# Digital Sound Capstone DXARTS 460

Lecture 6: Aural awareness

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- What is digital music?
- Why make music with computers?

Why make music with computers?

A myriad of sound synthesis programs exist based on models related to instrumental music or to the design of a traditional analog electronic studio. (...) They all require the use of a computer because of the magnitude of the task. For many, this is perhaps the only reason why they require the use of a computer. It is a valid reason, but it is certainly not the most interesting one. More interesting ones are:

to hear that which without the computer could not be heard; to think that which without the computer would not be thought; to learn that which without the computer would not be learned.

To ask what a computer can do for a composer or what you can learn from a computer is obviously within the realm of music

Paul Berg (1979). PILE: A Language for Sound Synthesis.

What is a digital musician?

What is a digital musician?

'A digital musician is one who has embraced the possibilities opened up by new technologies, in particular the potential of the computer for exploring, storing, manipulating and processing sound, and the development of numerous other digital tools and devices which enable musical invention and discovery."

Andrew Hugill, (2008). The Digital Musician.

What are some skills the digital musician ought to possess?

- What are some skills the digital musician ought to possess?
  - aural awareness
  - cultural and cross-cultural knowledge (of art)
  - musical abilities
  - technical skills

#### Also

- scientific knowledge
- creativity
- philosophical/querying mindset

### Listening | Pierre Schaeffer

- Establishes a theory of listening in his Traité des objets musicaux [1966] ('Study of musical objects)
- Hearing and the three modes of listening:
  - Hearing ('ouïr'):

'Perceiving by the ear, being struck by sounds'.

'The crudest, most elementary level of perception; so we "hear", passively, lots of things which we are not trying to listen to or understand'.

Example: 'Traffic noise is continuous outside my window, but I am not aware of it.'

#### – 'Casual listening ('écouter'):

'listening to someone, to something; and through the intermediary of sound, aiming to identify the source, the event, the cause', thus 'treating the sound as a sign of this source, this event'.

Example: 'I hear the sound of a car and do not cross the street'.

#### Semantic listening ('comprendre'):

understanding, or 'grasping a meaning, values, by treating the sound like a sign, referring to this meaning through a language, a code'.

Example: 'That piece of music made real sense to me and I enjoyed it.'

#### Reduced listening ('entendre'):

involves aural discrimination, or 'showing an intention to listen [écouter], and choosing from what we hear [ouïr] what particularly interests us, thus "determining" what we hear'.

Example: 'That sound has a texture which changes in a really interesting way'.

### Listening | Denis Smalley

- The 3 Schaefferian modes of listening are not mutually exclusive but may coexist
- According to psychologist Ernest Schachtel perceptual activity is:
  - Autocentric or subject-centred (taste, smell, proprioceptive perception)
  - Allocentric or object-centered (visual, aural)
- Smalley creates a synthesis or Schaeffer & Schachtel:
  - indicative relationship: sound as a message / information about environmental action
  - Reflexive relationship: subject-centered, about emotions
  - Interactive relationship: actively exploring the qualities and structure of an object. Embraces structural hearing, aesthetic attitudes, and Schaefferian reduced listening
- Also: 'Technological listening' (or 'recipe listening'):

'Technological listening occurs when a listener "perceives" the technology or technique behind the music rather than the music itself, perhaps to such an extent that true musical meaning is blocked'

### Listening | Murray Schaffer

#### Listening to the soundscape:

- Keynote sounds: sounds that are not heard consciously but give a 'tonality' to a soundscape
- Signals: foreground sounds that are listened to consciously
- **Soundmarks**: specially noted sounds that function as acoustic landmarks

### Listening | Barry Truax

- A 'communications' approach to listening
- [Listening] is a set of sophisticated skills that appear to be deteriorating within the technologized urban environment, both because of noise exposure, which causes hearing loss and physiological stress, and because of the proliferation of low information, highly redundant and basically uninteresting sounds, which do not encourage sensitive listening

#### • **Hi-fi** vs **Lo-fi** soundscapes:

Situations where signal detection is difficult or impossible may be termed "lo-fi" environments, by analogy to electroacoustic signals of poor quality, high noise, and distortion. The complementary situation, the "hi-fi" environment, is one in which all sounds may be heard clearly, with whatever detail and spatial orientation they may have

#### Modes of listening:

- Listening-in-search: 'the ability to focus on one sound to the exclusion of others'
- **Listening-in-readiness:** 'the process whereby we can receive significant information, but where the focus of one's attention is probably directed elsewhere'
- Background listening: 'when the sound usually remains in the background of our attention'

### Listening | Pauline Oliveros

- Sound as a means for (secular) mediation: sonic meditations
- Multi-dimensionality of sound: Sounds are temporal and spatial (...) listening is a spatial/temporal phenomenon. It includes the outside, but also the inner world

#### Forms of attention:

- Focal attention: 'like a lens, produces clear detail limited to the object of attention'
- **Global attention**: 'diffuse and continually expanding to take in the whole of the space/ time continuum of sound'

#### Loci of attention (similar to Schachtel):

- Internal
- External

### Listening | Katharine Norman

- Listening is a complex, multi-layered activity.
- The listener participates in the compositional process through listening

#### Three main types:

- Referential listening: connects sounds to objects
- Reflective listening: involves an enthusiastic appraisal of the sound for its acoustic properties
- Contextual listening: relates the sound to the context of the listener's individual history and memory

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NOTE: All images were taken from these books, unless otherwise noted