



RHYTHMSYNTHESIS

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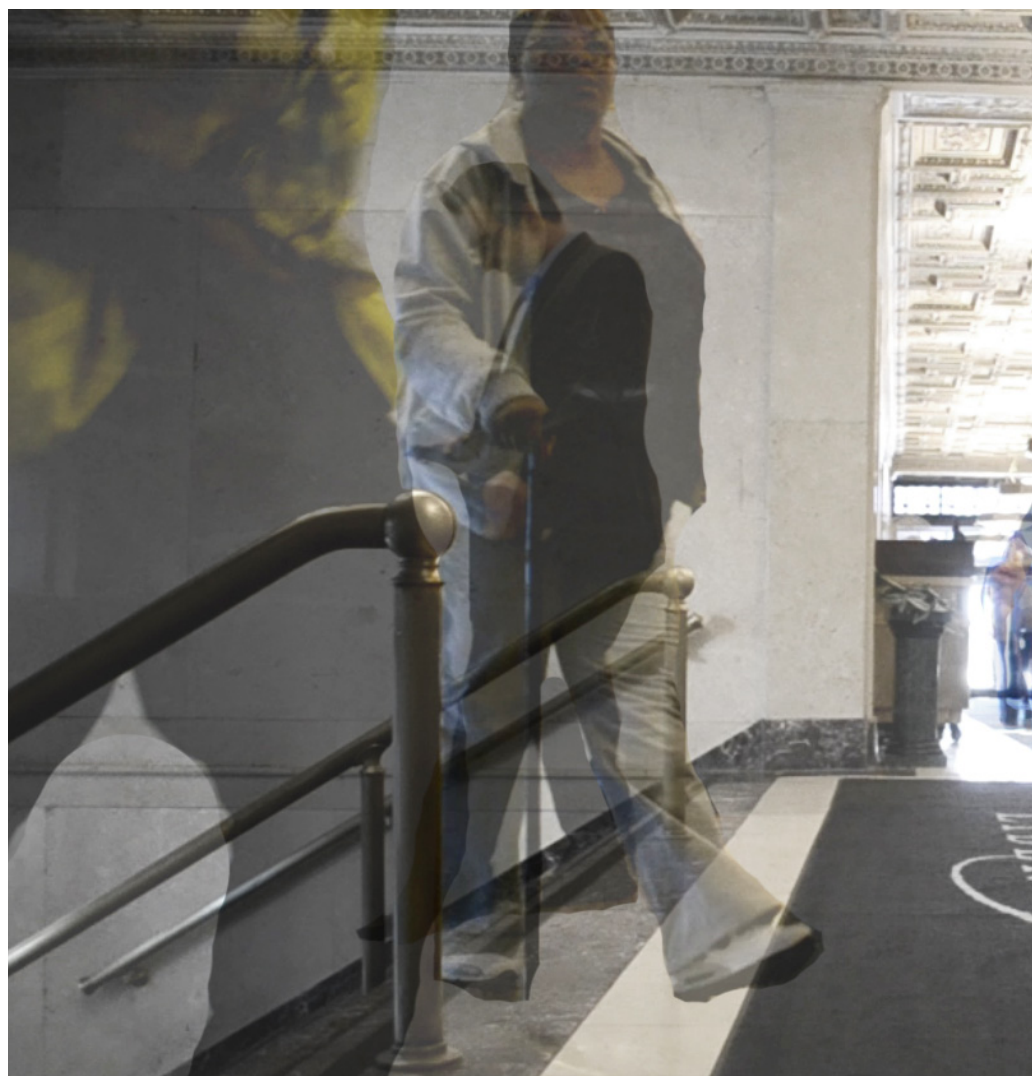
About Rhythmsynthesis

Rhythmsynthesis is an event which embraces everyday interactions with space in order to synthesize new rhythms enmeshed within existing spatial (place-based) rhythms. Situated in Buffalo's Liberty Building, the event consists of a series of (rubber and glass) inhabitants which are attached to different elements of the building: railings, doors, elevators. These inhabitants pick-up sounds of physical interactions with the space itself, generating local rhythmic amplification. As a result of their presence, these amplified rhythms may change and shift as people begin to play with different building elements, or simply become confused and contemplate their appearance and function. Complimenting local amplification is a global rhythmic synthesis. This is a more elaborate digital processing of sounds being produced within the space as a whole. The event functions in unison to unveil and disrupt everyday rhythms while reinforcing the significance of the immediate surrounding as a site for fun, creativity, and contemplation. As Lefebvre writes, "We are only conscious of most of our rhythms when we begin to suffer from some irregularity."

This booklet is broken into three parts: Event, Current Research, and Initial Research. Part I will discuss the project as event. Part II will situate the event within a body of current research. And Part III will show earlier research which has influenced the project into becoming what it is now.

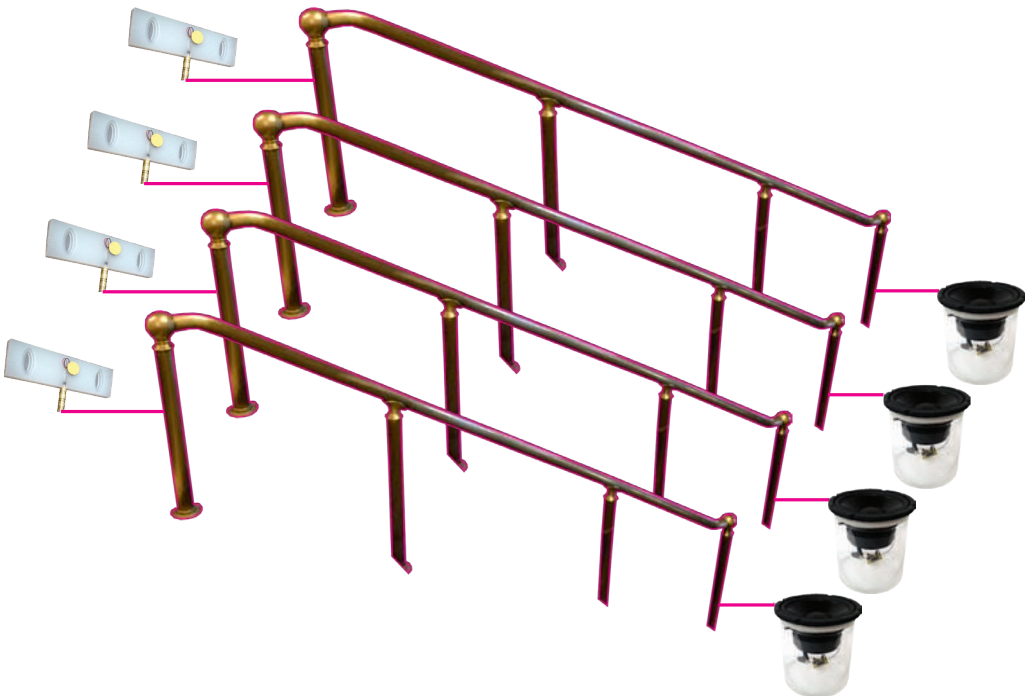
Part I

-----**Event**













The space is rather still, with quick moments of people passing by. you can hear footsteps and the sounds of **people + metal**

Elevator door opens and man walks out, **quickly another elevator**, and more people walk out

As the revolving door moves a **gust of wind** enters the space, and a man slowly shuffles up the stairs

All of this **happens quickly**, within a few minutes

Elevators seem to open randomly with people walking out

To and from the bank, from both entrances, the main entrance provides a longer linear path for people

There seems to be an **equilibrium** in the space. As two people enter, two more leave, either from the bank or from the elevators

There is **periodic downtime**. This doesn't last long

They shuffle into elevators

Every sound in the space **echoes**. Clicks and pops can be heard, as well as an **airy drone**

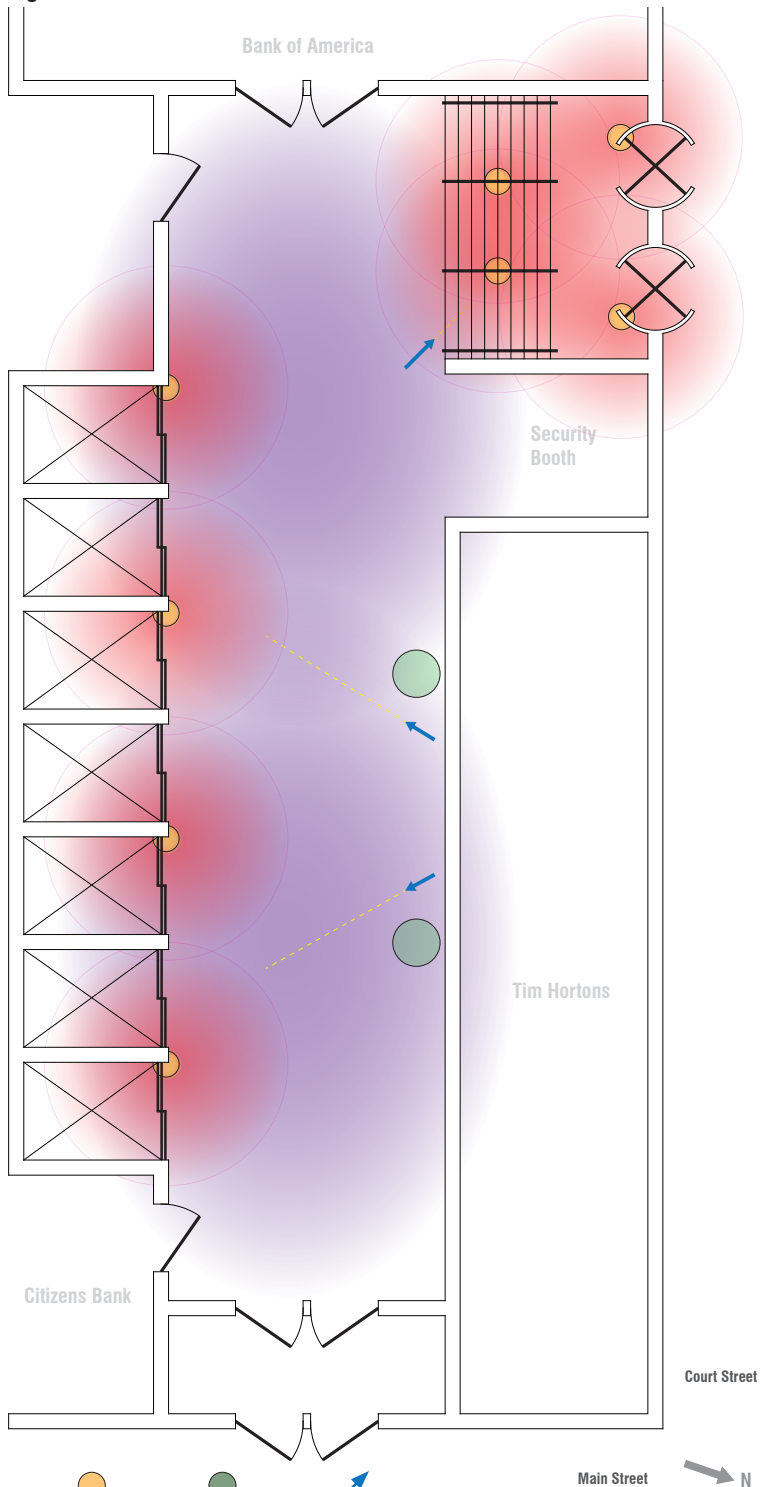
Many people **move quickly** through the space, the **elevators seem to explode**, and a rush of people walk down the stairs with a consequent **explosion of the revolving doors**

the space quiets quickly with 1 woman left waiting for an elevator

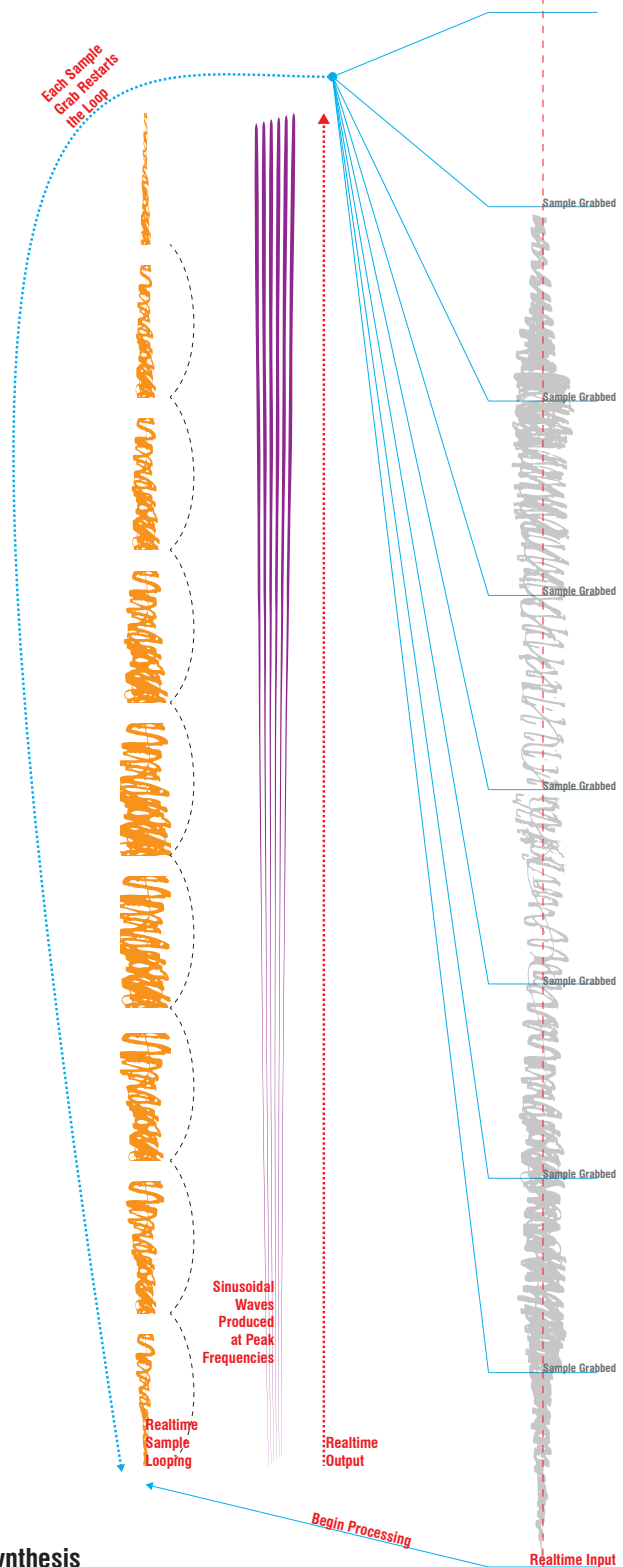
every now and then you can hear the security guard **radio**

the woman's till waits for the elevator as a few people move through the **linear space**

Spatial Arrangement



Organization of rubber inhabitants, speakers, and microphones
Spatial reach of local sound amplification and global synthesis

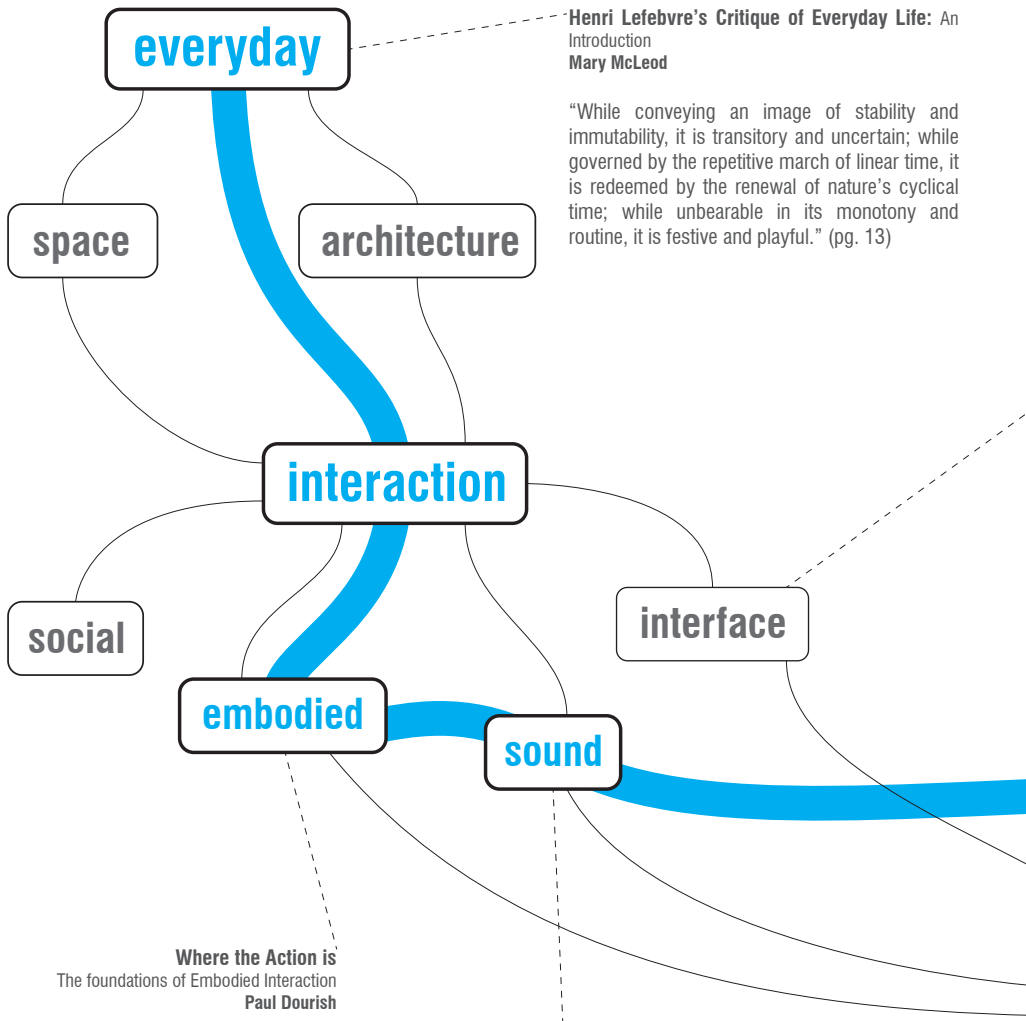


Part II

Current Research



As the mediation of technology in everyday life becomes more prevalent we find ourselves in a constant state of distraction, refocusing our attention away from the physical and fixed on a virtual screen-based world. This detachment removes oneself from the people, places, and objects which surround the spaces we inhabit. This is a particular concern for architecture because of the shifts in social interaction caused by technology: expansion of the social sphere from local, personal interactions to global. It has become commonplace to see people with their heads down staring at a computer or mobile device, even in highly populated areas. Our immediate environment is becoming secondary to a global communicative reach, meaning a pocket-sized device may have more influence on our interactions with people and space than the space itself.



everyday

Henri Lefebvre's Critique of Everyday Life: An Introduction
Mary McLeod

"While conveying an image of stability and immutability, it is transitory and uncertain; while governed by the repetitive march of linear time, it is redeemed by the renewal of nature's cyclical time; while unbearable in its monotony and routine, it is festive and playful." (pg. 13)

space

architecture

interaction

social

interface

embodied

sound

Where the Action is
 The foundations of Embodied Interaction
Paul Dourish

"As physical beings, we are unavoidably enmeshed in a world of physical facts... the social and physical are intertwined and inescapable aspects of our everyday experiences." (pg. 98)

John Cage on Silence
John Cage

"When I hear the sound of traffic, here on 6th avenue for instance, I don't have the feeling that anyone is talking. I have the feeling that sound is acting. And I love the activity of sound. And it gets louder and quieter, higher and lower, longer and shorter... it does all these things."

Performing Space

Pedro Rebelo

“The use of familiar physical objects is common in new media works perhaps because they liberate the artist from engaging in an instructional process with the user. Whereas a novel interfacial object tends to require explanation at some level, the familiar object carries a set of expectations and cultural signification which the artist often capitalises on.” (pg. 6)

Rhythmanalysis

Space, Time and Everyday Life

Henri Lefebvre

“Everywhere where there is interaction between a place, a time and an expenditure of energy, there is rhythm.” (pg. 15)

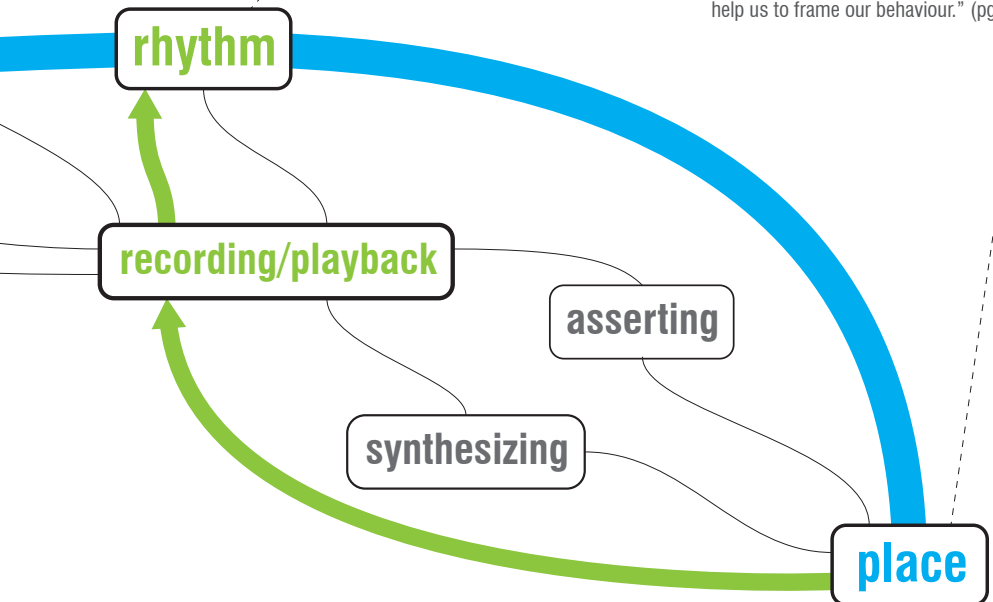
“We are only conscious of most of our rhythms when we begin to suffer from some irregularity” (pg. 77)

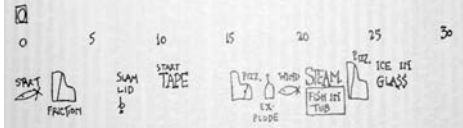
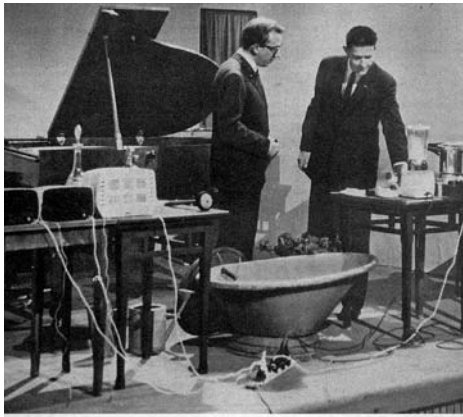
Re-Place-ing Space

The Roles of Place and Space
in Collaborative Systems

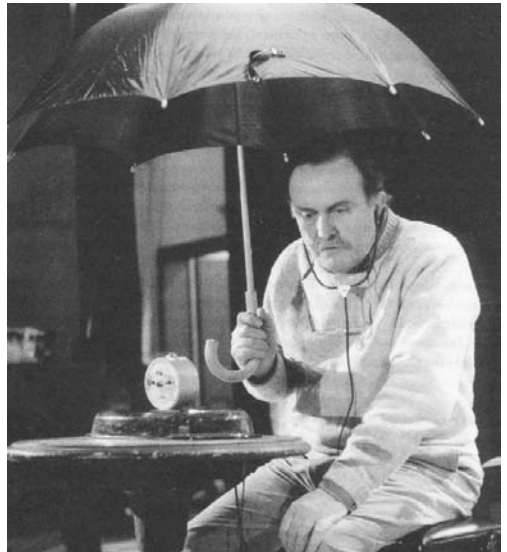
Paul Dourish and Steve Harrison

“The sense of place is dependent on much more than simply the spatial organisation of our surroundings, and more than the three-dimensional arrangement of artefacts. Places also call up cultural understandings which help us to frame our behaviour.” (pg. 3)

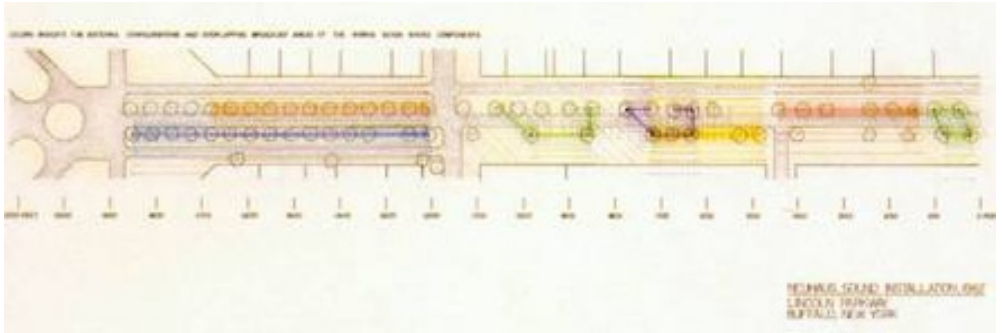




John Cage - Water Walk (1959)

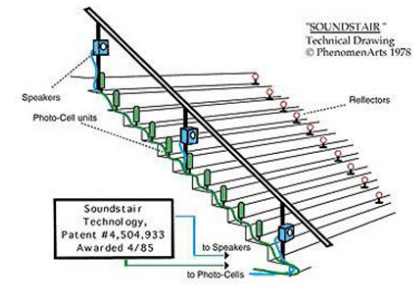


Alvin Lucier - I am sitting in a room (1970)

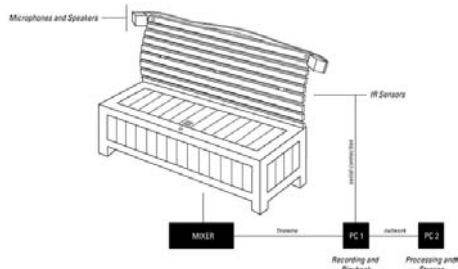


Max Neuhaus - Drive-in Music (1967)





Christopher Janney - Soundstair (1978)



Hyun-Yeul Lee - The Audio Bench



David Byrne - Playing the Building (2005)



Alex Braidwood - Noisolation Headphones (2011)

Earlier Rhythmanalysis of Knox Hall (UB North Campus) and University Subway station (UB South Campus) - 2/2/2012 6pm-7pm

Immediately I can hear the **mechanical buzzing** of a building – heating/cooling systems, vending machines. There is a constant flow of people; a combination of conversation, **swishing** of winter jackets, and a **tap-thump-smacking** of footsteps: a flow that fluctuates rapidly.

The sound is rather warm, slight reverberation, along with the constant drone of the vending machines down below. A **quiet presence of people** can be heard from all over, **reverberating** into each other.

People preoccupied in their own business – eating while walking, listening to music, typing on a cell phone.

Every few minutes there is more noise than usual; it dissipates within a few seconds.

There are many different



footstep sounds, more than I can describe in words. The **cacophony of footsteps** fills the space.

There is almost complete **silence**, except for the **buzz** within the space.

A rhythm begins to become apparent in the space. It is **not fast, but not too slow**. It

The **mechanical screeches** are overwhelming in this space. **Buzz, whistle, ring, moan** (cyclical), clattering, all at the same time.

The **wind brushes** very slowly through the tunnel

There is a very loud **constant buzz**, almost like a light bulb as it is about to burn out.

Some of the train sounds fade as other become more apparent, they cycle – taking turns.

The **bells go off**, the doors close, and the train rides away.

The **wind is extreme** now as the **train screeches** down the track, **fading** into the distance

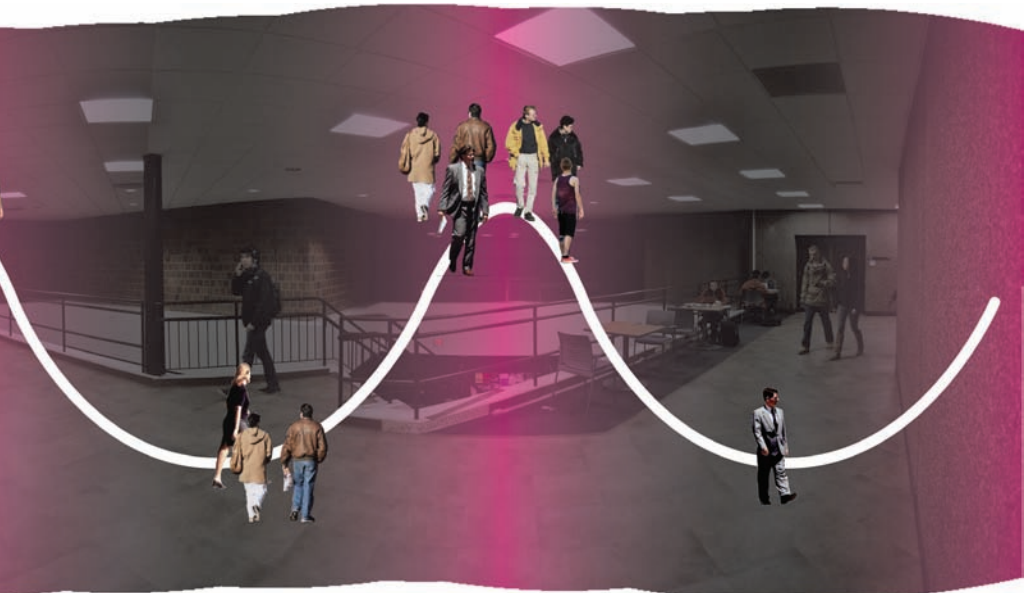
The lights dim slightly, it is now almost **completely silent** except for one lady walking with a rolling walker



Two people in the space begin to talk, **she sighs slowly**

I can now hear the elevators in the distance without the overbearing sound of the waiting train

A few moments after the train leaves, a sound can be heard down the track. It is a mechanical sound. A **drone in the distance** can be heard, getting louder as the **wind**



fluctuates between a normal state of a few people walking throughout and a state of flux with groups of people talking loudly with each other, usually on the lower level. This flux occurs for only a minute at a time, if that long.

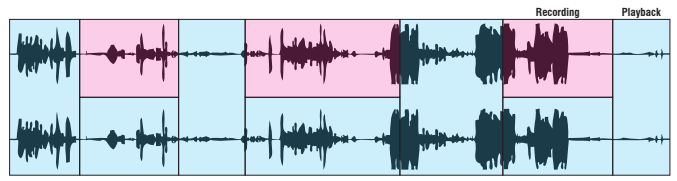
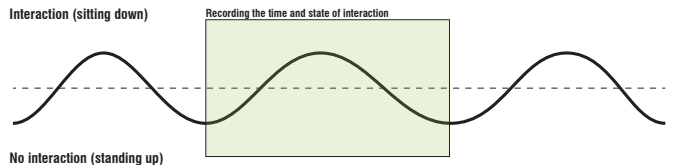
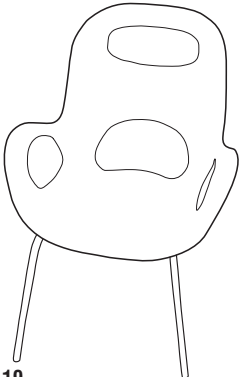
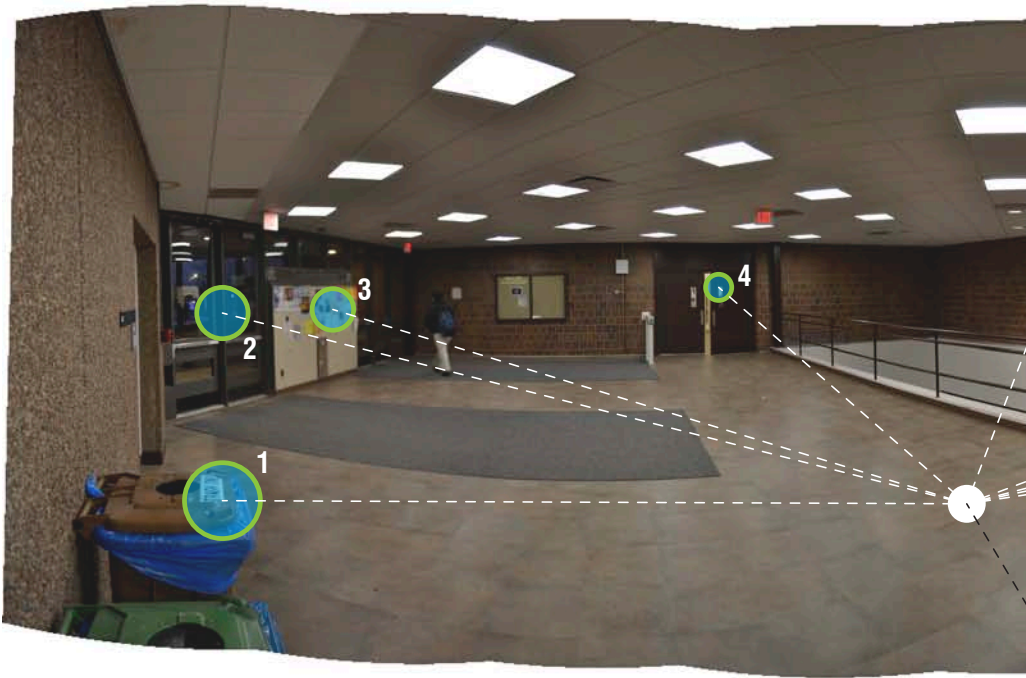
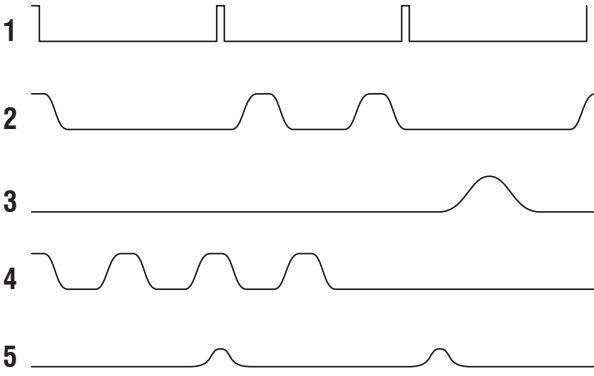


grows stronger

The drone gets louder, with rumbles-bangs-and thumps, it is climactic, the train rolls in, the breaks can be heard depressurizing

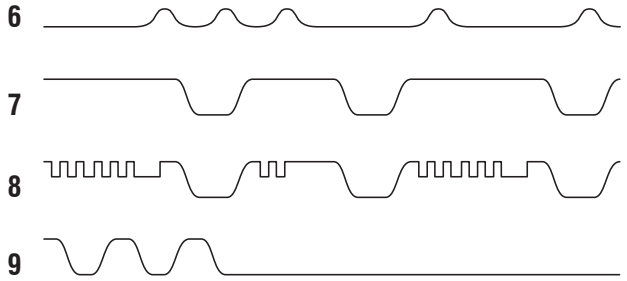
It stops, beeps, and the doors open. A large flow of people pour out of the train.

The rhythm thus far is not smooth; it is slow with bursts of extreme energy, and very calculated. It is very repetitive.



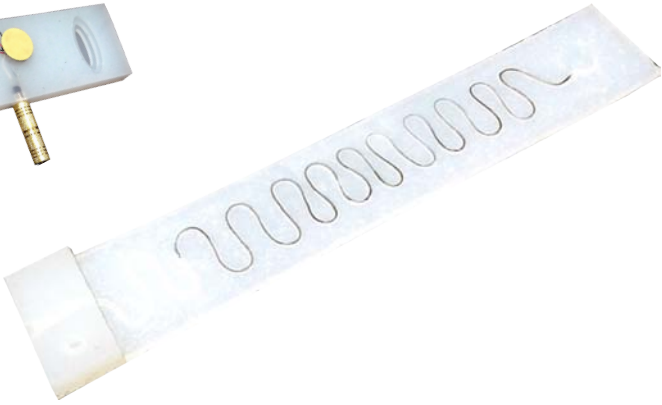
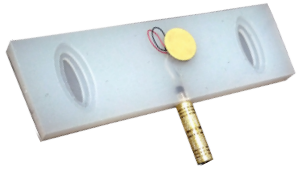
Recording/Playback as a function of recorded rhythm of interaction with object

Projecting Rhythms in Sensor Network

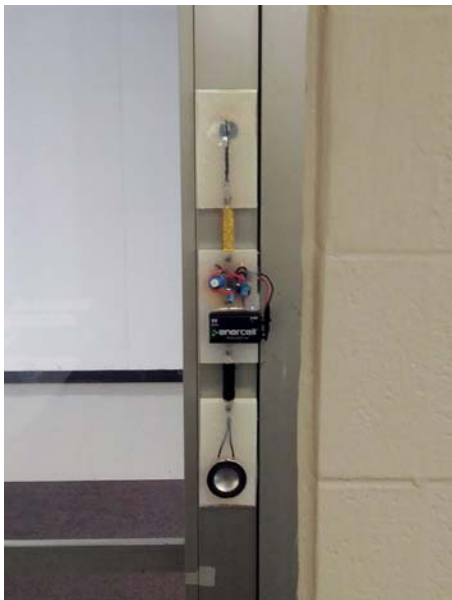
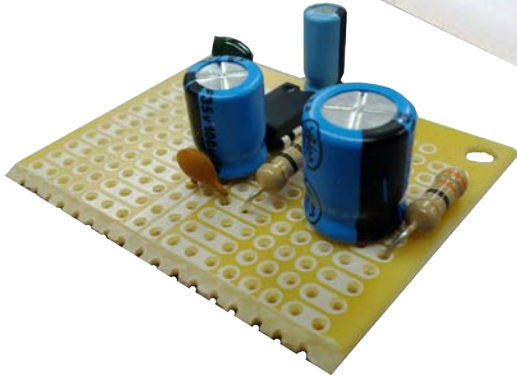
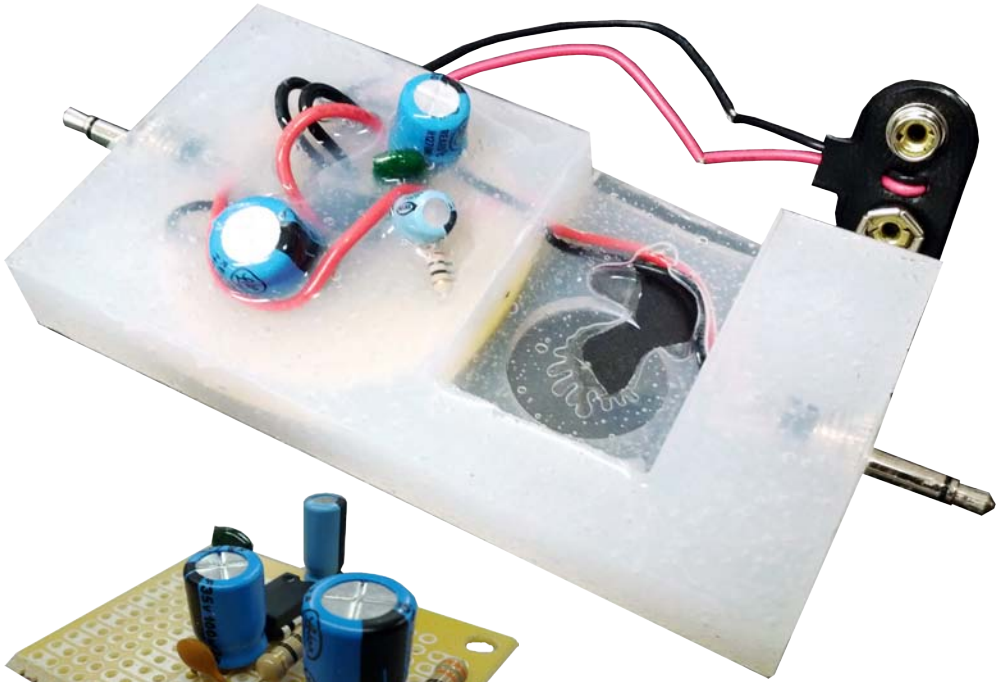


Network of sensors-microphones-speakers attached to objects in space

Each sensor-microphone-speaker attachment records rhythms of use and the sounds produced through use. Sounds are fed back into the space as a function of the rhythms of use recorded by the object.

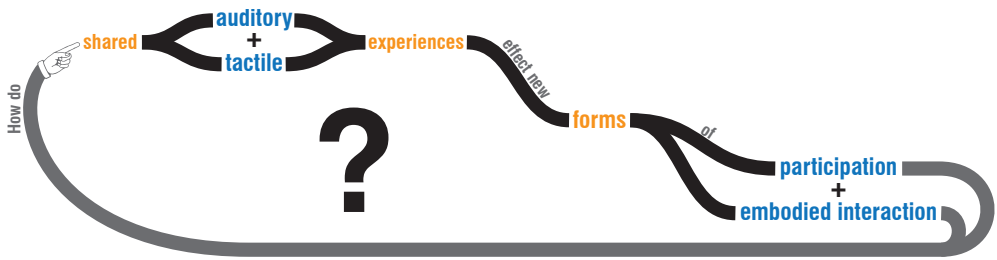


Interface Design



Part III-----

-----**Initial Research**



Performance



"Swinging Suitcase"
Jessica Thompson

"Performing Space"
Pedro Rebelo

Positioning "the artwork in a condition which is ultimately event based; the experience of 'playing' an interacting environment" (pg. 8)

Embodied Interaction



"Lady's Glove"
Sonami, Bongers

"Entangled"
Chris Salter

Turning "bodies into alternative 'controllers', through wearable sensors, carried objects, maladjusted instruments, and augmented outlets" (pg. 217)

Participation



"Sky Ear"
Usman Haque

"Personalized Architecture"
Usman Haque

"Negotiating with their neighbors"
"Go through the same process that designers go through in negotiating, in critiquing, in developing."

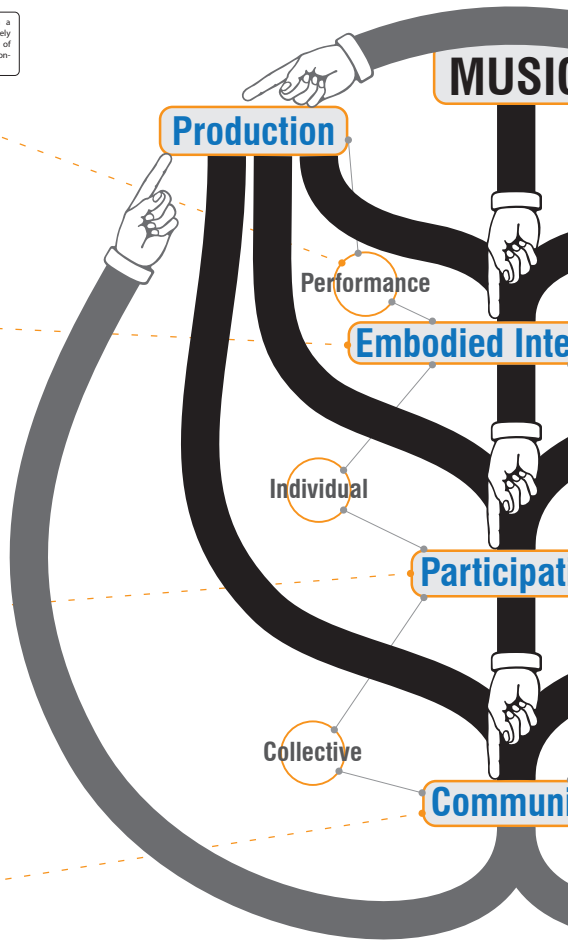
Community

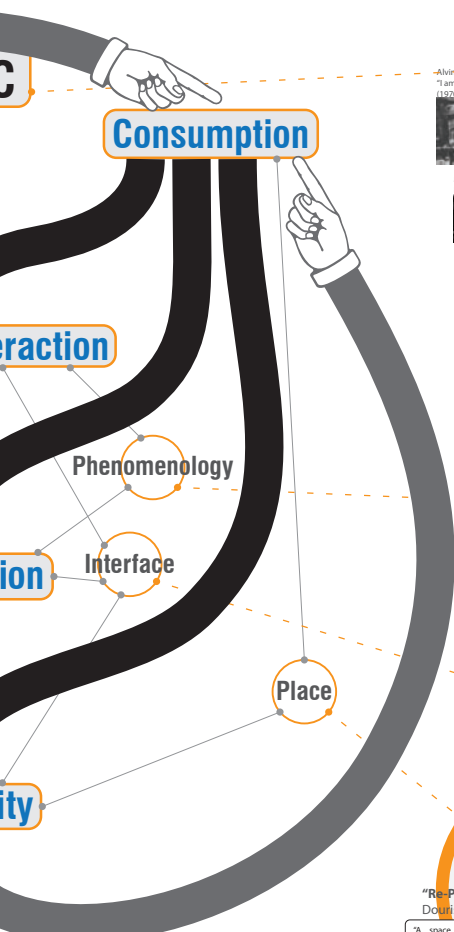


"Reactable"
Jorda, Kaltenbrunner, Geiger, Alonso

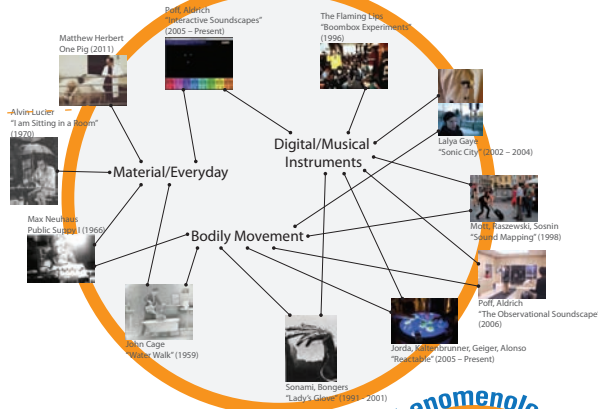
"Malleable Mobile Music"
Atau Tanaka

"Users of the current system constitute a community contributing to the creation of a single musical stream in real time." (pg. 2)





Music



Phenomenology

"Disembodiment and Cyberspace"
Rihaj Ajana

"Through the medium of the body that we get to 'experience' and 'perceive' the world" (pg. 4)

"Pepsi Pavilion"
E.A.T.
Experiments in Art and Technology

Interface

"The Eyes of the Skin"
Juhan Pallasma

"The senses define the interface between the skin and the world, the interface between the opaque interiority of the body and the exteriority of the world" (pg. 29)

"Sonic City"
Lalya Gaye

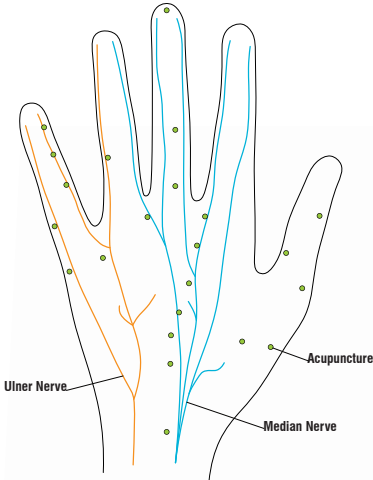
Place

"Re-Place-ing Space"
Doulish, Harrison

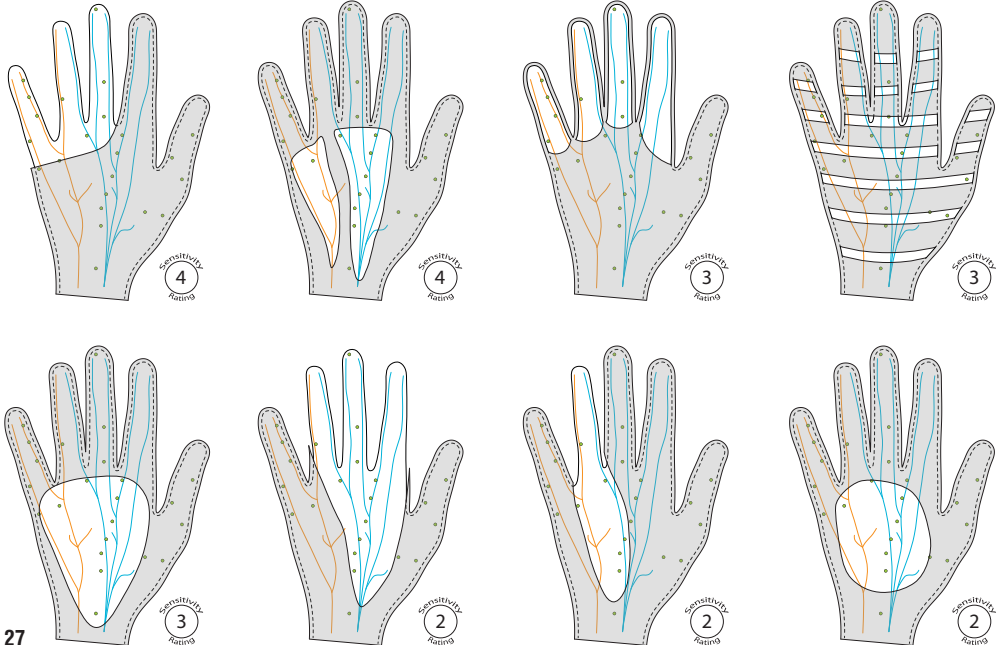
"A space with something added- social meaning, convention, cultural understandings about role, function and nature and so on" (pg. 3)

"Sound Mapping"
Mott, Raszewski, Sosnin

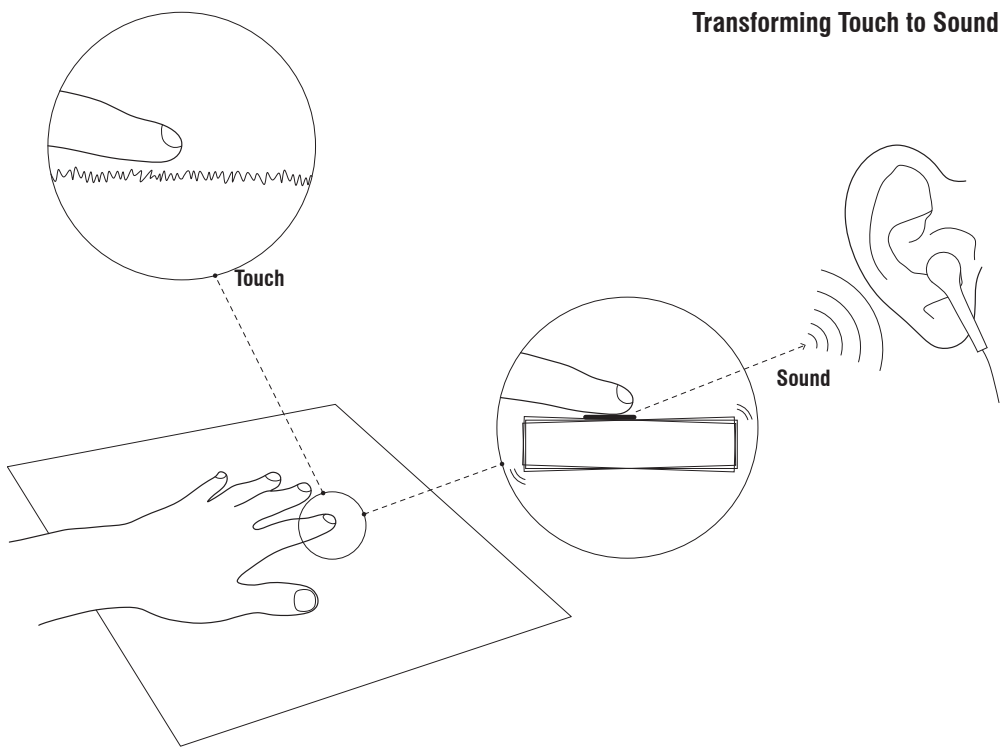
Manipulating hand sensitivity



Sensitivity Scale

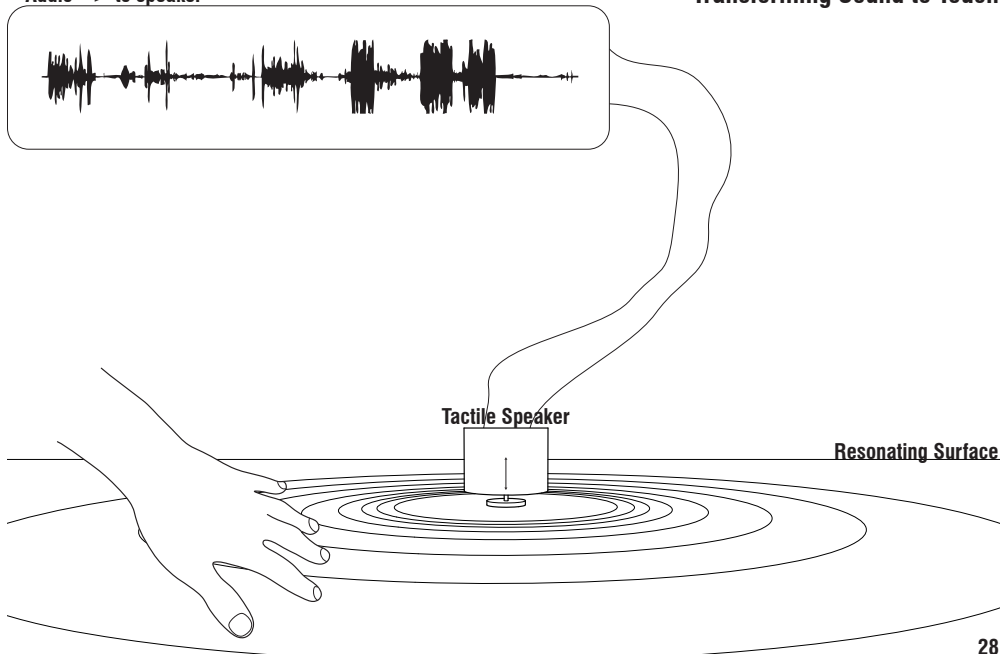


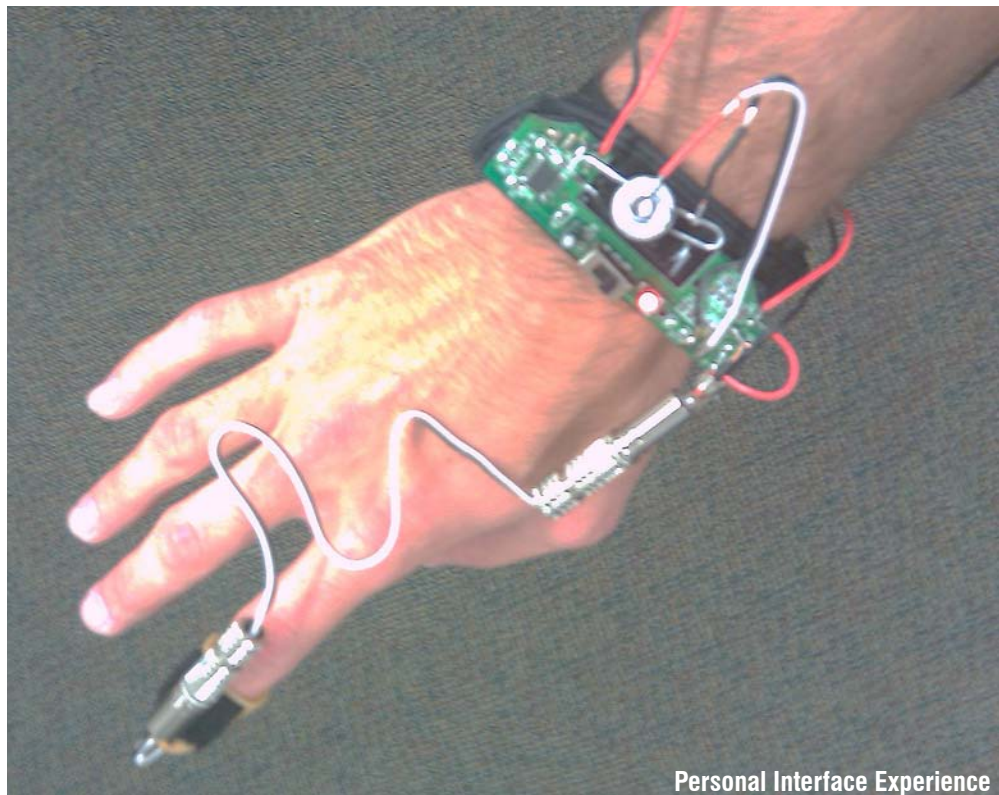
Transforming Touch to Sound



Audio --> to speaker

Transforming Sound to Touch

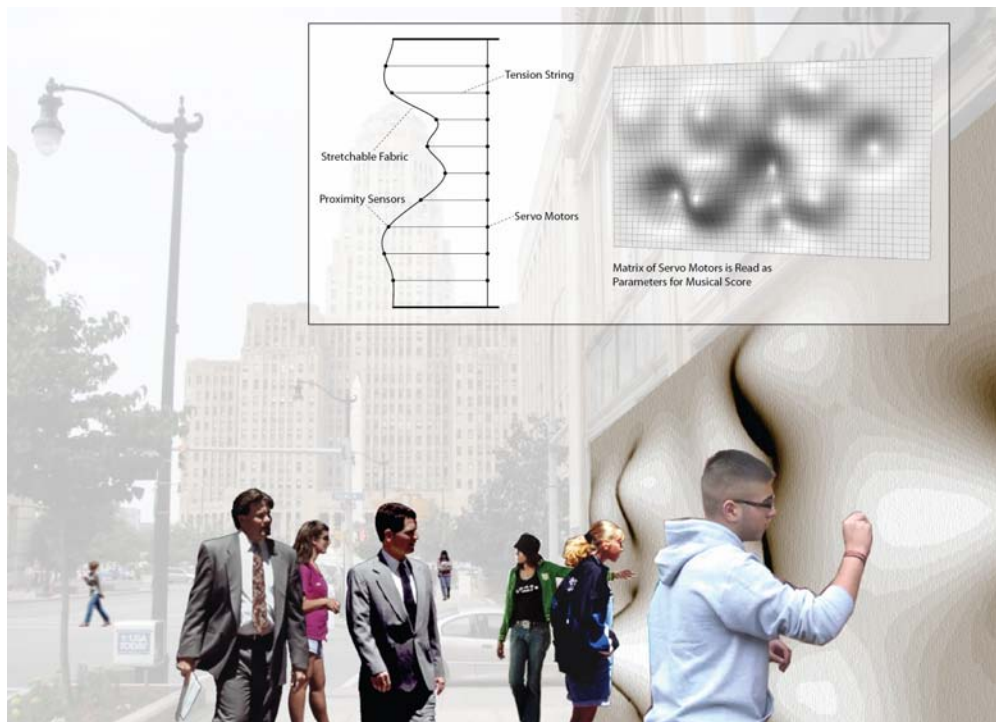
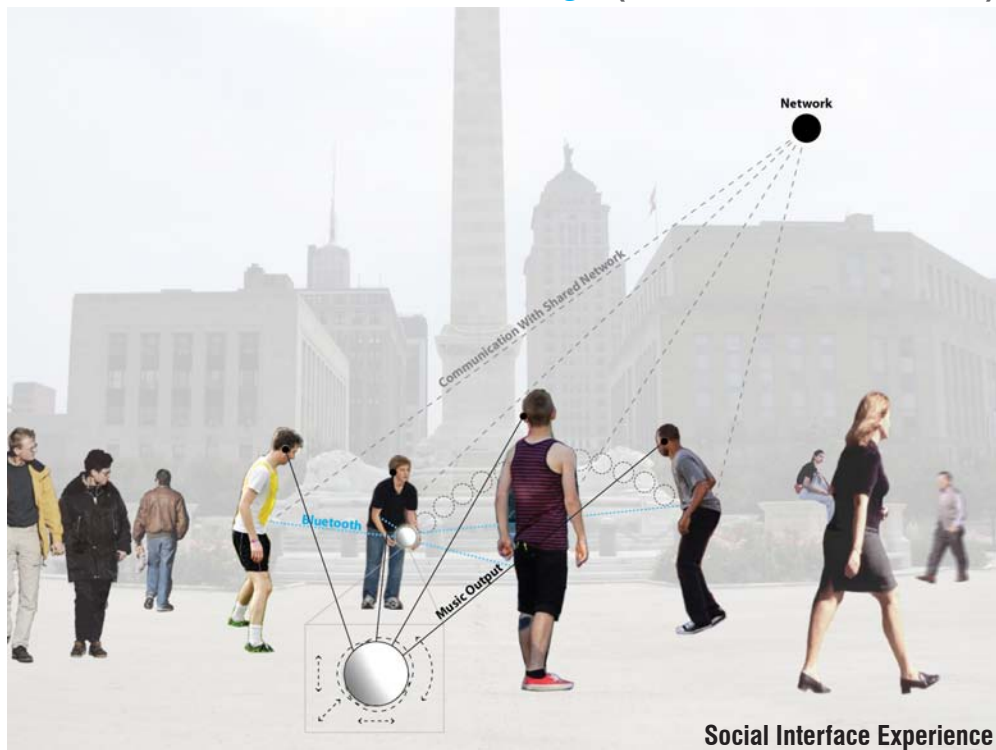




Personal Interface Experience



Interface Design (Embodied Interaction)



ID4 Tags (in addition to ID3)

Source(s): 3

Location(s): 1) Buffalo, NY --- 2) Cleveland, OH --- 3) Toronto, ON Canada

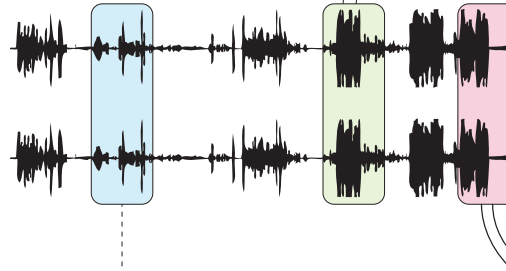
Contributor(s):

Material(s): 1) Large tree in backyard --- 2) City traffic --- 3) Tumble dryer + rocks

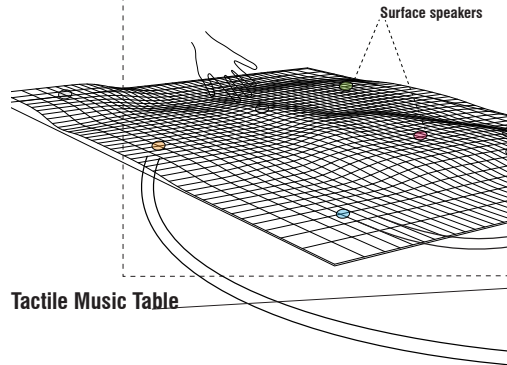
Date(s): 1) 08/03/2010 --- 2) 11/15/2011 --- 3) 01/01/2011

Significance(s): 1) In the process of cutting down a tree that has been bothersome for years --- 2) None --- 3) Child put rocks inside dryer

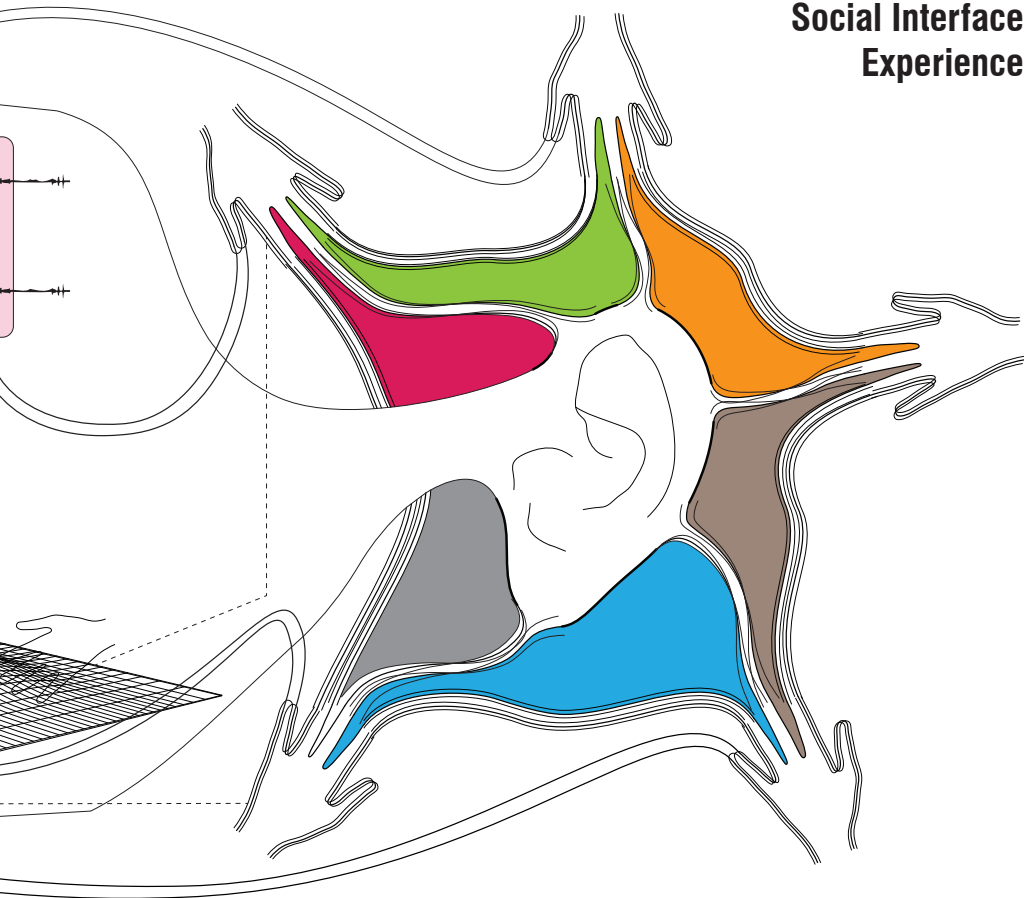
Online Sampling Network



Sounds recorded by wearables can be transferred via bluetooth to this table installed in an urban public space. The sounds are added to the pool of loops after being uploaded, where loops are being played through surface speakers. The se speakers vibrate the table turning it into a speaker. The table is also a public mixing station. Through an (undesigned right now) interface, people can come to the table, hear a constant stream of user uploaded audio samples and mix them as well - changing which loops are playing, volume, speed, EQ, etc.



Social Interface Experience









<http://blog.adamlaskowitz.com/>