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Technologies of Sound

Crafting Soundscapes with Mobile Technology: There are Apps for That.

Introduction

Composers, ethnologists, and theorists have approached the topic of sounds and places from various perspectives. In *Three Places in New England* (1914), Charles Ives memorialized the geography and a bit of the history of specific areas in Massachusetts and Connecticut when he created music that makes direct references to those specific places in his compositions. In the article, “‘Under the Bridge’: An Orientation to Soundscapes in New Orleans,” the ethnologist Matt Sakakeeny examines how communities in New Orleans create musical soundscapes around a specific bridge that is politically and spiritually significant to the community. During workshops at the Deep Listening Institute in New York, the composer, professor, and theorist Pauline Oliveros encourages her students to exercise “deep listening;” she teaches participants to become acutely aware of the wide variety of everyday sounds that are always around us. R. Murray Schafer’ coined the term “soundscape” in 1969, when he founded the World Soundscape Project. For Schafer, a soundscape is a specific context where sound is closely connected to a place and the community that lives there. In his writings he implicitly recognizes the ephemeral, transient quality of sound, as do Ives, Oliveros, and Sakakeeny; in their own ways, these artists and theorists wonder how one can capture a sound, in spite of its elusive nature, and maintain its connection to a specific place. There are apps for that.

Record the Earth, Recho, Walk With Me, Urban Remix, Earth Sound, 4'33", and iSay are all apps that allow people to use their mobile technology to interact with, and sometimes consciously contribute to a soundscape, and share those recordings with a global community. These mobile apps provide new tools to sound artists and creative people who want participate in soundscape composition. After a general discussion of these apps, I will discuss a recent soundscape composition and auditory happening called *SOUNDDREAMS*, which took place at Stony Brook University in November of 2014. The Recho app as an essential element of the show. Before discussing the apps, it is important to mention R. Murray Schafer and his colleagues, and their early discussions of soundscapes starting in the late 1960s, and their legacy which endures today.

Schafer & The World Soundscape Project

In 1969 R. Murray Schafer founded the World Soundscape Project at Simon Fraser University. This educational project involved a research group which was inspired by Schafer's desire "to draw attention to the sonic environment through a course in noise pollution, as well as [by] his personal distaste for the more raucous aspects of Vancouver's rapidly changing soundscape." (Truax, *World Soundscape Project*). In chapter 10 of *The Tuning of the World*, Schafer describes how noise pollution is one of the side effects of industrialization. He advocates for reform, which could come through a new science that he calls "acoustic design," which would focus on making sure that soundscapes would not be harmful to the people who inhabit areas of rapidly changing sonic environments. He describes the connection of soundscapes to social welfare, and specifies several characteristics of a soundscape: *keynote sounds*

(background), *signals* (foreground), *soundmarks* (unique sounds that are meaningful to the community), and *archetypical sounds* (nature) (Schafer 100).

Barry Truax is a composer and professor at Simon Fraser University who worked with Schafer on the World Soundscape Project and has developed his own theories on soundscape composition. Four main characteristics of his soundscape compositions are: “listener recognizability of the source material; the listener’s knowledge of the environmental and psychological context of the soundscape material; the composer's knowledge of the environmental and psychological context of the soundscape material; the work enhances our understanding of the world” (Truax, *Barry Truax*). Truax also says that “the real goal of the soundscape composition is the reintegration of the listener with the environment in a balanced ecological relationship” (Truax 2008). Hildegard Westerkamp is another soundscape scholar and composer who was one of the original scholars working with Schafer on the World Soundscape Project. Today Westercamp leads lectures and workshops, and creates music inspired by both urban and rural soundscapes (Westerkamp, website).

Soundscapes Apps Overview

There are at least seven soundscape apps currently available on iTunes, and dozens of locative media projects that use these apps, with thousands of users who are contributing to soundscape composition on a regular basis. Two apps that focus on soundscapes in cities are Walk With Me, designed by Dutch composers Rob van Rijswijk (1971) and Jeroen Strijbos (1970), and Urban Remix, which was developed at Georgia Tech by professors, composers, and artists Jason Freeman, Michael Nitsche, and Carl Disalvo. Both of these apps focus on using

sounds from cities to create musical compositions. The idea of using urban soundscapes and noise from cities to create music does not fit the values described in the acoustic ecology perspectives expressed by Schafer and Truax; the WSP scholars considered urban noise to be detrimental to society, but these apps embrace noise and turn it into an element for composing. The city soundscape apps, Urban Remix and Walk With Me would have probably fascinated futurist composers like Russolo, Antheil, and Pierre Schaeffer, who were using industrial noise and city sounds to create music about a century ago.

In the article, "Sounds in Your Pocket: Composing Live Soundscapes with an App," the soundscape composers Jeron Strijbos and Rob van Rijswijk describe the process of creating a sound installation and composing at the same time by using the app Walk With Me. On one hand, their sound walks are similar to installations because the people who experience them have the freedom to move through the space and listen to the sounds however they want. On the other hand, the composers describe the process of looking at a map and composing the soundscape that they want to accompany different sections of a neighborhood, depending on the ambient noise in that area (28). Walk With Me is an example of a passive use of a soundscape app; it gives the audience the ability to hear soundscapes that were composed, but users do not have the option to use the app to contribute to the creation of the soundscape. In this way Walk With Me is similar to sound walks created by Janet Cardiff and described by Judy Butler in her article titled "A walk of art: the potential of the sound walk as practice in cultural geography."

In an article titled, "Soundscape composition and field recording as a platform for collaborative creativity," Jason Freeman and his colleagues described their app, Urban Remix, as a "platform for facilitating collaborative field recording, sound exploration and soundscape

creation." Freeman is a composer who focuses on electronic music. In the article he describes some of his goals in developing Urban Remix; they wanted to "break down the barriers among composers, performers and listeners, linking the creative activities of audiences to the music created and live performance" (272). Freeman cites Hildegard Westerkamp and shares her intention to find a way to "raise listening awareness in an already overloaded sound world." (Westerkamp 52). One way that Urban Remix seeks to achieve this goal is by combining field recordings by participants using the Urban Remix app on mobile devices, with a web-based digital audio workstation where composers, DJs, and creative people can upload any sounds from field recordings, and remix and use them in compositions and performances in the community where the sounds come from. Users can see maps on the website and follow different urban soundscapes created through the interactive, collaborative effort. They can also attend concerts and presentations in community centers and educational institutions in the community where the sounds are collected. Most of these events took place during the summer of 2010; presently the website has minimal functioning, and the web-based digital audio workstation is no longer available. (Freeman, Disalvo, Nitsche, and Garrett 276)

There are three apps that showcase a variety of sounds that come from anywhere a user wants to record or hear sounds (from the city, rural areas, indoors or outdoors). The apps are called 4'33", iSay, and Earth Sound; this mobile software can connect a global community of users because they give anyone with the app the opportunity to record and listen to sounds from all around the world. The app called 4'33" is named after John Cage's famous composition, and the app is funded by The John Cage Trust. The 4'33" app gives people the ability to record ambient sound wherever they are and upload it to the global database where are anyone with the

app can listen to the recordings, which are geo-tagged and indicated on a map. Like Cage's composition, the app focuses the listener's attention on the ambient sound where the recording takes place, not on the sound of playing an instrument or singing the song. A similar app is called iSay, and it functions basically in the same way as 4'33", but it has a different user interface and website. The app called Earth Sound is more passive because there is no option to record using the app. With Earth Sound you can hear ambient soundscapes that play randomly, which are part of a enormous database. The sounds for the Earth Sound app come from a database from a website called "freesound," which has thousands of ambient soundscapes that have been uploaded during the past several years.

An app that makes a specific effort to focus on natural soundscapes is called Global Soundscapes, created by Professor Bryan Pijanowski at Purdue University who studies world soundscapes and their social and environmental implications. His perspectives are closely in line with the ideas of acoustic ecology that R. Murray Schafer, Barry Truax, and Hildegard Westerville promoted in their World Soundscape Project. In April 2014, professor Pijanowski and collaborators prepared an international, natural soundscape campaign for Earth Day, 2014. Pijanowski stated,

"Our aim is to get people from all walks of life and from across the world to record their soundscapes and to answer questions related to how they relate to them... we hope to use these collected soundscapes from Earth Day 2014 to change the sound of public spaces, hospitals and other venues, replacing them with sounds that make us feel good, sounds that are peaceful and restful." (Pijanowski *Purdue University*).

The Global soundscapes project has an app that allows people to upload natural sounds, and there is a website where you can hear sounds from natural settings from all around the world. In the "FUN" educational section of the Global Soundscapes website, one of the activities

educates people on what makes up different soundscapes. Sounds are grouped into three main categories: anthrophony (sounds made by people), biophony (sounds made by other living organisms), and geophony (sounds made by changes in climate, rivers, wind, etc.) (Pijanowski *Global Soundscapes*). Along with the Global Soundscapes app, there are also a number of websites that promote acoustic ecology and provide educational resources, art and music, and community activities for members. Four well established, independent sites are: The Global Sustainable Soundscapes Network; World Forum for Acoustic Ecology; The Acoustic Ecology Institute; and Ear to the Earth: a worldwide network for environmental sound art.

In my experience, Recho is the app that gives the user the most immediate and visceral interaction with their sonic environment, which is why it was an essential element for our sound installation, SOUNDREAMS.

The Recho App

The iTunes app store preview of Recho, contains (packed / dense / academic) descriptions on the interaction of sound, geography, locative media, and the digital age. For example:

"Recho lets you record a sound and stitch it to where it was recorded. Your recording is now available for everyone, but to listen they have to be at that exact place. Use Recho for stories, guides, poetry, games, tips and secrets. Your recordings on Recho will stay at its place forever, so future listeners can hear the echoes of the past." (Sollihogda and Damsbo)

This description is significant, especially when considered in conjunction with chapter 1 of *Noise, the Political Economy of Music*. In the section called "The Sounds of Power," Jacques Attali says "All music, any organization of sounds is then a tool for the creation or consolidation

of a community, of totality. [Music] is an attribute of power in all of its forms... Therefore, any theory of power today must include a theory of the localization of noise and its endowment with form.” The developer’s description of Recho in iTunes emphasizes how the app can be used to “stitch” a sound to an “exact place;” it sounds like the user can create borders, defined by sounds that will stay “in place forever.” In this sense the Recho app can be a powerful tool for defining the invisible lines of communities bound together by sounds, only audible if you have the app. In chapter 1 of *Noise*, Attali discusses how sounds can be a powerful tool in the hands of governments and other controlling institutions, but with Recho, the ability to wield the power of sound is in the hands of anyone with the app.

The developers of Recho are based in Denmark and suggest several ways that users can interact sonically with their surroundings by using their app. They describe Recho as “sound archeology” and a “globally site-specific storytelling platform;” they encourage users to record their own sounds and pin, or geo-locate them to a place by using the app, like a sonic time capsule. Recho users are also encouraged to listen to stories, histories, concerts, conversations, and many other sounds that have already been pinned to specific places. One of their premises is that when a person hears a sound in a specifically determined, spatial context, there is an especially meaningful impact for the listener. (Sollihogda and Damsbo, *Recho*)

On the main page of the Recho website there is a black and white picture of a neighborhood park, and the caption below the image says “context matters.” Yellow text within the picture says, “some stories belong to a place.” Also in the image is also a yellow circle on a path, which looks like the circles which appear in the screen of an iPhone which has the Recho app. The description below the title situates the Recho app within the context of the academic

writings on sound which are cited above, when they examine the role of sound and technology in society. The description of Recho states:

"As social feeds and streams are occupying our attention, we become increasingly distanced from our physical surroundings. Recho combines online listening with offline behavior to create an integrated aural experience quite unlike anything else... The possibility to leave digital sounds in physical places simply lets you relate to content in a new way." (Sollihogda and Damsbo, *Recho*)

The Recho web site describes how Recho gives users the opportunity to create different sounds and instantly contribute to a soundscape, instead of just experiencing it. That is the “integrated aural experience” that the Recho developers are talking about (Sollihogda and Damsbo, *Recho*).

CASE STUDY:

THE RECHO APP & THE SOUNDREAMS AUDITORY HAPPENING

In July 2014 Prof. Schedel suggested that I look at the Recho app to determine if we could use it to create a sound installation in the Student Activities Center (SAC) gallery at Stony Brook University for the fall 2014 semester. I had never heard of Recho, so I went to the website at recho.org to learn about the app and consider how we could integrate it into a sound installation.

The short description of Recho from iTunes gave me some idea of how the app worked, but it wasn't until I downloaded it to my iPhone and started experimenting with it, that I figured out how to begin to design the sound art installation, SOUNDREAMS, using Recho as an essential element of the the experience. Prof. Schedel and I had several brainstorming sessions to come up with ideas for the show, which would take place during November. Our first idea was to

create a patchwork of sounds using Recho inside the Stony Brook University SAC gallery, which people could explore sonically while using the Recho app within that space. After several experiments I realized that two limitations of the Recho app made our first idea impossible to realize. One limiting characteristic of Recho is that a user is only allowed to record up to 30 seconds of sound at a time, directly through the microphone of their iPhone; the recording stays where it was recorded, and continues to sound in an unending loop which someone can hear if they are using the app, and standing where the recording was originally made. I also noticed that the recording could be heard while using the app in a wide radius of about 40 feet around the place it was recorded. This meant that in a room the size of the SAC gallery, just about any sound recorded there with Recho would be heard simultaneously; it would be an overlapping cacophony of interwoven sound.¹ After more conversations about how to use Recho for the SOUNDREAMS show, prof. Schedel and I decided to expand the scale of the show, to make the entire Stony Brook campus the canvas for the different sounds that would contribute to the installation. The gallery space would serve as a “base” for people to come to get maps and directions to explore sounds around the campus using the Recho app.

We asked Serom Kim, a composer in the Stony Brook graduate school, to create a specific piece using Recho, to be heard in the gallery and all around the Student Activities Center. I decided to contact the developers in Denmark to get some advice regarding some technical questions about how to most effectively use Recho for the SOUNDREAMS show. The developers, Åsmund Sollihøgda and Mads Damsbo, responded to my inquiries within a day and were extremely helpful with my questions and they offered me the opportunity to have access to

¹ I could not find any of the specific characteristics of how the app works on the Recho website, or in the iTunes preview.

the back end of the app, which would allow me to upload songs that are longer than 30 seconds, and I would be able to place them anywhere on the Stony Brook campus, using my computer and Google maps. This feature is part of the Recho “pro” subscription, which usually costs hundreds of dollars a month. They allowed us to use the pro features because they considered SOUNDREAMS to be a good way to promote Recho outside of Denmark.

The ability to upload any length of music from my computer and geo-locate it anywhere on campus completely changed my perspective on the creative process of preparing the SOUNDREAMS installation. When I started preparing sounds for the installation I started by choosing different areas around the Stony Brook campus, and I had to go to each place to determine what type of sound collage I would create to geo-locate a compelling composition there. Because I was constrained to using 30 second chunks of music that would loop indefinitely, I was also constantly thinking about how to create pieces that would lend themselves to the distinct sound of looped audio. In addition, I had to develop ways to clearly express my discoveries to the composers who I wanted to collaborate with on this project.

Since the developers of Recho allowed me to use the “pro” feature described earlier, I decided to create a collaborative campus wide piece that would locate original music from composers at Stony Brook into a larger geographical area. I decided to create paths of sound around Stony Brook. Initially, I wanted to present music that was related to the area where the path of sound was located, but I realized I needed more time to create and request original music to be composed for site specific pieces. Instead, I asked about seven different composers to participate and contribute music to this project, which I uploaded using my computer with the pro features from the Recho web-based platform.

Prof. Schedel and I had several extensive conversations with the gallery manager, Jan Costanzo, and her assistant, Nicole Hixon. One of the most important issues that they brought up had to do with censorship. They were concerned that some people might use the app to record inappropriate messages that anybody would be able to hear if they had the app. They were particularly concerned that some students might say negative things about Stony Brook University, the administration, professors, or other groups on campus. Since the SAC gallery and the SBU craft center would be promoting the use of the Recho app, they felt that they would be responsible for content that was spread by students using the app. They were also concerned that people might use the app to record sounds that were not related to the installation, which would distract from the overall aesthetic that we wanted to develop and create for SOUNDREAMS. We talked about several ways to address this issue in case a problem arose; one solution was to make it clear that the Craft Center and the SAC gallery would not be responsible for content uploaded at Stony Brook by users with the Recho app. Jan Costanzo also suggested that we make it clear that anyone who uploads sounds at Stony Brook will be monitored.

We gave the SOUNDREAMS installation the subtitle: “a multi-locational auditory happening.” This phrase suggests that this installation is more extensive than a show that takes place in a gallery. The multi-locational aspect of SOUNDREAMS refers to a collaboration between composers who create soundscapes that an audience can experience both in the gallery, and at different geographical places and paths around Stony Brook University. As an “auditory happening” SOUNDREAMS encompasses more than a series of soundscapes that people can experience, the show also hosts several performances and lectures which take place in the gallery. The activities that took place throughout November included and audio-visual electronic

music concert by Fernando Velazquez and Francisco Lapetina, a lecture about sound and the disembodied human voice by Katherine Kaiser, a reading of a play, and an eight-channel electronic and live music performance composed by Stony Brook graduate student Tayler Ackley.

We received informative written and spoken feedback from people who were involved in the project in different ways. The audience who experienced SOUNDREAMS expressed curiosity, inspiration, frustration, joy, skepticism, and wonder. Some people did not understand how the installation could take place in the gallery and also be going on at the same time at different places around campus. Others wondered why there was a labyrinth in the gallery and how it related to the music and the soundscapes. Some people enjoyed walking in the gallery and listening to how the sound changed as they walked around the different paths of the labyrinth. Plenty of people expressed that they had had difficulties with the technology; sometimes they could not hear any sounds, sometimes sounds would start and stop in an unpredictable manner, at other times there seemed to be too many sounds overlapping. Some people tried to follow the paths that were indicated on the campus map, but they could not find any recorded music.

The composers who participated were pleased to know that their music was more accessible to people, thanks to SOUNDREAMS. Some wondered if certain areas would be more conducive to listening to their music than others. A couple composers were concerned that people would use Recho to record sounds on top of their pieces which would change the sound of their composition. Most of the composers were intrigued to participate in a new idea where one of their works would be connected to a specific place.

As the curator of SOUNDREAMS, I was pleased with the results of several different aspects of the “multi-locational happening.” I was especially happy to have the opportunity to collaborate with composers who created music in different styles; it was satisfying to be able to offer a unique opportunity for an audience to experience Stony Brook composers’ creativity and talent. I am glad that I had the ability to place original music from the Stony Brook community in public places where anyone with the app has the ability to hear the songs. For me, the SOUNDREAMS experience is the first step to develop other installations that combine music, visual art, and geographical space on a large-scale that goes beyond the size of a gallery. I am also grateful for the opportunity that I had through this show, to host a series of talks and performances and that educated and entertained me and others, on topics related to music, sound, and creativity.

As a composer, I felt frustrated because of several difficulties that arose related to the technology; I found that it was not capable of producing the sounds that I was imagining. The main problem has to do with continuity of sound; the app is too unpredictable in the way it delivers the music that is uploaded, to the end user who hears the sound through their phone. I was expecting to be able to create paths and areas of continually interacting and intermingling music, but this was not the case because sounds would start and stop unpredictably. Considering these limitations, if I use this app for another event, the concept will involve site specific compositions that don't involve movement, in order to experience the sound.

Further Research

The social anthropologist Arjun Appadurai uses the suffix “-scapes” to refer to a variety of concepts in his writings because it addresses cultural situations with “dilemmas of perspective and representation that all ethnographers must confront... because [using the suffix -scapes] admits that (as with landscapes in visual art) traditions of perception and perspective, as well as variations in the situation of the observer may affect the process and product of representation” (Appadurai 33). I am researching ways that Appadurai’s description can apply to the extensive interest in soundscape composition that I have encountered on the web, and is also evident in the creation of the apps that I examine in this paper. People in globally interconnected communities are using mobile apps as tools to collaborate with people spread out over vast geographic spaces; these apps allow people to intimately engage in the soundscapes of their local communities, and even contribute to soundscapes around the world. These apps not only allow people to hear the variety of sounds that exist, but with the Recho app in particular, sound enthusiasts have the capability of leaving a soundmark and to actively participate in the creation of the soundscape that exists where they are.

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