

The Mobile Phone as a Medium for Heightened Sonic Perception

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ABSTRACT

In this paper, we describe the design and research phase of a project that aims to create conditions for heightened sonic perception through a mobile phone based software application. The initial design concept is that of an aural architecture for sonic socio-cultural exchange where sonic realities of the everyday are improvised live in a non-linear mode. The design approach adopted is collaborative. The project is a work in progress.

Keywords

Soundscapes, Improvisation, Sonic Perception

1.INTRODUCTION

Our experience of our everyday lives is mediated through a 'multitude of mechanically produced sounds' [1]. The everyday sounds that we experience are produced outside of our own volition. The capability to capture sounds and play it back has made it possible to listen to sounds outside of its original context. The mobile phone is also a medium through which sounds are heard outside of their original context. However, the normative definition of the mobile phone as a medium for communication has restricted its potential as a medium for sounds that exist outside of the immediate tele-communication. This design and research project explores the potential of the mobile phone as a medium of communication beyond its currently dominant role as a transmitter of sounds. The design space for exploration is the mobile phone as a digital networked medium that is appropriated by social networks to communicate across boundaries of time, space and context [2]. The project thus proposes the design of the mobile phone as a medium for the exchange of everyday sounds within communities and across socio-cultural contexts by mobilizing the potential of the mobile phone as a tool for the production of everyday sounds.

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conduct their activities at various levels of involvement. The design process gathers participants around an initial design concept that is used as a boundary object [5] or as a common point of reference. The design concept that emerges in the interactions with the gathered participants is regarded as an artifact [6] because perceiving it as such reveals the direct and incidental connections between the different aspects that come together in its creation.

3.INITIAL DESIGN CONCEPT

3.1Background

A community of practice with a history and tradition of working closely with found sounds through the means of electronic and digital tools is that of electro-acoustic musicians. When viewed on a scale of involvement from active to passive, the members of this community of practice involves not only those who actively engage in the creation and reproduction of their own tools or instruments for mixing sounds, but also those who passively listen to the sounds that are produced. Lastly, one mode in which electro-acoustic musicians prefer to compose sounds in a group is spontaneously through live improvisation.

3.2Improvisation

Professional musicians have practiced improvisation to create compositions spontaneously. Melodies, harmonies and rhythms are combined within the traditional structures of music that the professional musician has been trained in. Musical instruments have been known to tear away from their established histories to accommodate and challenge each other. When the mobile device is used as a musical instrument in an improvisation, what musical structures, if any, emerge?

Improvisation is a collective activity. Professional musicians practice it to scope the boundaries of the musical form. What pursuits will the untrained improviser indulge in when involved in sonic improvisation?

4.WORKING PROTOTYPE

A working prototype was developed for use as a common point of reference for discussions on the design concept with gathered participants and other stakeholders.

4.1Scenarios

Scenarios were constructed as a way to unfold the initial design concept at work and also to have a shared

understanding within the project team. Provided below are two scenarios in brief.

4.1.1 Scenario One

A group of friends, untrained in music, record soundscapes from their daily life. The group meets at a local pub, where there is a sound system for playing the gathered sounds. They perform a live-remix of the sounds on their mobile devices. The aural exchange affects individual and group understanding at the cultural and social level through a sharing of the everyday soundscape.

4.1.1.1 Scenario Two

Trained music practitioners, like cellists, record sound objects through a mobile phone. The group meets in a concert hall. They perform a group improvisation with the collected sounds through their respective mobile devices. The exchange is an exploration of the formal aspect of aural composition that builds on traditional music structures and creates new forms of music.

4.2 System Functionality

Sounds are collected via a mobile phone and sent to a location where they can be played back into a sound system. The same mobile phone controls the playback of the collected sounds in the soundsystem. Playback control occurs in the physical location of the soundsystem. The sounds that are played back are processed live via interaction through the mobile phone. The output of the processed sound can be heard directly through the soundsystem.

4.3 Prototype Application

Python was used for rapid prototyping on Nokia Series 60 devices. The phone microphone is used for the recording interaction. As current audio processing capabilities on the phone requires some amount of work, mixing and playback functions are processed on an external computer using Pure Data, which is a real-time sound processing environment. The processing is then controlled live by the mobile phone via bluetooth connection.

4.4 Graphical User Interface

For the recording of sounds, a simple interface allows recording, listening to the recording and then uploading of the recording to a server. The recording-interface consists of three buttons for these three functions.

For the improvisation interface, the four-way directional button was the only key activated for interaction with the GUI. The 'Play' command selects recorded sounds at random. Three options are provided for live mixing of the played back sounds-- allowing the participant to control the volume, speed and loop length. The 'Stop' command stops the playback.

5. FIELD ACTIVITY

The working prototype was demonstrated in three different settings: at a private coffee lounge consisting of

15 people, at a dinner for four in a restaurant and in two separate weeklong workshops resulting in a live performance by 20-25 people per workshop at two different public venues.

The initial design concept was also introduced separately to eight participants who were selected based on their active to passive involvement with found sounds. Participants were given a mobile phone to carry for a month's period after which separate discussions were held with each of them.

5.1 Findings

When the mobile phone was used as an instrument for recording everyday sounds by participants who do not pursue musical performance as a profession, they reported emotional, nostalgic, anecdotal and politically analytical associations with the sounds they chose to record.

Participants who pursued music production as a career mainly recorded aesthetically pleasing sounds for use in their next performance. The possibility of recording sounds and then processing and playing them back into a soundsystem makes the mobile device a musical instrument among professional musicians.

Although the above two groups have been presented as a dichotomy, it is not a strict division because both groups reported associations with sounds other than that of the aesthetic.

6. CONCLUSION

The project began with the objective to conceive of the mobile phone as a medium for heightened sonic awareness. It has achieved proof of concept on people's reception to the existence and use of such an application on the mobile phone. The next threshold to cross is that of a specific context in which this application could work.

7. REFERENCES

- [1] Bull, M., Back, L. (Eds) *The Auditory Culture Reader*. Oxford, New York: Berg Publishers, 2003.
- [2] Rheingold, H. *Smart Mobs*. Cambridge (Mass.): Perseus Publishing. 2002.
- [3] Fischer, G. *Beyond 'Couch Potatoes': From Consumers to Designers and Active Contributors* First Monday, volume 7, number 12. 2002.
- [4] Wenger, E. *Communities of Practice: Learning, Meaning and Identity*. USA: Cambridge University Press. 1998.
- [5] Marick, B. *Boundary Objects* www.visibleworkings.com
- [6] Diaz-Kommonen, L. *Art, Fact and Artifact Production: Design Research and Multidisciplinary Collaboration*. Finland; University of Art and Design Helsinki. 2002