoustics, psychoacoustics, environmental acoustics, electroacoustics, mu-

sic, linguistics, audiology, and soundscape studies. The CD represents an incredible resource with many entries containing detailed graphics. The CD also includes over 150 sound clips and relevant examples are listed at the end of each chapter.

As with his 1984 original, Truax takes the philosophy—and the soundscape descriptions—introduced in Schafer’s inspirational *The Tuning of the World* framing these within a coherent, communicational model in which to analyse soundscape phenomena.

The relatively new academic discipline of Communication focuses upon *information*; “. . . how it is created, shared, distributed, consumed and used”—to quote SFU’s School of Communication web site⁶. The first chapter contrasts the energy exchange/signal processing model used in acoustics with the communicational approach. The latter places the emphasis upon the *information* in sound, its meaning for the listener and the interlocking behaviour of sound as a system of relationships. The contrast between the “energy transfer” and the communication approaches highlights the major change of mindset required not only of educationalists like myself (whose knowledge of sound has been learned via a signal processing model), but also for environmental acousticians, legislators and even the general public. For all of these groups, sound tends to be treated as an isolated object in the environment and the individual—the listener—becomes a human sound level meter whose sole relationship to sound is a function of its intensity.

In reaction to this statement, environmental acousticians will point to the various sound intensity/pressure scales that attempt to factor in location—or type—of sound, human physiology (our sensitivity to the certain parts of the frequency spectrum) and psychology (scales that take into account subjective reactions such as “annoyance”).⁷

While these scales have their uses, there is more—much more—to our relationship with sound and the environment *through* sound, just as there is far more to our relationships with ourselves and with each other than could ever be described in a library full of novels, science and psychology text books.

An example of the sophistication of our relationship with sound appears in Chapter 2 (entitled *The Listener*). Here Truax notes how an accurate recording of a sound event is often less successful in evoking a sound memory than a “skilful simulation that simplifies and idealises it” (p30). I can vouch for this; when working on a play that required the sound of a WW2 air raid siren, a BBC recording of the real thing was rejected by the author (who lived through the event) in favour of a synthesised version that had her trembling as soon as she heard it. Chapter 2 also examines modes of listening—background listening, listening “in search” and “in readiness”—and the soundscape terminology that first saw publication in *The Tuning of the World* (keynotes, sound signals, etc.).

Chapter 3 concentrates on the human voice and on human soundmaking covering language, the acoustic structure of dialogue, the techniques of acoustic persuasion and the concept that the human voice reflects the whole person. In this chapter, as in all chapters, Truax makes extensive reference to the literature that informs his research.

In Chapter 4 Truax develops a more theoretical survey of what he describes as the three major systems of acoustic communication—speech, music and the soundscape. These, he suggests, form a continuum and he makes a case for the significance of ordering them as listed above before developing a model that relates *sound* and *meaning* via *structure*. “At the most basic level of each system [speech, music and the soundscape]” he notes, “we find that sound is in some way ‘organised’ and that through the structure of this organisation, meaning can be inferred.” (p55). The organisational

structures—such as syntax and paralinguistic structures (in language), compositional rules (in music) and elements of the sound environment and their context (in soundscapes)—require a level of competence from the listener. This leads Truax to postulate a “soundscape competence”, just as others have described linguistic and musical competence.

As with speech and music, our ability to decode the structures of—and infer meaning from—the soundscape is a skill that can be taught and developed. Unfortunately, the listener faces a significant challenge in what should be a natural evolution of soundscape competence as *s/he* grows up in today’s (acoustic) communities: the relationship between the individual and the soundscape is damaged; the balance of the acoustic ecosystem has been upset. The information-rich, “hi-fi” environments of pre-industrial times have, for many of us, been replaced by loud, low-information, bass-heavy sound-walls in many of the environments we experience day-to-day. Where some pre-industrial communities could be characterised by their unique soundscapes, contemporary city soundscapes the world over feature the same “keynote” sound—traffic.

The current state of many acoustic communities and the isolation and alienation that, Truax suggests, the “lo-fi” soundscape engenders is discussed in Chapters 5 and 6. These draw upon the work of the World Soundscape Project (WSP), the first group to analyse acoustic communities and the first to define environmental characteristics that promote effective communication; i.e. to frame the issue positively (How can we improve communication?) rather than negatively (How can we reduce noise pollution?).

Chapters 5 & 6 (the *Acoustic Community* and *Noise & the Urban Soundscape* respectively) also offer the evidence that soundscape competence has been significantly eroded. Soundscape pollution erodes soundscape competence which in turn creates soundscape pollution. . . a spiral of dysfunction. The spiral has led to what Truax describes as an “ideology of noise”—an ingrained way of thinking about noise problems that is so entrenched it prevents a solution from ever being found.

It is to solutions that Truax turns in Chapter 7 to close Part I of the book. Noting that the majority of the literature discussing noise pollution deals with *symptoms* (i.e. the effects of noise), it is no great surprise that the solutions offered to combat the problem are effectively acoustic sticking plasters—limits to sound levels and exposure times, baffles, double glazing, ear defenders, and “acoustic perfume” (using one sound to cover up another). Truax is more concerned with the *causes* of noise pollution—for example the lack of awareness of how sound functions within the community and a diminishing soundscape competence.

This lack of awareness breeds generations of product designers who have little or no awareness of the potential of sound in product design. For many designers, sound is a non-issue unless its level is likely to breach legally enforced limits. Truax argues that if designers had a better knowledge of soundscape issues, they might consider the sound of their device in the context of its contribution to—and place within—the soundscape. Such “acoustic design” puts into practice Schafer’s philosophy that we are responsible for the world soundscape; we are its composers.

The effect of technology on the world soundscape, particularly since the industrial revolution, has been profound. An analysis of this impact is the subject of the second part of *Acoustic Communication*. Here, Truax notes two main technologies contributing to the changing patterns of acoustic communication—electroacoustics and electromagnetic broadcasting (e.g. radio). The former refers to any sound that exists as an electrical signal.

An electroacoustic signal may be generated electronically (such as a mobile phone ring tone) or it may have been originally acoustic (a variation in the pressure of a medium, air for example) transformed into an electrical representation via a microphone.

Electroacoustic recordings make sound into an object which can be bought, sold and copied. Live or recorded sound can be broadcast—as electromagnetic radio signals—over a far wider area than is possible even with electroacoustic amplification. With electromagnetic propagation of electroacoustic signals, the soundscape of a living room can be almost identical across a continent. Chapter 8 explores this “objectification” and commoditisation of sound and broaches the psychological effects of the *virtual* soundscapes created by electroacoustic and broadcast technologies. There are some big questions to be considered here, for example: What are the effects upon individuals, society and the soundscape when we choose to replace the natural sonic environment with a virtual or “schizophonetic” soundscape?

This question is addressed in Chapter 10, which focuses upon the way in which listening processes, listening habits and our new level of control over the soundscape have changed thanks to technology. In order to better describe these ideas, Truax uses Chapter 9 to explain electroacoustic concepts and processes such as signal dynamics, frequency response, oscillators, etc. The accompanying CD ROM will prove useful for readers approaching these concepts for the first time, thanks to its many sound examples.

As with most technological innovation, electroacoustic and radio technologies offer incredible benefits but also raise significant issues about the way in which we choose to use them. Chapter 10 makes this point in describing how high quality recordings make possible an incredibly focussed form of analytical listening. On the other hand, the same technology can be utilised to create a “sound drug” and develop distracted listening habits that erode our ability to be psychologically present.

Truax devotes Chapter 11 to a detailed case study of audio media—radio. Describing the relationships between the form and content of radio broadcasting (its limited dynamic range, programming, styles of vocal presentation and so forth), Truax describes the techniques used to maintain audience attention and that promote distracted listening. The level of manipulation through sound in radio broadcasts, particularly in commercial radio, is likely to surprise you. “Don’t touch that dial . . .”

The commoditisation of sound receives further attention in Chapter 12—*The Acoustic Community as a Market*. Here Truax describes the implications of the increasingly ubiquitous “moozak”—the acoustic perfume from which many of us believe we may never escape. The chapter closes with a brief discussion of the impact of electroacoustic technology on community design.

The final two chapters describe positive uses of electroacoustic technology such as sound documentation and soundscape archives. However, the main focus here is electroacoustic composition (including composition using pre-recorded soundscapes). For those interested or involved in the genre, Truax—a notable practitioner—has a lot to offer including a vastly expanded and updated discography. For this reader, however, these chapters do not provide a satisfying conclusion to the issues raised previously. One might have expected chapters subtitled “regaining control” to consider methods of tackling the causes of unbalanced soundscapes. To be fair to Professor Truax, communication, like acoustic ecology, is an interdisciplinary, and with two interdisciplines to deal with the range of available threads and themes is vast. It is therefore appropriate that the final chapters reflect their author’s particular interests—Truax describes himself as an *Electroacoustic*

Composer first and *Acoustic Communication Researcher* second⁸.

Acoustic Communication is an invaluable text book for those involved in social science in general and communication studies in particular. However, Truax is aware that since the first edition; "... communication professionals ... continue to ignore perceptually based approaches"; and "the theme of technology's impact on communication is seldom informed by any sense of how communication functioned aurally prior to that impact." Perhaps, Truax wonders, "... they are all overwhelmed by the information society (p xii).

For those involved in one of the audio-related disciplines, *Acoustic Communication* offers a radical way to approach sound that will promote a broader and deeper understanding of sound and the relationships between sound, the listener and the environment. (These disciplines will also find the accompanying CD ROM extremely useful as a reference and teaching resource.)

My sincere hope is that this book might find its way into a large number of libraries and institutions of learning; the message of this work—and of the acoustic ecology movement—needs far greater exposure if our relationship with the world and with each other—through sound—is to improve.

The issues Truax raised in the 1984 remain substantially the same; "How do we reinvigorate the listener's interaction with the environment through listening; how do we design our soundscapes on a functional, human scale and how do we distinguish the net gain offered by technology from its hype and oppressive aspects?" (p xii).

The last question is harder to tackle; the impact of electroacoustic and electromagnetic technology is set to change the soundscape—and our relationships with it—still further as the two technologies collide courtesy of a new generation of mobile, wireless audio/visual devices. With these new gizmos (and the new audio/video distribution paradigms they utilise), the individual will be able to listen to any sound—any recording, any radio station—anywhere, anytime.

There will of course be real benefits afforded by these devices, but the potential for increased and sustained isolation not only from the sonic environment, but also from the visual environment—in effect reality itself—could impact society in ways we can only begin to imagine. But that's the subject of another book yet to be written.

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Endnotes:

1. <http://www.google.com/>
2. <http://interact.uoregon.edu/MediaLit/WFAE/home/index.html>
3. <http://interact.uoregon.edu/MediaLit/WFAE/journal>
4. <http://www.sfu.ca/sonic-studio/>
5. republished in 1994 as *The Soundscape*, Destiny Books, Rochester, Vermont.
6. <http://www.sfu.ca/communication/about/history/index.html>
7. The CD ROM offers descriptions of several of these, including Composite Noise Rating, Noise and Number Index, Noise Criterion, Noise Exposure Forecast, Noise Exposure Forecast, Noise Rating, Perceived Noise Level, Preferred Noise Criterion and Traffic Noise index.
8. <http://www.sfu.ca/~truax/>

Available Soon:

Sonic Geography Imagined and Remembered is a collection of ten essays on the relationship between acoustic ecology and culture inspired by the international conference Sound Escape, held at Trent University in 2000. The book reflects the productive tension currently charging the interdisciplinary field of acoustic ecology, between the ethnographic and empirical work first initiated by the World Soundscape Project (in 1970), and an emerging cultural critique.

Sonic Geography Imagined and Remembered will be published this spring by Penumbra Press, under the auspices of the Frost Centre for Canadian Studies and Native Studies at Trent University. The collection is edited and introduced by Ellen Waterman, who is Assistant Professor in the Cultural Studies Program at Trent University. *Sonic Geography...* includes essays by both scholars and artists from 8 countries, and is organized in five sections.

Introduction: Mapping Sonic Geographies
by Ellen Waterman

Section One: Empirical and Cultural Ethnographies
Memory and Acoustic Environments: Five European Villages Revisited, by Helmi Järviluoma (Ethnomusicologist, Finland).

What Difference Does Difference Make? Sonic Cleansing and the Search for the Uncontaminated Other in Toronto's Cuban Music Scene, by Brigido Galvan (Ethnomusicologist, Canada).

Section Two: Sound Design and the Museum
Electroacoustic Soundscapes: Aesthetic and Functional Design, by Nigel Frayne (Sound Designer, Australia).
A Reclamation of Sonic Geography of Mount Tateyama, by Keiko Torigoe (Sound Designer, Japan).

Section Three: Radiomakers
Location Location Location: a Scrap of a Map of Mannlicher Carcano, by Doug Harvey (Art Critic/Audio Artist, U.S.A.).

Radio & Aural Destabilization #6: Memories of Physical Locations and Ethereal Dislocations, by Bart Plantenga (Pirate Radio DJ, writer, Netherlands).

Section Four: Composing the Soundscape
Sonic Spaces of Poland: the Atlas of Symbols, by Lidia Zielinska (Composer, Poland).

Going Upcountry: Electroacoustic Composition between Documentary and Abstraction, Technology and Tradition, by John Wynne (Composer/Ethnographer, England).

Section Five: The Ethics of Acoustic Ecology and Art Engagement with Sound, by Gayle Young (Composer, Instrument Inventor, Canada).

The Local and Global "Language" of Environmental Sound, by Hildegard Westerkamp (Composer, Canada).

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