Aural Spatiality: Hearing Events in Space

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Survival Value of Hearing

The mammalian auditory cortex answers these questions:

- What is happening?
- Where are events located?
- Where should you look?
- Where are you?
Music and Sound Art

Modern aural artists use trial and error experiments in order to discover those evolutionary properties of the auditory system that have artistic meaning.

The aural arts are based on neurological artifacts.
Uniqueness of Sound

1. Flows around obstacles, into openings
2. Reveals the interior state of objects
3. Requires energy to create
4. Disperses over large distances
5. Contains time: never static
6. Time, frequency, and direction sharing
7. No respect for private property
Sound Transports Events

1. Mechanical energy creates sound
2. Natural and human events
3. Temporal sequence of events
4. Language of sound based on events
5. Events can broadcast over wide area
6. Events compete for our attention
7. Events evokes sense of place
Uniqueness of Hearing

1. Evolutionary optimization for survival
2. Influences action and reaction
3. Echolocation among many species
4. Controls direction of visual focus
5. No ear-lids, involuntary connection
6. Early warning system: 24/7 always on
Soundscape is an Eventscape

An aural event is a natural, intentional, or accidental conversion of mechanical energy into sound, which is then broadcast to the inhabitants of a space.

An eventscape is the composite of temporal & spatial distributed dynamic events that are transported to listeners.
Perceptual Labeling of Events

- We perceive sonic events not sound
- There is no language for sound itself
- Events are tagged: good, bad, neutral
- Connects us to external world
- Events are always dynamic energy
- Sound is only a transport mechanism
Where Are You Now?

You exist in a landscape of static objects and in an eventscape of dynamic activities.

We hear events and see objects.
Bilateralism of Sound and Space

1. Recognizable events are associated with particular spaces.
2. Spatial acoustics changes how events are transported to consciousness.
3. Sound “illuminates” spatial objects and geometries.

Space ↔ Sound
Events Identify the Place

- Crowd at Sports Arena
- Deep in African Forest
- Passing Freight Train
- Inside Busy Restaurant
- Ocean at Rural Beach
- Running in Hallway
Spatial Acoustics Change Events

- Dry (close)
- 30 ft tank
- Vienna Konzerthaus
- Ferry Car Space
- Elevator
Musical Spatiality

- Reverberation as temporal spreading
  - Meta-instruments incorporates temporal spreading
  - Created by performance space (recording studio)
- Reverberation as spatial spreading
  - Enveloping reverberation as aural caffeine
  - Created in reproduction topology and space
- Artistic space: with contradictions
- Musical rules in electro-acoustic space
- Concert hall does it all: historic artifact
Stockhausen in Jeta Caves
Amsterdam Concertgebouw
Sound Illuminates Environment

- Open Plains
- Small Bathroom
- Living Room
- Large Tank
- Large Atrium
- Wall Reflection (echo)
- Open Plains
Navigational Spatiality

Hearing passive objects & geometries

- Open door way
- Nearby wall
- Rugs and upholstery
- Size of closet, cave, cathedral
- Low ceiling
- Curved and domed surfaces
- Volume of enclosed space
Blind Teenagers in Mountains
Aesthetic Spatiality

- Unique local acoustics
- Spatial variety and diversity
- Aural wallpaper
- Reduces sensory boredom
- Often artifact of visual embellishments
- Spatial niches with unique personality
Sempere’s Sculpture in Madrid
Coupled & Overlaid Eventscapes

- Baboon in reverberant cave embedded in forest.

- Identifying event, spatial acoustics changes event, and audible spatial attributes.
One Aural (Social) Space, Two Physical Spaces
Overlaid Eventscapes

Existing in multiple eventscapes (aural spaces) at the same time

- Functional deafness
- Democratic
- Individual control
- Double exposure
Definition of Aural Architecture

The aural influence of passive objects and geometries on the emotions and behavior of inhabitants of a space.
Experiential Dimensions of Aural Architecture

- Social spatiality
- Navigational spatiality
- Musical spatiality
- Aesthetic spatiality
- Symbolic spatiality
Aural Architecture Changes Experience of the Eventscape

- Modifies emotional connections
- Partitions events into regions
- Influences behavior of inhabitants
- Sound modified when transported
- Changes winners and losers in aural combat
- Cultural preferences: season to taste
- Auditory spatial awareness is learned
- Inadequacy of common language
Definition of Eventscape

Audible Eventscape =

Aural Architecture + Sonic Events =

Experience of Place and Space