Soundscape composition as a distinct music genre

by ZHIYONG DENG, JIAN KANG, DAIWEI WANG

Citation


Abstract

The concept of soundscape was introduced by Canadian composer and ecology scientist Raymond Schafer in the 1960s. Its definition incorporates three main factors: audience, environment and the sound event with the features of keynote, signal and soundmark. From the 1970s, there have been suggestions from researchers, musicians and composers that soundscape compositions should be considered as a type of music: in particular, a sub-genre of electro-acoustic music. The aim of this paper is to systematically examine if soundscape composition is a new music genre. From the viewpoint of musicology, based on typical pieces, this paper will identify features and establish research frameworks of the soundscape composition. Musical analysis, feature extraction, and questionnaire surveys have been used to find the time-identifiability and spatial-identifiability related to pitch, melody, harmony and musical form. It is argued that soundscape composition should be regarded as a new music genre, and this presents new possibilities for the creation and performance of contemporary music, and a new concept of the sound ecology.
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Background

The concept of soundscape was introduced by Raymond Schafer with the purpose of improving people’s hearing ability with respect to their sound environment, and fostering the development of a sustainable sound ecology. The definition of soundscape includes three main factors: audience, environment and the sound event comprising the features of 'keynote', 'sound signal' and 'soundmark' (Schafer, 1993). Broadly speaking, soundscapes (and sound samples taken from them) can be divided into two genres: those related to human emotional, geographical and cultural expression, and those related to noise control in urban planning, architectural design and other acoustic engineering applications. Since the 1970s, with the development of electroacoustic music, new-age music and world music, soundscape samples and sound symbols have been used increasingly in contemporary musical compositions. More recently, there have been suggestions from researchers, musicians and composers that such compositions incorporating soundscapes should be considered as a type of music separate and distinct from genres with which it had previously been grouped (such as electroacoustic composition) (Harley, 2008; Truax, 2008; Wang & Deng, 2011). Table 1 lists some notable examples of soundscape compositions.

Table 1. A selection of soundscape compositions and pieces.
Aims

The aim of this paper is to systematically and theoretically examine whether soundscape composition can be classed as a distinct music genre, and to identify its characteristics of pitch, melody, harmonic, musical forms and their related acoustical parameters. The paper also gives a short review of the history of soundscape compositions.
Main contribution

*Time-identifiability, spatial-identifiability and their relationships to musical features for soundscape composition*

Among Schafer's (1993) main features of soundscape, 'soundmark' is the most important. This feature is essentially an auditory landmark: a sound that is uniquely and recognisably related to a particular location and/or culture. The remainder of the soundscape may be divided into the remaining two features: 'keynote', the background audio that sets the thematic tone for the piece and which other sounds modulate around; and 'sound signal', describing foreground sounds that are usually more consciously attended to. The use of soundmarks, keynotes and sound signals to establish an identifiable sense of space and time may therefore be referred to as 'soundscape composition'. Thus, an instrumental piece without any natural sound may qualify as a soundscape composition, whilst a folk song, performed on a public TV show and isolated from its original place and social, cultural or religious context would not. According to the analysis of the pieces in Table 1, possible features facilitating the perception/identification of space and time, in both traditional music soundscape composition are listed in Table 2.

Table 2. Relationships among the acoustical features, musical features and the two-dimensional coordinate.
Music score analysis for soundscape composition

In contrast with a traditional music score, a soundscape score may incorporate markers pertaining to time-identifiability (amplitude envelope and waveshaping), spatial-identifiability (reverberation) and even musical form structures denoted via the waveform (Figure 1). As shown in Figure 2, another efficient way of representing a soundscape composition is the 'sound chart' (Sonnenschein, 2001), which shows sound events, timeline and native locations simultaneously. This method is borrowed from early electronic music and sound editing for movies, known as 'Sound montage' (Sonnenschein, 2001). The sound chart, and even the mere waveform itself have been proposed as potential types of 'musical score' suited to soundscape compositions.

<table>
<thead>
<tr>
<th>Acoustical parameters</th>
<th>Musical features</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Native Time</td>
<td>Melody, Intensity</td>
</tr>
<tr>
<td>Amplitude Envelope</td>
<td>Timbre, Texture</td>
</tr>
<tr>
<td>Waveshaping</td>
<td>Pitch</td>
</tr>
<tr>
<td>Zero-over Rate</td>
<td>Intensity</td>
</tr>
<tr>
<td>** $L_{eq}$</td>
<td>Variation of harmonics</td>
</tr>
<tr>
<td>Spectrogram</td>
<td>Musical form</td>
</tr>
<tr>
<td>Autocorrelation</td>
<td></td>
</tr>
<tr>
<td>*** Native Location</td>
<td>Texture</td>
</tr>
<tr>
<td>Reverberation</td>
<td>Timbre</td>
</tr>
<tr>
<td>Frequency mapping</td>
<td>Pitch, Overtone</td>
</tr>
<tr>
<td>Sound mapping</td>
<td>Texture, Harmonics</td>
</tr>
</tbody>
</table>

* The original time, period or era of occurrence for soundmarks or sound events used in the soundscape compositions.

** Equivalent sound pressure level.

*** The original location, place or geography environment of occurrence for soundmarks or sound events used in the soundscape compositions.
Semiotics analysis for soundscape composition

The sound semiotics framework proposed by Ute Jekosch (2005) argues that all auditory events may be conceptualised as carriers of communicative information, and that this information attains meaning via listener interaction (Figure 3). Specifically, Jekosch refers to the terms: 'sign', 'code', 'codification' and 'aesthetics', which are themselves related to Schafer's (1993) notions of keynote, signal and soundmark.
Importantly, Jekosch's nomenclature is relatively loosely defined, such that any soundmark, sound event, musical melody or musical tone may fittingly be labeled as a 'sign'. Thus, there are three possible types of soundscape composition: soundscape as music (i.e. soundscape as signs), music with soundscape (both music and soundscape as signs), and music as soundscape (music as signs).

**Definition and research scheme for soundscape composition**

Soundscape composition may constitute a new music genre, involving the composition of soundscape events and/or musical features to represent the native time-identifiability and spatial-identifiability of natural ecology, society, economy, history and culture. As described by Truax (2008), soundscape composition lies at the intersection of diverse musical/non-musical traditions: 'Artists coming from the electroacoustic music community join with those coming from other acoustic-based backgrounds, such as field recordists, sound artists, and those involved with acoustic design in a variety of contexts,' (p. 105). Figure 4 shows a map of connections between soundscape composition and related music genres, and a possible research scheme is outlined in Figure 5.
Conclusions

According to the above analysis, soundscape composition has its own musical features, musical functions, musical types and connections to other music genres. Although soundscape composition itself is not new, I argue that soundscape composition can be regarded as a distinct, and therefore new, genre category. Soundscape composition comprises features which represent the native time-identifiability and spatial-identifiability of natural ecology, society, economy, history and culture. Soundscape composition offers distinctive possibilities for the creation and performance of contemporary music, and of sound ecology.

Notes

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