

From calling a cloud to finding the missing track: Artistic approaches to mobile music

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ABSTRACT

This paper is challenging the common understanding of mobile music as ‘ringtones and i-pods’ by analyzing artistic approaches to it and offers new categories to contextualize these projects in a move towards a taxonomy of mobile music.

Categories and Subject Descriptors

D.3.3 [mobile music]: New approaches for mobile music, including technologies for listening, creation and sharing.

General Terms

Documentation, Performance, Design, Human Factors, Theory.

Keywords

Mobile music, media art, sound art, audience participation, mobile phones, locative media, GPS, taxonomy of mobile music

1. INTRODUCTION

The aim of this paper is to give an idea about the variety of artistic approaches to mobile music. Eight artworks from the rapidly expanding field of Mobile Art will be described and set into context. Most of the analysed projects don't fit in the 'traditional' media arts categories, they can be found in any of them. They are scattered over all sorts of different festivals, conferences and exhibitions. Most projects don't label themselves as mobile music, but analysing these artworks as mobile music provides a fruitful context for discussing these works. *Sky Ear*, *Track-The-Trackers*, *BubL Space*, *telenono*, *Schminky*, *simpletext*, *Surface patterns* and *Urban tapestries* broaden our horizon of mobile music.

Artistic projects and commercial applications are not necessarily opposed to each other in terms of the technology they use; but creative approaches to and combinations of mobile technology show how limited the commercial sector of mobile music still is. This is illustrated by the fact that one of the most obvious and commercially most exploited forms of mobile music – ring tones – are not part of any of the pieces, though most of them involve mobile phones. The analyzed artworks are presented in two categories: The first part of this paper focuses on the social context of mobile music exploring new forms of audience participation and collaborative mobile music. In the second part the focus shifts to the technological context of mobile music by “Listening to the invisible”.

Moving towards a taxonomy of mobile music this paper will finally explore in more depth how mobility influences on the technological, the geographical, and the social context of music.

2. Collaborative mobile music: new forms of audience participation

How differs audience participation for mobile music from non-mobile examples? Sound Art has liberated ‘music’ from stage and started to dissolve the setup of active performers and passive audience [1]. These developments from Media and Sound Art are taken a step further, as networked technology is now situated in everyday contexts such as bars, clubs or parks. Especially the use of mobile phones makes it much easier for people to participate in artworks or creative networks, because they are familiar with the technology, the device is a constant companion and allows to stay anonymous. There is nothing radically new and completely different to mobile music, it is situated the tradition of Sound and Media Art. Yet, there are new moments and opportunities for artistic intervention due to the mobile nature of the technology used, as this paper will illustrate: Mobile devices offer new possibilities for artists to involve their audiences.

2.1 Playing mobile music: *Schminky*

The developers of Mobile Bristol state that *Schminky* (2004) [2] was “designed to promote social interaction and test acceptability of new technologies in social spaces” but at the same time they came up with an interesting approach to mobile music. *Schminky* is a computer game, a musical puzzle where participants have to identify missing sounds from an audio prompt. Though the mobile music game can be played alone, it is designed as a group activity. Each of the players gets a handheld PC with the game and earphones. These mobile computers form a wireless network and the players chose one of seven sound sets. A sound set is formed of a continuous background melody and four tracks. Each player needs to identify which of his four buttons plays which of the tracks. The aim of the game is then to identify the one missing track within five seconds in order to progress to the next level, in which the detection gets even harder. Field studies by Mobile Bristol during a weeklong trial in a crowded café found that people really enjoyed this musical form of collaborative use of mobile technology.

Schminky offers a playful approach to mobile music. A café is usually a place of passive consumption of music and the music is in the background. This example shows how people can get involved with music by the use of mobile technology

that only needs a couple of PDAs and headphones. No skills are needed, people can spontaneously join the mobile music gaming group at the café table.



Figure 1. Discussing the *Schminky* experience at Futuresonic 2004.

2.2 Sonify your neighbourhood: Urban Tapestries

The project *Urban Tapestries* [3] wants to promote “Public authoring in the wireless city” and therefore developed a tool that allows to create mediascapes. ‘Mediascape’ is a term Mobile Bristol [4] uses to describe the digital space that is overlaying cities and landscapes in the era of locative and mobile media. These mediascapes can be produced by anyone, by children as well as by media artists or the advertising industry; a mass of mediascapes forms a “digital landscape”. *Urban Tapestries* is one of the projects that critically engages with the new possibilities of mediascapes. Their mobile RSS-feeder offers location based information on your mobile phone as you walk by. Anyone can attach information to any location in town; may it be text, audio or pictures. The RSS feeder is part of an experimental software platform designed for exploring and sharing knowledge in the urban environment. The project gives us a glimpse of what it may be like to walk through a city in the future, listening to other people’s sound graffiti or tuning into someone’s favourite song for the specific location we just pass by. Then, the challenge may be navigating the digital landscape, finding and browsing different commercial and artistic mediascapes that occupy the same place.

Urban Tapestries is an example for artist-developed (media) platforms that invite the audience to do something with it, to become a participant, a user. People have to engage with the system, fill it with content, share data and collaborate with each other. The artists provide the platform, the opportunity for people to annotate locations with data and to listen, read or watch other’s. The way a system like *Urban Tapestries* is actually used by participants illustrates new patterns of audience participation.

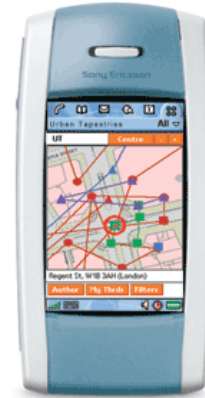


Figure 2. The *Urban Tapestries* Interface.

2.3 Drawing by Walking: *Surface Patterns*

Jen Southern offered an interesting view of the city at the PLAN (Pervasive and Locative Arts Network) Meeting in London in February 2005 [5]. For her the city exists “as much in people’s movements as in physical buildings”. This is also reflected in her art works where GPS enables to capture people’s movements through the city. Her projects are visual, only one her most recent pieces, *Surface Patterns* [6] includes sound. More interesting though is another recent piece, *Geodetic Landlines*, [7] where participants collaboratively draw on the city canvas with their movements. On the screen of the GPS enabled mobile phone they can see the line they draw by moving around in town. And one can also see the others’ drawings emerging on screen as the GPS data is shared between the mobiles via server and web.



Figure 3. *Geodetic Landlines*: Collaborative Drawing in a park.

There is not a single sound involved in this piece; it is definitely no mobile music. But similar ideas are used in mobile music projects, for example in Atau Tanaka’s *Malleable Mobile Music* [8]. Generally ideas and technology not yet used for musical purposes need to be carefully watched, as visual projects often offer interesting approaches to audience participation via mobile technology that could also be made fruitful for mobile music.

Walking a natural and easy human behaviour seems to be a very good idea for audience participation and walking as

artistic practice has a long history, explored for example in a new study by Pope [9]. The connection between mobile technology and walking is very strong, as we already make phone calls and text while wandering around in town – and of course choose our personal soundtrack on the Walkman/I-pod. And where artists in the 70s and 80s have been walking themselves in or for their art projects, recent examples like *Geodetic Landlines* invite the audience to do the walking, becoming ‘human crayons’ [10] or walking sequencers.

2.4 Texting for music: *Simpletext*

Simpletext [11] was developed by Jonah Brucker-Cohen, Tim Redfern and Duncan Murphy and has been performed since 2003. The audience can influence the audiovisual performance with text messages from their mobile phones (and alternatively via internet from their laptops). The audiences’ text messages are received by a mobile phone that is connected to a computer and influence on the music of the performance in two ways: Firstly they are transformed into MIDI signals that determine the creation of ambient music and secondly the texts are read out by a speech-synthesis software. The spoken texts are then fed into the ambient music, synchronised by a MIDI heartbeat. At the same time random pictures from the Internet are projected to the walls; these visuals are also controlled by the MIDI heartbeat that keeps the whole real-time performance in sync. The projection also offers some written instructions for the audience on how to influence the performance, providing some clues on how the text messages change the ambient music. *Simpletext* shows an interesting approach to using the mobile phone to collaboratively make mobile music.

The project illustrates how it is possible to involve a large number of people in the process of music making by utilising the mobile phone. Interactive performances often have problem with audience participation. The mobile phone seems to be very successful in overcoming peoples’ inhibitions to participate. Their interaction is not only technically mediated, but mediated by the familiar and intimate technology of the mobile.



Figure 4. Texting crowd at *Simpletext* performance.

3. Listening to the Invisible

Portable communication devices such as mobile phones became our constant companions. As they are seamlessly integrated into everyday life one easily forgets about the big

immobile infrastructure this technology relies on, such as antennas and switches. Mobile communication also implies that there is a lot of radiation between our mobile devices and that infrastructure. Despite a small movement trying to prevent the erection of mobile phone antennas, the majority of people rarely think about the issue; in general there is more excitement about the possibilities of the technology than concern about the radiation. Sometimes we can hear these invisible parts of mobile technology, for example, when our stereo makes funny noises before a text message arrives. Artistic approaches to this ‘in between’, to the invisible, draw our attention back to the ever-expanding layer of radiation that surrounds us.

3.1 Call a cloud: *Sky Ear*

In September 2004 a huge colourful cloud of one thousand helium-filled balloons floated high above Greenwich Park in London. One could call mobile phones up in the cloud to listen to the electromagnetic sphere of the city while the colour of the cloud changed according to that invisible sphere.

Artist Usman Haque had been intrigued by the fact that reception has not the same quality everywhere. Depending on our position the quality of speech is changing. One follows this invisible topography of reception everyday, for example by standing at the window while calling or by wandering around in a park until one finds a spot with good reception. Haque wanted to find a way to make these invisible topographies visible and audible. Therefore *Sky Ear* [12] allows participants to actually call in the sky to be able to listen to the whistlers and spherics of the ever changing electromagnetic sphere, which is not only influenced by mobile phone calls, but also by thunder and lightning, ambulance radios and television broadcasts, to name a few. The mobile phones are strapped to the flying balloons and are set to auto-answer. During the event the phone numbers are successively released to the audience, which allows them to get an idea which part of the cloud they are calling, and how the call affects the sound and colour of the cloud. Each balloon carries 6 ultra-bright LEDs; they glow according to the changing electromagnetic sphere and also communicate with each other via infra-red to show larger patterns.

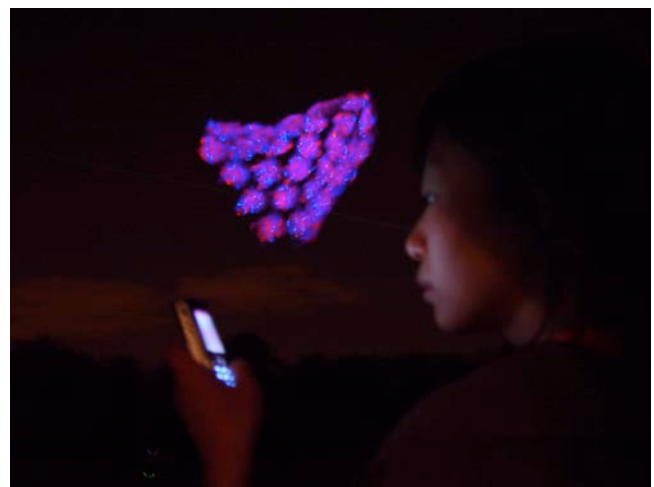


Figure 5. *Sky Ear*: Listen to the whistlers of the electromagnetic sphere by calling the mobiles in the cloud.

Sky Ear also illustrates how mobile media bring audiences on unexpected situations for listening to mobile music. Standing

in a park and calling into a cloud of blinking helium balloons is certainly on a different level of engaging with mobile technology than composing polyphonic ring tones.

There is a long history of (media) artists attempting to make the invisible visible, or, more interesting for mobile music – audible – in their artworks. Net artists, for example, made server traffic audible. Another example is Fiona Raby's [13] furniture faking to protect from electromagnetic radiation, which have been shown at the exhibition *ohne-schnur* ("without-cable") [14] in 2004.

3.2 Listen to CCTV: *Track-The-Trackers*

A completely different approach to making the invisible audible by using mobile technology is *Track-The-Trackers* (2003) [15] by Annika Ruest. While walking through town one hears the presence of surveillance camera on the earphones. Areas densely populated with surveillance cameras produces a dense texture of knocking sounds; each knocking represents one camera and gets louder when approaching it. Participants are invited to add more camera positions to the database using the mobile tracker device they also carry around for listening.

Surveillance cameras are not really invisible, compared to mobile phone radiation, for example. But they are placed as invisible as possible, and in most countries the signs warning about their presence are very discreet, if existing at all. *Track-the-Trackers* is also dealing with invisible technology by means of sound. The collaborative sonification of surveillance cameras allows keeping the gaze free to find more cameras; whereas a visualisation would have fixed the participants eyes to a map. The idea of the urban environment influencing the sound on the earphones is also used in Lalya Gaye's *Sonic City* [16]. Though Gaye's piece has a very different approach to the city than Ruests, both pieces show how powerful sound is in changing our perception of the urban space, *Track-The-Trackers* provides an interesting perspective on urban surveillance by listening to CCTV.

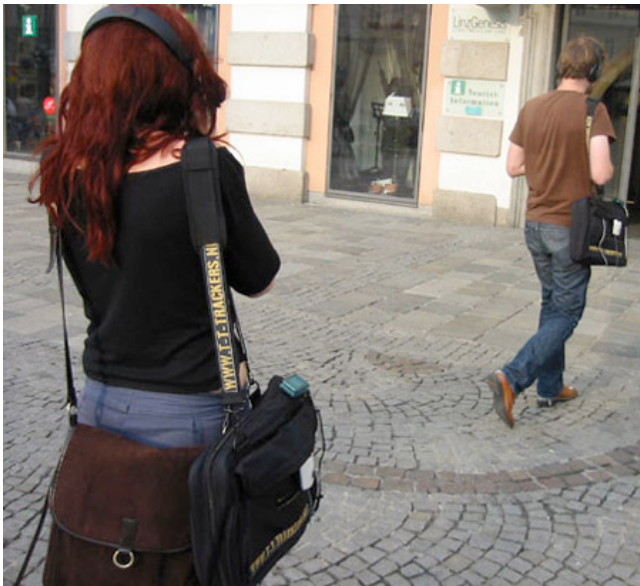


Figure 6. *Track-theTrackers* in Linz, Austria.

3.3 The silence of mobile music: *Telenono* and *BuBL Space*

Telenono [17] by Rupert Griffith is immobile and silent, so why does it appear in the context of mobile music? The other side of the coin of mobile music is the annoyance of its ubiquity, especially in the form of mobile phone's ring tones and conversations. Mobile music also includes artistic approaches to get rid of these sounds, mobile music artworks producing silence. This seems to be a contradiction, but the following examples show that they are only another way to deal with the same phenomenon, with mobile devices bringing music and sound anywhere, anytime. *Telenono* was shown at Futuresonic [18] in 2004. It looks like a phone box but has a reverse aim: once inside the box you can't call anybody and nobody is able to call you. It effectively seals you off all radiation, allowing people to enjoy the silence of the (slightly claustrophobic) place.



Figure 7. Escape from communication: *telenono*.

A more mobile approach to sound pollution of mobile phones is *BuBL Space* [19] by Elsenaar and Stolk (2002). The website lures: "Do you need a break from the daily mobile soap? Surround yourself with soothing space. Simply press your pocket-size BuBL device. Release a bubble of silence. You'll feel pleasantly isolated inside, even in a crowded place. Evaporate all phone signals up to three meters around. Enjoy the silence. Create your Personal BuBL Space." As it is illegal in most countries to sell a device that jams mobile phone frequencies it is not on sale; but one can use it when on display in a gallery, for example at ISEA 2004 [19] in Helsinki. Not only avantgarde artists are dealing with the invisible mobile frequencies, but in some countries also multiplex cinemas, theatres and other performance venues engage with the topic. France, for example, allows mobile phone jammers in these locations. The jamming of frequencies allows a ringtone-free performance experience – but also effectively blocks all possible interactive elements such as allowing the audience to choose a plot via phone vote or to browse related information on the web. [21] For the near future it is more likely that the audience will notice the lack of the invisible, the reception in these venues, when trying to text as soon as they get bored with the performance or screening. These artistic and commercial examples block or jam radiation in order to silence the symptoms of the invisible radiation: ringing mobile phones and mobile phone conversations, for example. They do

not facilitate listening to the invisible – but enjoying the silence of the absence of the invisible.



Figure 8. *BubL Space*: Press a button for silence.

4. Technological, social and geographic context: towards a taxonomy of mobile music

What makes mobile music different? Mobility changes the technological, the social and the geographical context. All these aspects are deeply intertwined and impossible to separate as they all influence each other building a complex situation, not easy to describe and analyse. By addressing each of the aspects separately I try to offer some orientation in the complex field of mobile music. Each of the contexts can be used as a potential source of sound: the social structure of a network of mobile devices could be sonified, location based data (such as GPS) could be used to generate music, or the music could deal with the technology itself, with radiation, for example. Each of the artwork emphasises one of these aspects – but all of them need to be analysed.

4.1 Focus on technological context

Mobile music is not a new phenomenon. The non-technological history of mobile music includes traditional instruments such as flutes or strings as well as bards and street musicians. Walkman [22], boom box and car stereo are a few of the technological ancestors of contemporary mobile music. There has been mobile music with and without technology – so what is new? This paper has been focussing on technology from a more unusual point of view, exploring the invisible part of mobile communication networks – the radiation – in the section *Listening to the Invisible*. And radiation points directly to one of the crucial features of mobile technology: its two-way connectivity, offered by different systems like Wi-Fi, UMTS or Bluetooth. This radically expands the possibilities of mobile music, especially in combination with the second crucial feature, the computing capabilities of portable devices. Musicians and artists have explored connected computers like the web, for quite some time. Now they are facing new challenges as the connected and digital technology meets mobility. The devices are used on the move and therefore require new interfaces, for example.

As for all digital media and music all sorts of different data can be transformed into music and sound. Ringtones seem the

most obvious sound for mobile music, and they are indeed used in mobile (phone) music; Dialtones by Golan Levin [23] is one example. But in the examples presented here there have been many different sources of music. This is possible because all the mobile data is digital, therefore every form of data can be transformed into sound and music. In *Simpletext* for example text messages are transformed into speech with a speech-synthesis software, an idea also used in *Text.FM* (2001) [24] by Matthew Fuller and Graham Harwood.

The focus on the technological context is where most mobile technology related reflections end. But this is only where it starts to get interesting: Moving the focus away from the mobile devices and the excitement about new possibilities of networked mobile technology to how these alter the social and geographic context in which they are used. It is not only the old technology of the computer and the Internet moving to new social and geographic context by becoming mobile. Something new is emerging from this, for which a lot of new terminology has been tried out, but only little appropriate metaphors have been found so far.

4.2 Focus on geographic context

Mobile consumption of music in the city has been ubiquitous since the Walkman; now the urban environment becomes also the context for creating, sharing and broadcasting music. Digital networks well established in the world of the Internet, migrate to mobile devices and are thus challenged by the urban environment they are used in. The new geographic context also influences on the kind of music that emerges, as the whole city becomes a potential stage. Focussing on proximity is one of the possible artistic approaches to the geographic context of the city: the nearer you get to a surveillance camera, the louder the knocking sound on the earphones.

The geographic context of music has always been important, but has not always been in the focus of music and art. The shift from the traditional setup of a (classical) concert to Sound Installations has marked a significant change in dealing with the geographical context. The shift to mobile music will be an equally significant shift [25]. No section of this paper was specifically devoted to this focus, but the issue has been implicitly addressed. Each example showed a different approach to the geographic context. A lot of artworks from the field of locative art explicitly address the impact mobility has on it and are extremely site-specific or have a very strong local connection. I will not go in more detail here, because there is already some debate about locative media focussing on geospatial aspects [26] that sometimes narrows the view on this rapidly emerging field. Several different concepts and terms have been developed to describe the overlaying of geographic and data space, the mixed realities and digital landscapes, as addressed earlier. But as important as geographic data such as GPS are the new layers of social interaction data, the new networks that form.

4.3 Focus on social context

Mobility also influences on the social context of mobile music. For musicians and artists one of the most obvious implications is that networked mobile devices such as mobile phones offer *New Forms of Audience Participation*, as the section focusing on the social context of mobile music was named. Examples range from *Sky Ear* where the audience is invited to call a massive blinking cloud of 1000 helium-filled

balloons in order to listen to the electromagnetic sphere, to finding the missing track in the collaborative mobile music game *Schminky*, to influencing the sound of the audiovisual performance *Simpletext* by sending text messages, and *Urban Tapestries* that allows the marking of urban space with your favourite songs via an experimental software platform designed for exploring and sharing knowledge in the urban environment. *Geodetic Landline* allows participants draw together through walking; People are invited to collaboratively build an audible database of urban surveillance: to *Track-the-Tracker*, and to protect themselves from the ubiquitous noise of mobile phones in *Telenono* and *BubL Space*.

Rheingold [27] described a variety of social phenomena of the mobile age and some of his examples of 'smart mobs' offer interesting perspectives for mobile music. In the same way as everybody is a potential mobile phone journalist and thereby enforces the development in journalism that had started with blogging, everybody is now also a potential musician, in the tradition of netmusic. Mobile music can blur the roles of artist and audience, of composing and performing music even further than we have observed in Sound Art and interactive installations. As in these art forms the focus of mobile music is not on the result, but on the process. Oftentimes the musician or artist is more a creator of a platform, a media system creating a mobile context with distinctive social, geographic and technological features. Within this platform control and power are often handed over to the audience that has now become participants and users.

4.4 The context of mobile music:

Technological, Social and Geographic

After addressing each of the crucial contexts separately it is equally important to draw them together again. They are all facets of the same phenomena, the highly complex field of mobile music. It is not helpful to design fixed categories along these three contexts, because for every artwork the social context as well as the technological and geographical context needs to be analysed. Still most examples tend to engage stronger with one of them. Therefore it makes sense to classify artworks depending on their focus on the technological, the social or the geographic context – as long as one bears in mind the other contexts as well. The danger of separating them is to forget that these aspects influence each other. And what is really interesting is the dynamic relationship between social, technological and geographical context in the mobile era.

The analysed projects gave an idea about the variety of sounds in mobile music: spoken text messages, missing tracks that need to be identified on a mobile platform, the crackers and whistlers of the electromagnetic sphere, knocking sounds 'attached' to surveillance cameras, other peoples favourite songs fixed to a specific urban place – and on the far other end of possibilities: silence produced by a radiation-proof box or by jamming phone signals in close proximity. Artist offer a new and unexpected view of the urban space where peoples' movements and the collaborative soundtrack they choose or produce for their urban journeys represent the city in as much as physical buildings or the grid of the streets. Analysing these examples by focussing on the relationship of geographical, social and technological context of mobility might prove a helpful framework for understanding the artworks, a first move towards a taxonomy of mobile art and music.

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