MIT

UnGreen
Field Radio
and
Acoustic
Immersions

Rasa Smite & Raitis Smits
Casey Tang, TA

ΛCT

MIT program
in art, culture and
technology
School of Architecture + Planning

Introduction to Sound Creations

Instructors: Rasa Smite and Raitis Smits

TA: Casey Tang

Final Show
Wednesday, December 11, 2019, 10.00-12.30 ACT Cube, E15-001
Wiesner Building, 20 Ames Street, Cambridge, MA.

Reviewers:
Tobias Putrih
Sohin Hwang
Nicolas Kisic Aguirre

Introduction to Sound Creation
UnGreen Field Radio
and Acoustic Immersions

This introduction to Sound Creation course focused on the production, history, and theory of sound art, radio experiments, environmental recordings, acoustic immersions, and data sonification. The sound also was used as a medium and material critically exploring the notion of "green", as well as its invisible properties, contradictions and paradoxes.

Sound is a powerful force in organizing the space; it is sound, not visuals, that mark dramatic shifts from one world to another. Technologies for sound creation have changed over time from analogue to digital, from waves to data, but the physical acoustic properties remain the same. What we hear can be very different from what we see. Sound surrounds and immerses us. Above all, it resonates, allowing things to respond to each other in non-linear ways. Acoustic vibrations resonate inside the body, creating different emotions and associations. Sound expands our external world, the urban environment, nature, and outer space. Scientists and artists listen to the universe, and radio signals radiate far beyond our planet after transmission.

Nature has always been the biggest 'broadcaster'. We also can easily say that radio signals occur naturally. However, the relations between the signals, electromagnetic waves and nature have been for a long time forgotten as shadowed by broadcasting media and dominance of the visual culture. Connections between signals and nature have been closer looked only by the scientists in the 19th century when radio waves were invented. Throughout the 20th century, those were mainly artists, who continued to explore physical properties of sounds, signals, waves and emissions as a natural phenomena.

Hence, environmental sound explorations and "nature radio" listening have a long history in the art and science. Radio was heard before it was invented – in 1870s, Thomas Watson using Bell telephone in Boston received radio signals from nature and outer space. In 1960s and 1970s composer Alvin Lucier, used very low frequency antennas, brain waves and sound feedback in his performances and sound installations. At MIT, composer and artist Maryanne Amacher, created a storm soundtrack for John Cage's multimedia "Lecture on the Weather" (1976), and set up a live transmission link from Boston harbor, using telephone line.

This course continued exploring the sound in relation to the environment through listening, sensing and visualizing experiences, hence re-establishing the lost link to nature and environment, and using it as a point of departure for creating an artistic work. Artistic means, and sound in particular, is well suited to reveal the disentangle notions such as 'aliveness', 'naturalness, and' 'greenness'.

This course conceptually is built upon the GREEN* – ongoing international collaboration and "UnGreen" exhibition series project (http://ungreen.rixc.org, http://festival2019.rixc.org) that aims at complicating the pervasively employed notion of "green", providing a cross-disciplinary platform for discussions and artistic interventions exploring one of the most paradoxical and broadest topics of our times. The artists of "UnGreen" exhibition make audible and visible the "green ray", the beautiful last beam of the sunset as described in Jules Vern's novel; visualize the data "calculating" how much green color is or rather – is not – in the "green forest"; as well as discuss why we see nature green, if plants don't actually use the green spectrum band...

The students explored "greenness" by using wave scanners, field recordings, sensing technologies and other "techno-scientific" tools allowing us to receive "nature radio" signals, revealing patterns of urban environments, as well as listening to the invisible activities in nature – plants, soil, trees, swamps, bacteria, or underwater. As a result, students developed site-specific sound installations, immersive environments, sonic interventions, and field radio programs, revealing the invisible properties of "green".

Rasa Smite and Raitis Smits,
December 2019, MIT ACT

GREEN* – Green Revisited: Encountering Emerging Naturecultures is a new international collaboration project and exhibition series initiated by RIXC (Riga) and curated by Rasa Smite, Raitis Smits and Jens Hauser. The first exhibition with the title "Un/Green" took place at the National Museum of Arts in Riga, Latvia (Summer 2019). The next edition with the title "Ouverte" takes place in Bourges, France (Fall 2019 - Winter 2020), and it will be continued by broad activity program – residencies, field laboratories, workshops, exhibitions and public performances organized by GREEN project partners throughout Europe (2019 - 2022). The best sound works by the students of this class will be selected and included in GREEN project public presentations.
http://green.rixc.org , http://ungreen.rixc.org, http://festival2019.rixc.org

UN/GREEN
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Green, symbolically associated with the *natural* and employed to hyper-compensate for what humans have lost, in this exhibition is addressed as the most anthropocentric of all colours.

Jan-Peter Sonntag
GAMMAvert

Adam W. Brown
Shadows from the Walls of Death

HeHe
Toy Emissions (My Friends All Drive Porsches)

Francisco López
Hyper-Rainforest

Contact mic workshop (above) . Midterm review (below)

Final Presentations

Baian Chen, Electrical Engineering and Computer Science, ACT conc.

Baian Chen
GREEN - Garden, Railway, Edifice and Entangled Naturalness

composition, 3 pieces, 3 min each.

GREEN is an acoustic discussion on things and scenes that pretend to be "green". In this work, each recording comes from a green-called site. However, the acoustic environments in these sites are ironically not so "green".

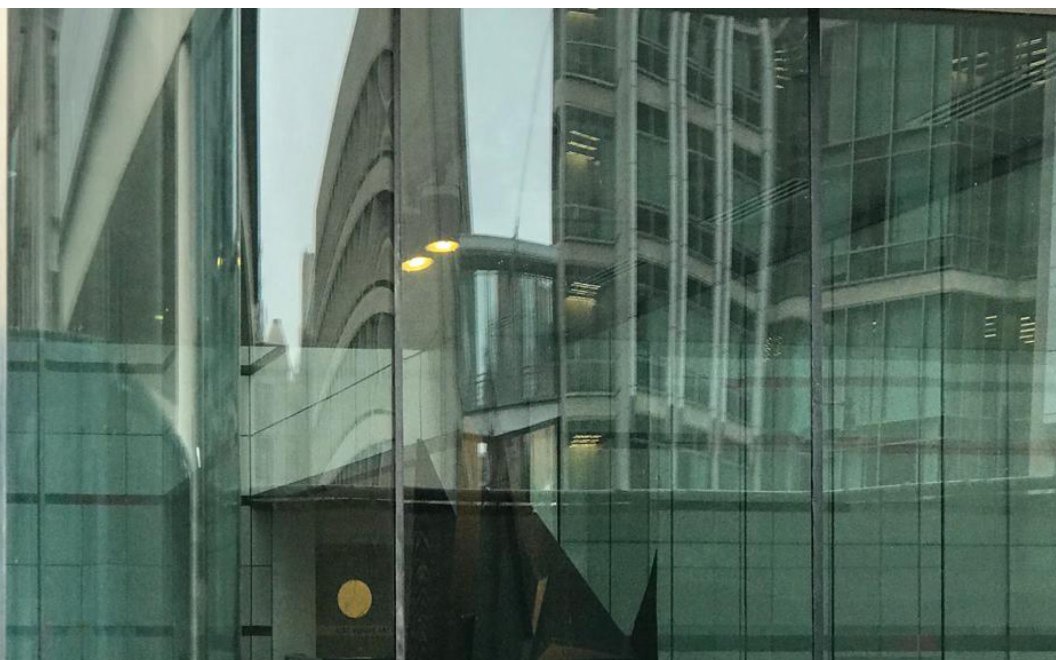In this sound piece, three sites are explored with a focus on sound:

- GREEN Garden: an exquisitely maintained garden next to MIT Tang Center. The garden is beautiful and lively. However, multiple constructions are on-going nearby.
- GREEN Line: a metro line expanding across downtown Boston, a signature of industrialization on the landscape of this city. It is the oldest Boston rapid transit line with tunnel sections dating from 1897 -- the oldest in America.
- GREEN Building: an academic and research building that houses the MIT Department of Earth, Atmospheric and Planetary Sciences. It was built in 1962 with concrete structure as the highest building at MIT campus. Though it is also called "Green Building", it falls very far from the "green building" standard that signifies the sustainability of an architecture.

My project contributes to the "green" discussion initiated by Jens Hauser* and RIXC*'s "UN/GREEN" exhibition, aims to reveal that things and scenes that are "green", and explores the relationship between the "greenness, aliveness and naturalness". Comparing the visual experience with the acoustic experience in this work, what's "green" might not necessarily be alive or natural. The conventional narrative entangling greenness with aliveness and naturalness should be critically scrutinized.

* Jens Hauser, "Disentangling Aliveness Greenness and Naturalness"
* ungreen.rixc.org, The UN/GREEN exhibition
* green.rixc.org - GREEN project

Arditha Auriyane is a gradaute student in the Department of Architecture, MIT

Arditha Auriyane
Revolve/Float

8min

The interior-exterior topic, bringing the exterior in, has been an ongoing subject of observation in architecture. Could it be that it points to humans' longing to coexist with nature, while being trapped to the interior for a sense of security? We are in between.
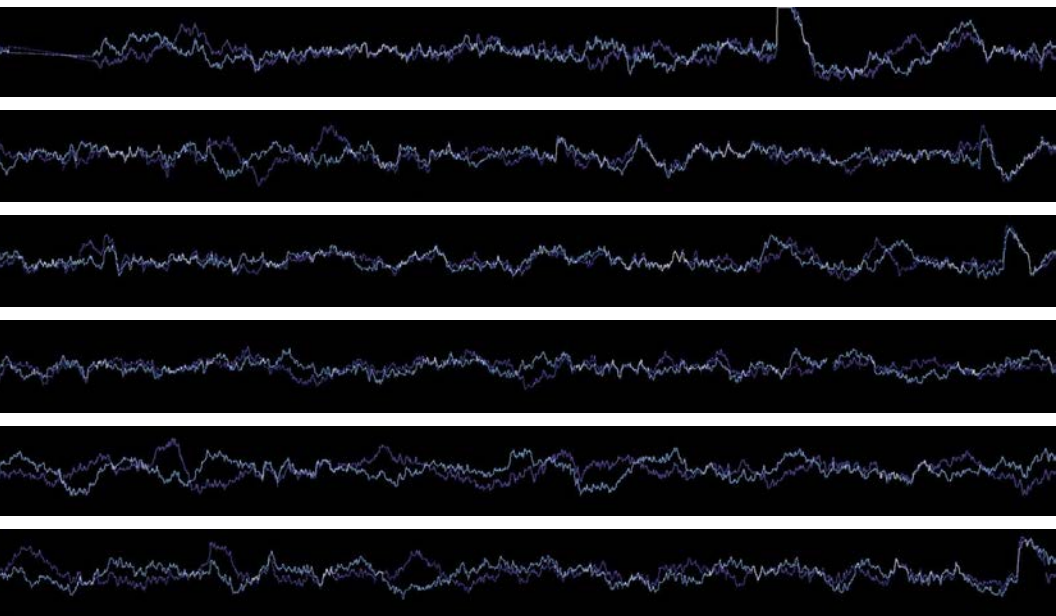
Revolving doors are contradictions. It was designed to keep the inside air pressure and temperature stable without any air infiltration from outside as one passes through. Yet, as one travels through it, one transitions from the outside to inside in so seamlessly without the stark disconnection of interior and exterior. Revolving door is an ecology of negotiations between nature and tamed nature that we bring to our interior environment. Both are nature, but they pollute each other. Nature is no longer as we know it because we pollute and tame it. Potted plants, domesticated pets, conditioned air, tap water, are only some of the many instances of tamed nature that we bring inside, and yet at the end of their consumption still manage to pollute the nature outside. This interconnection makes a new kind of "ecological relationship," a rather ironic one.[1]

Revolving doors are continuous, enabling us to float in between. It surrounds, immerse, enables us to swim, float, get lost inside, or outside, or in between. Revolving doors are the ultimate architecture device to create ambient music.[2] Going through revolving doors, the body encounters sound and space of the intermediate.

This piece explores this theme of ambiguity and interconnectedness between inside and outside, nature and tamed nature. As revolving doors take you inside, outside, overtime the two begin to overlap and blur, and they might switch places unknowingly.

1 Felix Guattari, Three Ecologies
2 Brian Eno, Ambient Music

Mariana Medrano is a graduate student in the department of Architecture, MIT

Mariana Medrano
The Sound Of Dreams

8min

"A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction. Social reality is lived social relations, our most important political construction, a world-changing fiction." Donna Haraway, "A Cyborg Manifesto", 1991
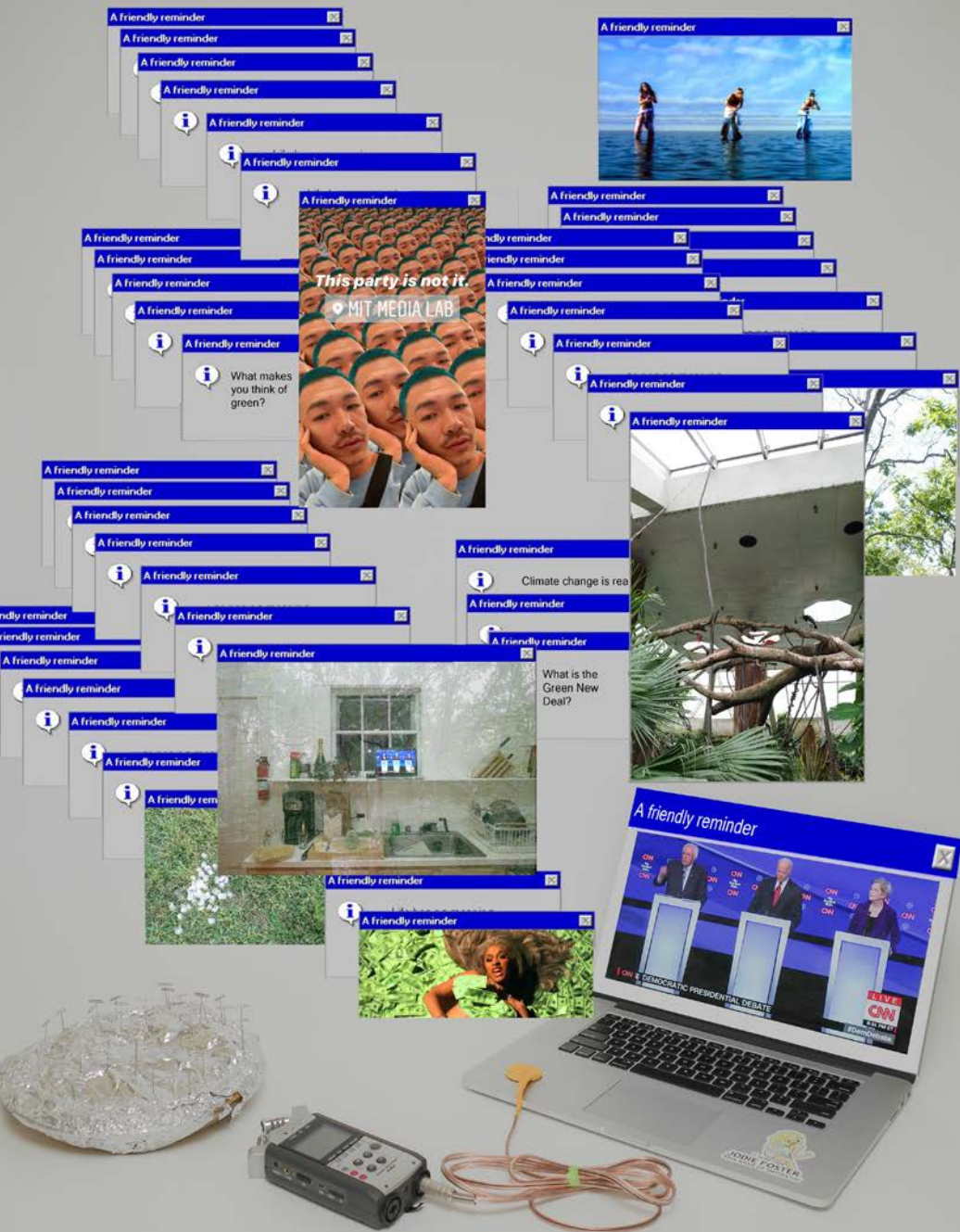
Our dreams are an ultimate subjective experience. Ourselves, the subject, weave the world outside into our intimate interior being. Dreams are inexorable from our identity, a construct from which we derive selfhood, though dreams are by nature a heteroglossia of the world within and without us. In this sound piece, the dreamer falls into a state of hypnagogia, not quite awake, not quite asleep. and dreams. Her biometrics are closely tracked to predict when and how she will dream, and she is prompted to speak each time she dreams. The dreamer's mind is opened to witness in multiple capacities through electromagnetic wave interpretations and narrative, enabling the audience to join in the dream.

The first part of this piece is a sound-based documentation of a dream, tracked through an EEG brain activity scanner, a heart rate meter, and performative sleep-talking. The dreamer attempts to keep track of her identity through her dreams, but coherence and selfhood are lost in a sea of kaleidoscopic, unnerving, and sublime imagery. In this piece, three dreams are narrated in the order that they presented themselves in the dreamer's mind, performed from an original voice recording that happened simultaneously with the dreams themselves. Brain activity and heart rate were translated into sound waves to provide a biological backdrop to an otherwise non-biological phenomenon for which scientists have found no singular purpose: dreaming.

The second part of the piece is a composition concocted from different techniques, methods, and songs to bring the listener to an altered state of consciousness, similar to a hypnogogic state. The piece is composed in narrative, while also aiming to illustrate how brain waves are influenced by certain beat patterns and frequencies to expand or deviate from their typical range.

NOTES: What does it mean to go deep into dreams, what perhaps epitomizes selfhood and human individualism? God-complex, frontal complex operations, where and how do we dream, what does that mean about us? Do other species dream? What do we dream about?

Wuyahuang Li is SMArchS in Architecture + Urbanism, MIT

Wuyahuang Li
American Pie And The Sink Noise In The Political Soundscape Of Climate Change

8 min

The political conflicts come to resolution less by the assemblage of confronting parts than by registering "the opposition as a composition of the parts".[1] The subversive noises are dialectical to voices in the political soundscape in want of "cultural autonomy and support for differences or marginality."[2] Given the global wake of our climate crisis, a renewed interest arises in taking noises from the social and natural undercurrent into account.

Food is often instrumentalized to question and challenge current forms of political power [3]; furthermore, the apple pie registers the intermediate vehicle to package planetary concerns into American households, yet a parody of the out-of-reach Green New Deal.[4] In a probe of "what if nature goes on strike," the missing carbon sink [5], on the other hand, stretches climatic concerns from the local and national scale to the global network.[6] The kitchen, spatial metaphor for noise production, also becomes a proxy to the natural system, sites from forests and oceans that captures an excess of carbon-dioxide externalities of global carbon emissions.

American Pie and the Sink is a multi-channel sound project which subverts the images of household goods for the purpose of noise production to include those we do not normally account for in the political landscape of climate change. The noises, collected from interviews and woods, bring immediacy to the Boston climate strike and bring us back down to Earth. [7]

1 Aureli, Pier Vittorio. "Towards the Archipelago." In The Possibility of An Absolute Architecture, 1–46. Cambridge, MA: MIT Press, 2011.
2 Attali, Jacques. "Audio Culture: Readings in Modern Music." In Noise and Politics, 2nd ed., 31–34. New York: Bloomsbury Academic, 2017.
3 Cooking Sections. The Empire Remains Shop. Columbia Books on Architecture and the City, 2018.
4 Robinson, Eugene. "A 'Green New Deal' Sounds like Pie in the Sky. But We Need It." Washington Post, February 7, 2019.
5 Gabrys, Jennifer. "Sink: The Dirt of Systems." Environment and Planning D: Society and Space 27 (2009): 666–81.
6] Latour, Bruno. Down to Earth: Politics in the New Climatic Regime. Medford, MA: Polity Press, 2018.
7 Ibid.

Erin Wong is a Master of Architecture Candidate, MIT

Erin Wong
SimultaneouStories: Memories of Nature

8min

 "The ear favours no particular "point of view." We are enveloped by sound. It forms a seamless web around us."[1]

The society we live in today could not exist without the influence from past generations. Human beings, as creatures of habit and tradition, hand down lessons and knowledge from one generation to the next. We pride ourselves on leaving a legacy of knowledge for our descendants to utilize. Our ability to learn from our ancestors' past decisions and use that knowledge to give ourselves an insight to our own problems gives us an advantage rarely found in other species, that of a communal knowledge pool. Our tradition of storytelling facilitates this transfer of knowledge. As a result, storytelling remains to this day the single most important tradition humans participate in.

Due to the use of advancing technologies, it has allowed humans to utilize all forms of storytelling. The advent of the radio transformed the reach and saturation of information. Neither illiteracy nor even a busy schedule impeded radio's extent; one could now perform an activity and listen to the radio at the same time. This unprecedented reach made radio an instrument of social cohesion as it brought together members of different classes and backgrounds to experience the world.

The sound piece began with a question: how do we describe nature? Throughout the semester, various methods were employed. A series of bike rides through Frederick Olmstead's Emerald Necklace, using a contact mic to record the journeys; and several interviews, the last of which feature four children and four adults who were asked to describe a memory of nature. In the interviews conducted, Nancy explains, in mandarin, her Chinese new year's family traditions. Eight-year-old Clara talks about the house where she grew up, the birth of her baby brother, and a series of other life events. The sound piece began with one question, but through its different iterations it poses another question: what is our relationship with nature? In all the interviews, nature is not mentioned, its presence is merely a backdrop for other things to occur.

1 Marshall McLuhan, The Medium is the Massage

Alejandro Gonzalez is an undergraduate student in Art & Design 2020, MIT

Alejandro Gonzalez
States of Liquid

8 min

States of Liquid is a piece that explores acousmatic sound intersections that exist unexplored in our everyday environments. Acousmatic sound is sound which is heard without seeing or completely understanding the source.2 These intersections can occur between artificial and non-artificial sound sources. This composition is thereby also exploring the 'naturalness' of sonorous objects and analyzing the concept of 'green'; as perceived in 'nature versus culture'.[1]

Most people are subconsciously trained to focus on those sounds within our spatial hearing range and/or attention span.The manipulation and over-lap of different sounds can make us aware of the sound combinations that typically get lost in our 'sea' of sound. The surplus of sound acts as a veil which occludes the true source of sound.[2]

The methodology for this project is to first identify and record multiple sources within environments. More specifically, the piece focuses on in-tersections where the 'naturalness' of a sound shifts from human-driven to an inevitable and physical sound. To further explore the role of each sound within its environment, sound clips were manipulated with various effects and filters.

Sounds can be culturally or socially encouraged upon people. In extreme cases sometimes forced upon us; simply because we exist within our en-vironments. There is no choice over what sounds we WANT to listen to. States of Liquid, should be able to create awareness of sound, and offer new intersections of sounds. This way we will learn a bit more about the ambiguity of what is 'natural' and this way we can appreciate certain sound phenomenon a bit more.

1 Schaeffer, Pierre. 'Acousmatics'. "Audio Culture Readings in Modern Music". 151-160. Bloomsbury Academic, 2017.
2 Hauser, Jens. 'Disentangling Aliveness, Greenness, and Naturalness'. "The New State of Living". The Museum of Contemporary Art PERMM, 2019.

Qian Guo is an graduate student from Harvard Graduate School of Design (Art, Design, and Public Domain). She had a background in architecture. Qian is interested in storytelling and has explored different media, including architecture, comics, animation, performance to approach it. She used to focus more on private domain, about the alienation of people in contemporary world, yet now she's also trying to explore public domain concerning social and political issues.

Qian Guo
An Apple

8 min

Is an apple dead or alive when it's fallen? We treat an apple like a lifeless be-ing, like a piece of bread. Yet within an apple there's a seed that could grow into another apple tree. A fallen apple is thus not an end but the beginning of another cycle of life.

The vitality of an apple tree is easily appreciated when we see the branches stretching out to the sky, or the flowers blossoming, yet the power contained in an apple is usually neglected. An apple is merely an end product of agriculture to us, the destiny of which is to be consumed. We see an apple, but could not see through it the trees: a tree that bears the apple, and a tree that the apple could be. We are cut off from the natural life cycle of an apple: a life dealing with not only the individual organism, but also the transformation in an intergenerational process, and the integration in superordinate systems.[1]
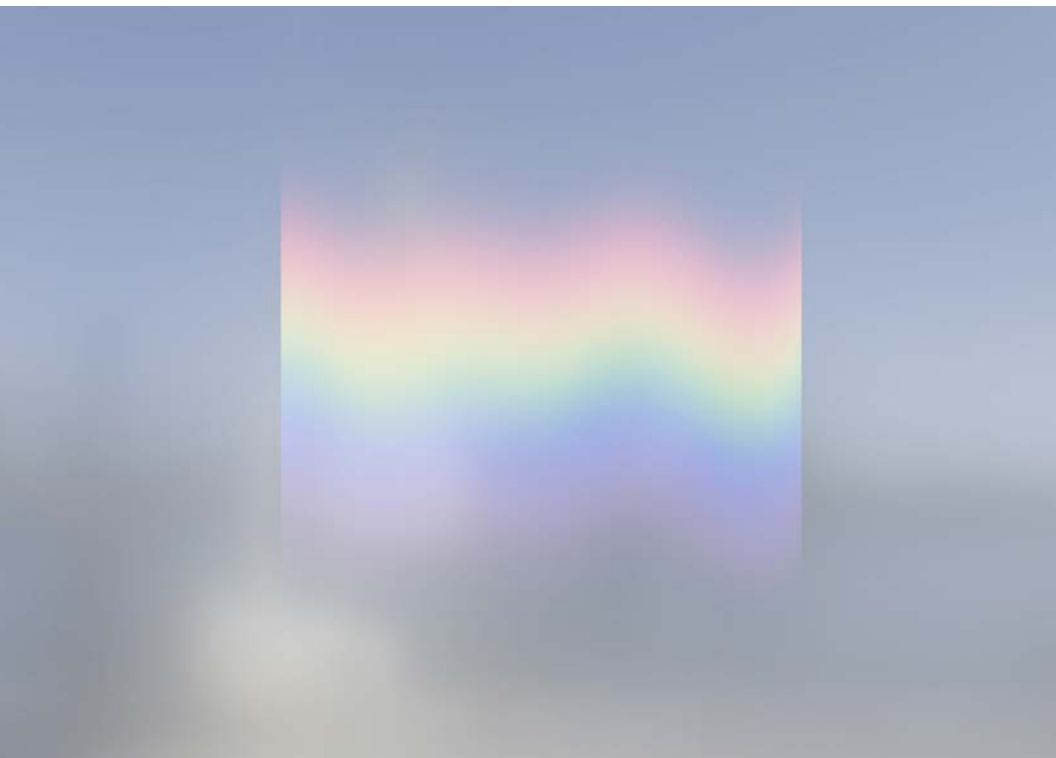
In this sound piece, I mainly worked with apples and apple trees. I rubbed and shook the branches of the trees, recording it with a contact microphone. I also played with the apples, rolling them around on the ground or dropping them in the grass. I bit the apples and recorded the sound.

Being extracted from the original context, most of the sounds are no longer literary, and I treated them primarily as 'material', according to their different pitch, tone, and quality, arranging and creating them into a complete sound piece. Thus the audiences just listen to the sonorous forms, without any aim other than that of hearing them better, in order to be able to describe them through an analysis of the content of their perceptions.

The usage of an apple as an instrument to make sound takes it out of the common process of agriculture, giving it more meaning than simply a product to be consumed. The vitality and potential of the apples becomes tangible in the form of sound: on the one hand, sound, as a medium for creating the vibration represents energy itself; on the other hand, the sound that the apple makes is manifesting its very own existence to us.[2]

1 Hauser, Jens. 'Disentangling Aliveness, Greenness, and Naturalness'. "The New State of Living". The Museum of Contemporary Art PERMM, 2019.
2 Schaeffer, Pierre. 'Acousmatics'. "Audio Culture Readings in Modern Music". 151-160. Bloomsbury Academic, 2017.

Shane Zhang is a graduate student in the Department of Architecture, MIT

Shane Zhang
Shifting Focus. An acoustic exploration of the Sailing Pavilion
8 min

"The object of our attention becomes the reality of our world." - Gregg Braden, an American author of Conscious literature

Our reality is shaped by the way in which perceive the world; perception equals reality. However, the way we perceive the world can be influenced by where we focus our attention. By focusing (and not focusing) on certain aspects within our environment, we can eliminate certain elements and drastically skew the experience of the world around us, thereby changing our own perception of reality.

In "Ecology Without Nature", Timothy Morton argues that one should not only see Nature as "a certain set of things" but should rather see that "Nature covers absolutely everything". Likewise, we should recognize that our perceived realities are heavily influenced by the sounds we hear and that there isn't a set reality, but rather reality is a construct of all the sounds in the space - foreground, midground, and background. In "Profound Listening and Environmental Sound Matter", Francisco Lopez argues that "this perceptual ambiguity is at the basis of our comprehension of 'reality'".

I am interested in the way our shifting focus skews the perception of our world and thus skews our perception of reality.

For the sound piece, I created an experience that is akin to the way we alter our perceived realities by shifting our own focus. Field recordings from the same place – the sailing pavilion – were used for this sound piece. Through oscillating between an indiscriminate (unfocused) experience and a discriminated (focused) experience, it attempts to simulate the attentive and the un-attentive mind. The un-attentive mind absorbs sound passively and does not discriminate; the attentive mind focus on specific sound sources and attempts to isolate it by bringing the background sound into the foreground, hencing creating a new version of reality.

References:
Timothy Morton, Ecology Without Nature, 2007
Francisco Lopez, Profound Listening and Environmental Sound Matter, 2011

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