
Kids, Noise, and Orchestrating the Soundscape

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Introduction

Ecology is the study of biological systems and the effect external and internal forces have on such systems. Educational efforts in this field are increasingly important as humankind strives to preserve and rehabilitate a world environment which has suffered from human excess.

The pollution of rivers, oceans, and the air, is frequently mentioned when concern about human interference with ecosystems is expressed. However, little attention is given to the "sonosphere", or soundscape within which human and other living creatures all exist.

Human generated noise is perhaps the most pervasive pollution we have in our world today. At home the vacuum cleaner, refrigerator, dish washer, garbage disposal, stereo, television, radio, air conditioner, and alarm system, all hum and whirl with unpleasant sound.

Outdoors we become even louder with our use of lawn mowers, leaf blowers, weed eaters, cars, trucks, jet planes, and amplified music blasting at ear splitting levels leaving future generations nearly deaf.

Noise is not a new concern for humankind. Benjamin Franklin moved from one Philadelphia home to another because market noise interrupted his conversations with friends. The cracking of whips by teamsters once grated on the nerves of Arthur Schopenhauer, the philosopher, as trade wagons rolled past his home. The soundscape was forever changed when humankind began to convert natural energy into mechanical and electrical power for human need.

The term "soundscape" refers to the acoustical environment. In nature we hear a soundscape rich in crashing waves, wind, rushing water, animal sounds, and occasional quiet. A human centered soundscape is one most frequently characterized by the chaotic noise of our cities or the skies above. Murray Schafer, the Canadian composer and researcher, suggests that the soundscape must be studied and given equal consideration with other environmental issues. Acoustic-ecology is an emerging field that addresses concerns about the soundscape.

Unlike sight, which we can turn off by closing our eyes, sound is constantly heard - even while we sleep. Sound is critical to our daily existence in that it provides us with an acoustical reference to events around us - many of which are often out-of-sight. For instance, we can hear the fire engine's siren long before we see the truck approaching. We hear bird song in the morning though we may never see birds. We hear distant thunder which warns us of an approaching storm.

The following four examples illustrate human interest in modifying, eliminating, preserving, or giving special attention to specific sounds within the soundscape.

- A number of citizens of San Francisco, the city by the bay known for its unique architecture and setting, recently prevented what they thought could be a cultural tragedy. The US Coast Guard had replaced what many thought to be the romantic sound of foghorns, with a new high pitched electronic signal. Residents rebelled and, after much effort, the Coast Guard agreed to allow a non-profit group to operate at their own expense, two or three of the ancient foghorns. The citizens group wanted their acoustical environment to sound as they believed it should and were willing to contribute to continuing a favorite soundmark within their community.
- According to a Portland, Oregon city ordinance, street music can't be legally heard more than 25 feet away from the performance site. Unfortunately for several street musicians their music broke this boundary rule. At least three individuals were cited for being a public nuisance during the summer of 1993 . Several musicians have complained that the city is trying to 'eradicate' the street musician. The anti-noise complaints were originally generated by people who had to work in offices while listening to street music which they found distracting.
- Gordon Hempton is a NW Washington State area resident who hunts vanishing sounds. Hempton, using a binaural recording system that closely replicates the natural world when played back through headphones, travels around the world collecting sounds that are free of human generated automobile, jet, and motor sounds. He composes his compact disc albums around aural themes such as a dawn chorus, or old growth forests. These recordings may eventually provide the only opportunity for future generations to hear the natural world as it was, free of human activity.
- The Seattle Arts Commission's Art in Public Places Program recently commissioned artist David Mahler to create, for public distribution, a 4x9 inch double sided display card with text and graphics titled, Seattle Sounds Downtown. The purpose of the card is to encourage people to stop and listen to the sounds of the city. It helps the listener focus attention on both the unpleasant and pleasant sounds of the Seattle. Mahler notes that sea gulls and other birds can be heard above the din of traffic. He asks the user to listen to the great waterway Seattle is built upon and the many lakes, pools, and waterfalls, that dot the city. He also notes places which facilitate human communication such as the Pike Place Market. Here the human vocal energy is evidence of the need for people to talk in a supportive environment.

Soundscape Studies

Humanity has increasingly lost its connection with world of natural sound. The majority of today's students live in urban settings. Modern life bombards their sense of hearing with chaotic noise broken, only infrequently, by the hum of insects and the sound of stormy weather.

The study of the soundscape encourages students to explore both natural and human made acoustical environments. Principle learning goals include: understanding how sound affects our lives, determining what sounds have come to dominate, recede, or become lost in the sonosphere, and how people can individually or collectively work toward orchestrating the soundscape to enrich life.

Soundscape studies can be organized at several levels using a variety of approaches. The experiences, outlined here, will help children discover the world of sound within their immediate surroundings and will facilitate their making intelligent decisions about the quality of the acoustic environment.

Exploring acoustical spaces and surfaces

Each environment will modify a sound which is generated within, or enters into, that space. The classroom is one example. Students, with their eyes closed so as to focus on listening, will hear a wide array of sounds. They may hear subtle movements within the room such as paper shuffling, a tapping foot, or even the beating of their own heart. Sounds from outside the classroom will become noticeable. Students may hear passing auto traffic on the street, activity on the ball field, or movement within the hallway. The sounds they hear will be influenced by the shape, contents, and surface characteristics of the classroom.

Further awareness of acoustical spaces can be generated by having students record onto audio tape a short narrative script using a variety of acoustical sites such as hallways, stairwells, and carpeted rooms. Paired students, at each location, record a brief spoken segment. They discover, on playback, how the shape, texture, and other acoustical features of a given space have affected the quality of their narrative. The highly reflective surfaces of a long school hallway, for example, will create reverberating echo-like characteristics. Similarly, the narrative recorded in a highly upholstered room, will seem flat and have very little reverberation.

Students might follow-up this activity by elaborating upon their observations and note how varied environments modify sound characteristics. A class could then explore reasons for architects and designers to give attention to the acoustical quality of spaces when creating living and working areas. Students then generate a list of suggested changes they would make to their own classroom, or home environment, to create a better soundscape environment within which to live and study.

Mapping the soundscape

Making a sound map of one's neighborhood is an interesting activity. A child begins by drawing a map on paper which represents one square block around his or her home. The student, with home as a base, sets out on a walk around the block and notes the location of specific sounds on the map. A student, for example, may hear the barking of a dog a short distance from home. Further on, the sound of an ice cream truck approaches. Around the block there is a family sitting on the front step talking. All sounds are continually noted on the map until the student circles the block and returns home. A tape recorder is an excellent supplementary tool for recording sounds one hears along the way. A recorder may pick up many sounds which a child might have overlooked and these can then be referenced later.

Once the task is completed the child then evaluates the collected data. The information is classified into: (1) Sounds that were a pleasure to hear, (2) Sounds that were unpleasant and, (3) Sounds that were brief and transitory within the soundscape. The map and data base will facilitate a student's understanding of the neighborhood soundscape.

The goal is for a student to determine what he or she believes are important sounds in the fabric of the neighborhood, sounds that are particularly pleasant and might be given more emphasis, and what sounds are distracting, alarming and which may adversely affect the quality of life. Students can be encouraged to ask the question, 'What sounds would I keep, modify, or eliminate if I could orchestrate the soundscape where I live?'

This activity works equally well with children in suburban communities or rural areas. The farm child, for example, would map an area outside the house that may include the barn, fields, and other areas of the environment in which he or she lives.

Time of day and its effect on the soundscape

A third activity studies the effect the time of day has on the neighborhood soundscape. Cities, for example, have a particular daily rhythm. Before dawn the sound of garbage trucks and street sweepers can be heard making their rounds. Bus and automobile traffic increases as people leave for work. By mid-day the city is at its peak with shoppers and workers fully involved in their daily activities. With evening, the pace changes and so does the soundscape as entertainment and recreation becomes the focus of city life. After a brief nocturnal respite, the cyclical pattern begins again modified only by weekends, holidays, and an occasional storm.

Similarly, country sounds are less human made and more natural. The quiet of dawn is broken by bird song and a definite pattern generated by the natural flow of life resulting in a soundscape much different than that of the city.

Children can keep a log of sounds they hear throughout the day. Here a tape recorder is also an effective tool. A timing device can be set to turn on/off the recorder at specific times. A time-lapse recording is generated which condenses a full day's acoustical activity into a compressed audio log. The student then can analyze the recording and discover the cyclical sound patterns within his/her environment.

Modifying or orchestrating the soundscape

A Chicago Tribune article noted that the Rio International Airport has become an attraction for citizens and travelers alike. People visit the airport, not to see its architecture, but to listen to the 'trembling, hypnotic, deep, breathless, and beautiful voice' which announces the daily departure flights. In a time when terminal announcements are rarely clearly heard, Rio has modified their informational system so as to attract and please the listener. A major contribution has been the selection of Iris Lettieri, a former actress and media reporter, as the flight arrival and departure announcer. She has perfected a vocal style that has eliminated the annoyance many find listening to terminal announcements. Her style enriches the sound of a busy terminal building.

Though we can't orchestrate the natural world, we can decide how to improve our own human sound environments as exemplified by the Rio airport terminal experience. We have the ability to give emphases to those sounds that we believe are important to our sense of a quality environment.

Orchestration is an act which focuses on the combining or arranging of sound in a harmonious manner. This means that we may bring sounds to the foreground which have a particular quality, such as the fog horns in the bay at San Francisco. Or we may want to reduce the dominance of one or more sounds, such as the effort to remove street musicians in Portland, Oregon.

As modern society creates an increasingly noisy environment, architects try to compensate by raising the sound level of air condition systems to mask noise from outside a building. Developers plant trees or build fences along freeways to block unwanted sound. Thousands walk or jog around city streets masking out the acoustical pollution with audio headsets.

Environmental sound issues are frequently addressed by seeking temporary solutions to complex problems. A restrictive law may avoid more acceptable alternative options. A community may best be served by preserving those sounds it finds pleasant, or which have a particular cultural value. Other sounds might be added, modified, or if needed - eliminated.

Public administrators make most decisions about orchestrating a community soundscape - usually through noise ordinances. Children can learn to make choices which often improve the environment over which they have immediate control. This begins with students cataloging those sounds which have specific meaning in their lives.

Understanding how sounds effect one emotionally is important when learning about sonic environments. It is suggested that students generate a multi-column form. In column one is listed the sounds which are a part of their immediate environment. Sounds are classified in column two as being informational (like an alarm clock to wake one up), pleasurable (a wind chime outside a window), or distracting (a noisy leaf blower). Students then identify, in column three, an emotional response each sound creates when it is heard. Column four is used to note possible options for modification or elimination of a sound. The student also notes how these changes might alter the emotional factors listed in column three.

A student may discover that there are sounds which he or she can change to make life more enjoyable. Perhaps by hanging a feeder outside the window bird song can be enhanced. Maybe moving one's bed from one end of the room to another, the sound of outside traffic will be reduced. It could be that opening a window will let in the sound of a gentle breeze through the leaves of a favorite birch tree. A child should explore any number of options to create and enhance a pleasant soundscape in which to live. The understandings students develop about the nature of the soundscape will facilitate decisions later in life related to their creating a community in which it is more acoustically pleasant to live.

Summary

It would seem that silence would be a rare and choice experience to have in our modern world. However, there will always be noise and it is the decisions we make about orchestrating our soundscape that will be important to us and our future generations. Teaching children about the soundscape and helping them understand that they can create options for the environment is important. Sound pollution is one of the major problems over which we do have control if we give it attention. That attention comes through learning and awareness.

Readings Of Related Interest

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