

USEDLOST: CREATING A MULTI-SPATIAL AUDIOWORK FROM VIRTUAL LOCATIONS

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ABSTRACT

usedlost was created for the 2015 Prague Quadrennial for the SoundKitchen call for works “compiled or composed using field (location) recordings made during Prague Quadrennial 2015 [and] linked to the main theme of PQ ’15: “SharedSpace: Music Weather Politics”. It explores linking new and old information distribution technologies, to create a sense of location that can be experienced and possibly understood through virtual representations of varying histories and languages.

An 8-channel audio system was used for sound dispersal in the New Stage of the National Theatre in Prague, and a max patch was designed for creating and recoding the 22’ work.

1. INTRODUCTION

The sense of space and relations to it are deeply personal and individual, and comprised of the mental and physical state of the individual experiencing their location within it. The resonances of any location is dependant on the individual listener and their position within the location, and these resonances may have physical/acoustic causes, such as those resulting from standing waves or wave cancellations, or be the evocation of memories, or experiences, encountered while in the location. These evocations may be just as much a result of the physical properties of the space as of the felt, perceived, and conceptual aspects of the space [1], resulting from the “omnipresent ambience of sound and smell, the feel of air, soft soil, and hard ground, the happy accidents and the occasional blows of fate - these are the common experiences of life that may add up to a profound sense of place” [2].

While it is impossible to create Tuan’s list in an electro-acoustic work, there are sounds and ways of organising them that can readily evoke a sense of a particular space within a different space. It is also possible to create a sense of inclusivity and of being part of that particular space through technologies [3-6].

usedlost was composed in Prague and designed to represent the locations used in the 2015 Prague Quadrennial, the history of those places and their uses for the Quadrennial, and the variety of cultures and languages represented there. These were all shared real spaces that were represented in a variety of virtual spaces.

English was the lingua franca of the Quadrennial, however it was a second language for the vast majority of the delegates.

The virtual spaces that were inhabited by the delegates of the Quadrennial formed links to and with the real spaces. As many of the delegates had little idea of the city and its history web based systems were used to grant this access, these included: web descriptions of the locations, updates and descriptions of events, event reviews, maps and histories of the locations. While very useful this way of navigating the city and the events of the Quadrennial was in many cases unique to the individual. This was due to the differences in technology – particularly hand held and personal technology – and their capacity to use it. This capacity may be influenced by: personal expertise, qualities of the internet provider used by the individual, qualities of the technology being used, and so on. The presence and affect of different cultural norms (considering a culture to have a geographical and temporal location) and the equally pervasive and affective presence of non-geographically non-temporally located internet or virtual cultures also has great influence [7-9].

Using the virtual to navigate and understand the real offered advantages and disadvantages in that the histories of the locations could be readily understood and interpreted by the individual. However, any understanding and consequent interpretation was subject to the information accessed, and this was influenced by many factors. Possibly most pressing of these was that Czech and English were the two languages used, this meant that any other language had to be translated, and this was usually done through a program such as Google Translate or Microsoft Translator. The previous sentence was translated from English to Icelandic (a language of delegates to the Quadrennial), then translated back to English as

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These differences, while not as extreme as those encountered when translating between English, which like Icelandic has a subject-verb-object structure and other languages such as Korean, which has a subject-object-verb sentence structure. In this case the original sentence is translated as

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It can be seen that these translations, while representative of the initial idea, required some interpretive gymnastics to glean that idea's original intended meaning.

The real spaces, while less open to varied interpretation due to being tangible, could be construed in many ways. The locations and buildings in which delegates presented works ranged through the Clam-Gallas Palace, which was built in 1752 and has hosted Mozart, Beethoven, and Kafka; the Bethlehem Chapel, originally built in 1391, demolished in 1786, then rebuilt to the original plans in the 1950s; and the New Stage at the National Theatre where *usedlost* was performed, and built between 1981 and 1983. There were sixty-one locations in total and fourteen principal locations used most often.

2. PROCESS OF DEVELOPING USEDLOST

In developing *usedlost* it was decided to incorporate these aspects outlined above, representing the locations used and the languages of the delegates. As computer based processes, such as maps, histories, timetables, outlines of activities and so on, they provided an 'other lingua franca' as the primary form of communication between organisers and delegates.

After it was decided to take this approach the descriptions of each of the main venues, as written for the Quadrennial brochures, the English translation of the original Czech descriptions was translated into the following languages: Albanian, Arabic, Australian, Bosnian, Catalan, Chinese, Czech, Dutch, English, Esperanto, Estonian, French, Finnish, German, Greek, Hindi, Icelandic, Indonesian, Italian, Japanese, Korean, Latin, Russian, Slovak, Spanish, Swahili, Swedish, Tamil, Thai, Turkish, Vietnamese, Welsh.

This translation was then read by the computer voices in a 2014 MacBook Pro, and in the case of English, which has a variety of accents based on the location in which it

is being spoken, were used. This resulted in seventy-one sound files that could be selected from for playback.

Figure 2: *usedlost* Max patch, shows the entire Max patch used in the creation of *usedlost*. It is made up of five sections, the Sound file and synthesis subpatch.

The Sound file and synthesis subpatch. allowed the playback of sound files randomly chosen from the 71 possible computer readings and translations. These were then slowed or sped up, without changing pitch, and played through a convolution process that blended the reading with a mix of saw, rectangle and triangle wave forms. These waveforms were amplified to create a mix according to the proximity of the respective node to the centre of the nodal area. Figure 4: amplification of saw, rectangle and triangle waves, shows that the triangle wave will be slightly louder than the rectangle wave which will be slightly louder than the saw wave.

The resulting sound was then split to go to both a stereo reverberation patch and directly to the mixer, seen in Figure 5: Localizing sound subpatch. The translation sound files were also fed to another stereo reverberation patch and directly to the mixer. This generated six sound streams sent to the localization mixer.

Each of the waveforms were pitched, creating a four note chord, of which there were twenty possible variations. The possible variations are seen in Table 1, below. Each waveform can play the chords, which were randomly chosen within a set gamut. In the performance of *usedlost* for the Quadrennial only the first four chords were used.

1,	60	64	67	74;
2,	60	64	69	74;
3,	60	65	69	74;
4,	60	65	70	74;
5,	60	65	70	72;
6,	60	65	69	72;
7,	59	64	69	72;
8,	59	64	67	72;
9,	59	62	67	72;
10,	58	62	67	72;
11,	58	62	69	72;
12,	58	62	69	74;
13,	58	62	67	74;
14,	58	61	67	74;
15,	58	60	67	74;
16,	58	60	65	74;
17,	58	60	65	75;
18,	58	60	64	75;
19,	57	60	64	75;
20,	57	60	64	74;

Table 1: Twenty possible chords

The six resulting outputs were sent to the Localizing sound subpatch. Figure 5 shows the six possible inputs

across the horizontal axis, and the eight possible speaker outlets along the vertical access. This image shows that the reverberated sound from the left output of the reverberator is being played out of speaker seven, the sound of the harmonized reading is being played out of the fourth speaker and the reverberated harmonized sound is being played from the third speaker.

Each of the four Sound file and synthesis subpatches had similar systems and output, resulting in twenty-four possible sounds that could be heard through eight speakers.

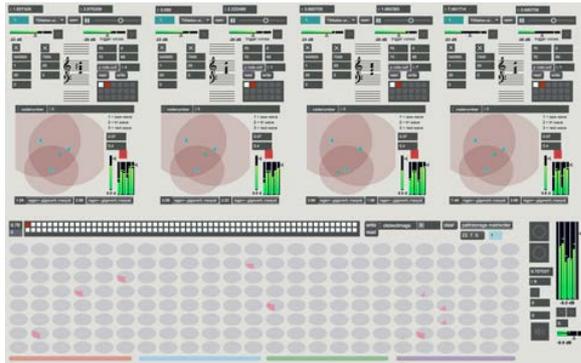


Figure 2: usedlost Max patch

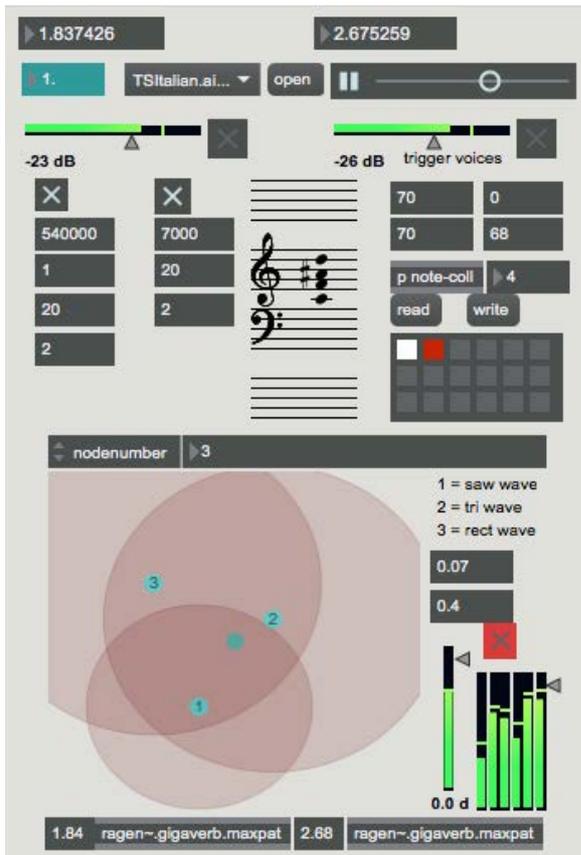


Figure 3: Sound file and synthesis subpatch.

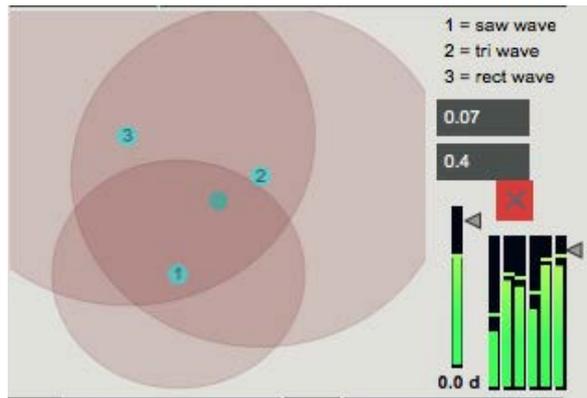


Figure 4: amplification of saw, rectangle and triangle waves

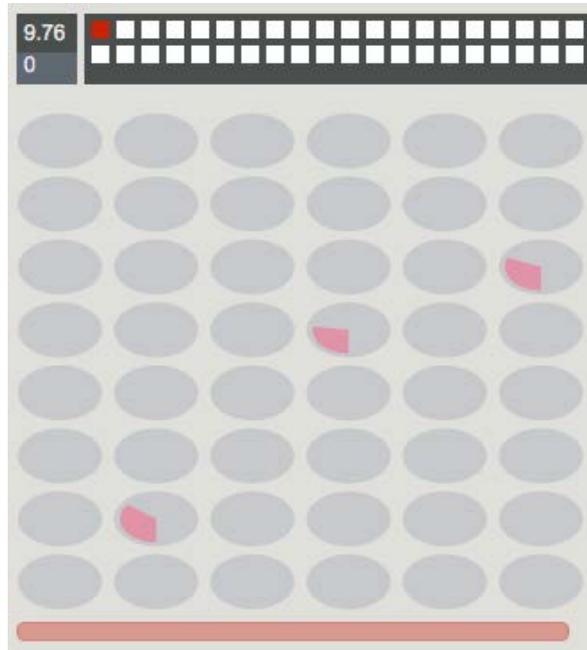


Figure 5: Localizing sound subpatch

3. PERFORMANCE

usedlost was presented as a fixed work, played back through an eight channel sound system using a TiMax system to spatialize the audio. The speakers were arranged as needed in the performance space, and while it was impossible to have all speakers absolutely equidistant from each other all were time and amplitude aligned to a point in the centre of the listening area.

The listening area was relaxed, with couches, bean bags and chairs, holding between sixty and seventy people. The choices of sounds, chords, speed of sound motion, and amplitudes were made to reflect this relaxed atmosphere. It was decided to make the work as much a part of the event as possible.

Creating a work in response to the variety of temporal, geographical, social, real and virtual locations, of an event, and the presentation of the work in that event,

required significant understanding of the inhabitants of that event and its purpose. By taking the approach of composing specifically for an event and exploring the many inherent resonances of the location, approach to the event, and the inhabitants of it generated an outcome in which the location formed the fundamental resources of the work.

4. FUTHER WORKS

It is intended to use this system and approach with other texts and with other speaker arrangements. These may also be developed for web based dissemination and potentially for interactivity, in which audience members may be able to input their own text, or in real-time recording and playback.

5. REFERENCES

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