

FOSSIL MORPHOLOGY

化石形态学

RISD

PHOTOGRAPHY

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By Leah (Zixuan) Zhang

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Approved By Master's Examination Committee:

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Alex Strada

Assistant Professor in Residence, Photography Department, Rhode Island School of Design,  
Thesis Committee Chair

---

Steven B. Smith

Head of Department of Photography Professor, Rhode Island School of Design

---

Jinying Li

Department of Modern Culture and Media Assistant Professor, Brown University

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**Abstract**

*Fossil Morphology* is a multi-media art project based on my research on the coal mining area in East Pennsylvania. It consists of a film, a series of photographs, and a sound installation. Together, the three works form a dialog among each other about the ecology and aesthetics of the region's coal mining landscape and its underground.

For a long time, coal, as an raw material for mass production, has been understood and examined from its economic values and social meanings. The gradual abandoning of this material by our industry therefore leads to the seemingly inevitable decline of the coal mining activities, the deceleration of life in the coal town, as well as the uncultivation of environment. As a basic element of Nature, coal is re-examined and re-thought in this group of work so that it can be re-situated within the network of our eco-system, re-aligned within its inherent connection with humans, and re-oriented as a crux that sustains a pre-symbolic resonances with life.

## The Purple Mire

“I was also born in a mining town, an iron ore mining town — not in America, but in China.” This is how I would introduce myself when I was working on my thesis project *Fossil Morphology* centered on the coal mining towns of East Pennsylvania. The project began with my curiosity in understanding the mining reality in a different country. In the summer of 2020, I traveled to the Pennsylvanian coal mining districts with my cameras and started to get to know the people and environment there. In order to connect myself to this foreign land, I would always tell them about my hometown.

I grew up in the 90s in a small town in North China. In fact, my hometown is more a company than a place. It is named after its industry – Central Shandong Metallurgy and Mining Company – the iron-ore mining company. The population consists of around 70,000 people who predominately work for the company as miners, engineers and rear service. I lived in Central Shandong Metallurgy and Mining Company until the age of 9. My childhood was a period when China had adopted the “Open Door Policy” and made some progress in its economic development. This policy, initiated by Deng Xiaoping in 1978, allowed China to open itself up to foreign businesses. In the 90s, the industrialization in the US witnessed its dramatic decline. During the process of globalization, the US began relying upon countries (mostly the so-called “third-world countries”) that had lower labor cost. As a result, the 90s was a period when the development of industries in China greatly advanced. My hometown company was one of them. The mining and metallurgical industry there was developing feverishly, and there was even a time when supply exceeded demand. I had no idea what the mining towns looked like in the US during the 90s, but I have been imagining what it would look like now from time to time

after I came to the US. The underlying connection of the two different mining landscapes has been driving me to reflect on my hometown.

My hometown, Central Shandong Metallurgy and Mining was built in 1970 and owned by the Chinese State Council. It was a mine enterprise that concentrated on ferrous metallurgy. However, what meant more to me at that time was the relations of production in the industry, because as a child my everyday life was more related to how it felt like living in this government owned enterprise-community. While I was almost unable to understand what the underground mining process was and what products the company actually produced, I was familiar with the social relations that structured people around mining and byproduct processing.

In my memory, my hometown was a very self-sufficient as well as exclusive place. It had its own hospital, schools, theater, stores, newspaper and TV stations. All of these places were created to serve the workers in the company. Almost every family knew each other. All events and festivals were celebrated together by the people in the company. Likewise, the form of labor in the mine resulted in a corresponding way of distributing the wealth – workers received similar wages and lived in assigned apartments in the residency area. Every day, there were radio broadcasts of national news both in the morning and in the evening, forming part of the daily routine. The life there could be described as collective, regular, and self-sufficient. This sense of communism, if you will, secured the productivity and people's daily life in the company. People did not have to seek jobs across the country – instead, working in the mine sufficed to make a good living and feed their families. The simple and happy life there, in a way, entailed a strong sense of security. My hometown was like a tiny utopia that was well-planned

yet somehow unreal. It hid itself away from the other places that were not organized as a state-owned enterprise.

Two years ago, I revisited my hometown. I was surprised to come across a number of changes. One of them was “the purple mire.” I went on a hike up a hill. As I clearly recalled from my childhood, there were two major hills adjacent to each other near the town. However, in my trip this time, I found the gap between the hills had disappeared. The gap was filled up from bottom up by the waste left behind by iron ore mining — a thick, purple mud-like substance. It flowed from the pipes that connected the factories and was transported into this very gap (which formed a saddle between the two hills) that, once sedimented and walled off from both sides, became an enormous barrier lake of purple mire in between the two hills. The lake was vast. I could not see the further edge of it when I was standing in front of it.

The waste had been accumulating since I was a child, but I had no idea of its existence then because its inconspicuous scale. In 2019, after over 20 years of accumulation, the mire had become so deep that the gap disappeared between the two hills, collapsing them into one. On top of the hill, I saw the pasty liquid surging from the pipes, as if it were a fierce beast slowly gouging the landscape. It had a sense of magical realism — while this mire existed for years, it suddenly turned into something scary. Standing atop it, I was told by a miner: “If you fall into the purple mire, you will never be able to climb out, because it’s extremely thick and turbid. But the more horrifying thing would be that, if the dam collapses, the entire company town will be buried under the purple mire.”

In the long history of this publicly owned economy in the company town, the purple mire appeared, and no one knew how to effectively deal with it. Throughout the years, it

accumulated and grew from some invisible waste to a potential threat. This threat interrupts the perpetual cycle of production and reproduction. The purple mire is a byproduct that was not anticipated, or at least not counted into the cycle. It at once makes up a part of the economy and is rejected and ignored by the economy. This abject and abandoned waste becomes a counterforce to human production. It is something produced by time, a composite of the past, present, and future. I cannot help but think of what will happen – one day, it will probably eat my hometown.

Upon my return I realized that my hometown was not the safe place I had believed in anymore. The environmental change, a result of the industrial advancement, became a prominent factor that stood out. What I cared about – the peaceful daily life in the company – was made much less important because of the existence of the purple mire. Or perhaps, my hometown has never been a safe place, and the sense of security was just a fantasy. Other changes have come along together with the purple mire – the iron ore storage experiences declines every year, resulting in the decreasing need for labor force in the mine and affiliated factories. Throughout the past decade, a large number of people have been flooding out of the company and going to other places to look for work. The once self-contained company town has now participated in urbanization. The purple mire has become a strange piece of reality that smashes the beautiful dream.

I have become fascinated with the purple mire, both its form and its symbolic meaning. At that time, I couldn't fully explain why it was so attractive to me. I had this feeling that the purple mire had become a metaphor of what is left behind in the industrial advancement. What is ignored by most of us is its mysterious form and its power to haunt the human society that



created it. It was probably time that we pay some attention to it, I told myself. And soon after that, the purple mire began to crawl back and haunt my work, my thoughts and my vision. My photography series *I was Born in a Company* (2019) was my first attempt to understand this new socio-reality in my hometown. In this work, I documented the landscape and people I know in my hometown. I experimented on pairing the portraits with the landscape in order to understand how environment influences the psyche of the people. However, I did not pay much attention to the industry itself, nor did I find a way to depict the purple mire. At that time, I was more interested in blurring the boundary between my own memory and the contemporary reality.



Fig 1. Untitled (replanning the town), from the series *I was Born in a Company*, 2019.



Fig 2. Faces of a Family, from the series *I was Born in a Company*, 2019.

After coming to the US, I made my first visit to the mining towns of East Pennsylvania in the winter of 2019; what immediately caught my eyes was the coal there. I did not know that this beautiful, dark and shining natural resource is still everywhere. But it is much less consumed and as a result, the factories are now out of business. The existence of coal has become a strange phenomenon. The local economy, now largely supported by the four-wheeling sport (Brown), does not seem to bother about coal anymore. Yet, the things that were built for the coal mining industry still exist. The company housing is one evident example. Even though the houses are not owned by the company anymore, people still live in those row houses, of which the structure still reminds them of the history from time to time. Slightly outside the coal towns, there are countless mines and shafts that are abandoned. There are also hills surrounding the towns that are made up with the coal waste. In places such as Centralia, environmental disasters are still happening in the coal tunnels underground, which have forced thousands of people to leave. These things exist, but it also seems that they do not

belong to our time since they are of no use to us. It is in this way that I started to connect the coal mining area to the purple mire at my hometown. They are things that were once directly related to the industry, but now laid aside because people have no idea what to do with them. At the same time, they are also breathtakingly beautiful. The mysterious darkness of the underground, the burning land of former coal towns, and the shining texture of coal, all of these create this mesmerizing path that leads us to the history. They hold strong aesthetic meaning just like the purple mire. My project *Fossil Morphology* began with the endeavor to understand their existence, as well as our relationship to them in contemporary context.

## Depicting Energy

My journey began with the trip to East Pennsylvania Coal Country. In the winter of 2019, I traveled from Trevorton to Mahanoy City, through towns such as Pottsville, Minersville, Ashland, Shamokin, Mahanoy City, and Shenandoah. The major collieries – such as the Glen Burn Colliery in Shamokin or Shenandoah City Colliery in Shenandoah – largely closed down in the 1970s. What remains are a few strip mining sites, several small carbon processing businesses and the ATV Riding industry. I was told by people who work in the Shamokin town hall that the town had been seeking for years for other business to support its economy.

As I learned about the change in the economic structure, I began to better understand how this directly shapes and influences people's lives. In East Pennsylvanian coal counties, mining is considered a family profession that is passed down generations. Most children in mining families are trained in mines from a very young age, in order to be prepared for the job as they grow up – the so-called “breaker boy” is one such occupation (“The Work of a Breaker Boy”). However, as mining companies have largely shut down and transitioned from manual labor to machines, the opportunities for such occupations in these small towns has dwindled. Amid this changing landscape, young people are forced to leave the stable industrial tradition that their families and communities had taken part in for nearly two centuries. There were failures to adapt oneself to the new society, new knowledge, and new circumstances. The population in these towns has dropped dramatically as more people moved out to look for jobs elsewhere, similar to what is happening in my hometown. Through my trips, I got to know people of all kinds of professions, such as students, those who work in local restaurants,

newspapers, real estate companies as well as those who own the local carbon plant. Rarely did I encounter anyone who still works in the actual coal mine.

I began to think about what coal is and what it means to the people who now live in the coal towns. Coal is, in the first place, the source of modern energy. It is the ancient fossil, the fuel born out of countless dead botanical bodies, the modern industrial material that generates energy. In the factories, coal generates heat when being burnt. It then powers steam and steam creates electricity. Electricity goes into people's houses and "coal keeps the lights on" – a slogan you will see near the highway of I-80 when driving from NYC to the coal areas. This energy production process is something that ties the local people to the specific fossil geology in the area.

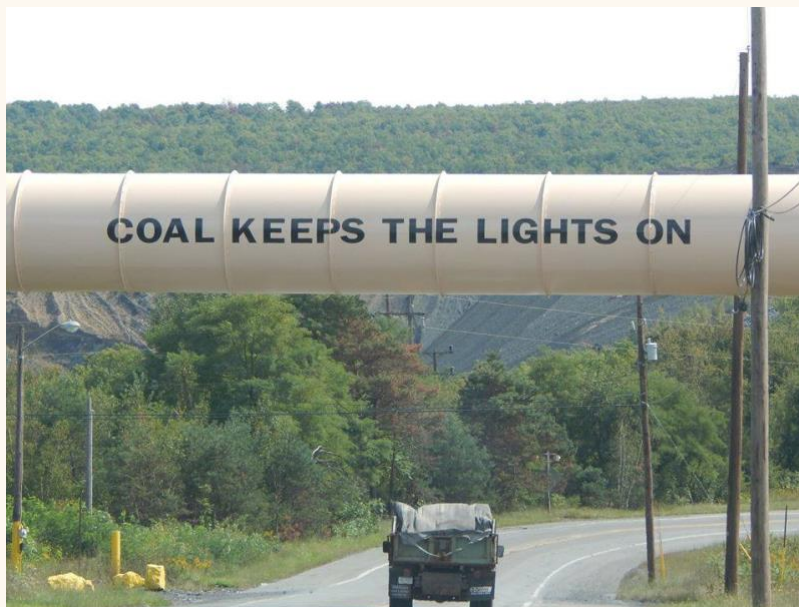


Fig 3. Skook News, "coal keeps the lights on", 2017.

My thesis work, *Fossil Morphology*, is a series of black and white photographs made using large format cameras. The work depicts contemporary environments in the Pennsylvania coal towns. By representing the energy that lies in animals, plants, factories and human bodies,

I try to create an imagined visual landscape of energy dynamic. In my photographs, energy exists in scenes where the plants are taking over the abandoned buildings and yards people left behind. Grass and plants have been growing out of the holes and cracks of buildings, bridges, and rail tracks for decades. Indeed, such wildness is what people have to live with, and it gives the company towns a different appearance. Energy is also evident in the photographs taken in the carbon plants and strip mines. These are the centers of mass energy production made possible by the endless, slow, repeated and yet heavy labor of machines and humans. It exists in the complicated mechanic system that processes the raw materials, as well as the gas ejected.

Energy also exists in the bodies of depicted humans and animals. My photographs try to capture a state of mind of the people I observed. I paid a lot of attention to how their facial expressions, actions and movements are shaped by the slowness of the everyday life in the small town. In some photographs, the living body is vigorously attacking or moving, but it is hard to grasp their liveliness. In some other ones, they look soft and weary. Just like how Teresa Brennan writes: "There is a gap between lived experience and the modes of rational thought most economic theories assume. This is a world where inertia, exhaustion and the sense of running hard to stay in the same place mark everyday life" (Brennan 12). The living bodies' fatigue not only comes from the environment, but also capture a state that makes them resemble plants and lands. It is in this sense that energy travels from environment to body, threading up animals, plants, industries, and humans. Dusty and opaque, the photographs create through their form a resonance with the texture of coal. Black and white is used here as a visual metaphor to erase the boundaries between the different content of the photos and

turn the figures into forms. It also reduces the vitality of the scenes. The 6th century BC philosopher Pythagoras believed that soul is eternal. It is infinitely respawned in the cycle of four discrete forms: from human to animal to plant to mineral states and back. In the modern context, coal production creates another way for us to participate in this “cycle” – by burning coal, humans are taking part in the ecological landscape. However, in the ancient context, this cycle is about how dead biological bodies return to nature.

I want to divert a bit and talk a little about Lieko Shiga, a Japanese photographer. After making photographs of the disaster in North East Japan for years and had witnessed numerous deaths, Shiga started to think about the cycle of death and rebirth (Maddox). In her latest work *Human Spring*, human, land and society are represented in a state that is decaying, inflamed, but also uncannily energetic. For Shiga, these scenes describe spring. It is a period when everything revives, but it is also a time when microbes accumulate and dead animals rot (Maddox). In her photos, there is usually no sign showing what the figure is doing. What is emphasized are the gestures or facial expressions. Stuporous bodies lie or dance, as if they were performing some ancient rituals. They return to nature and primitive states in a manic way through the over-saturated color and wobbling compositions in Shiga’s image world. In her photo “彼には見える”, which in English means “he can see it,” a naked figure is looking up in the foreground, while another human figure is standing under a giant tree in the background. We have no idea what they are doing, what he is watching or why he watches. The images are not informational. It is about phenomenological experiences and senses of a certain madness. It is about going into the psyche of these people.





Fig 4. Lieko Shiga, Human Spring, 目を合わせたらいけないよ、目があったらこっちにくるからね。 IMA, 2019.

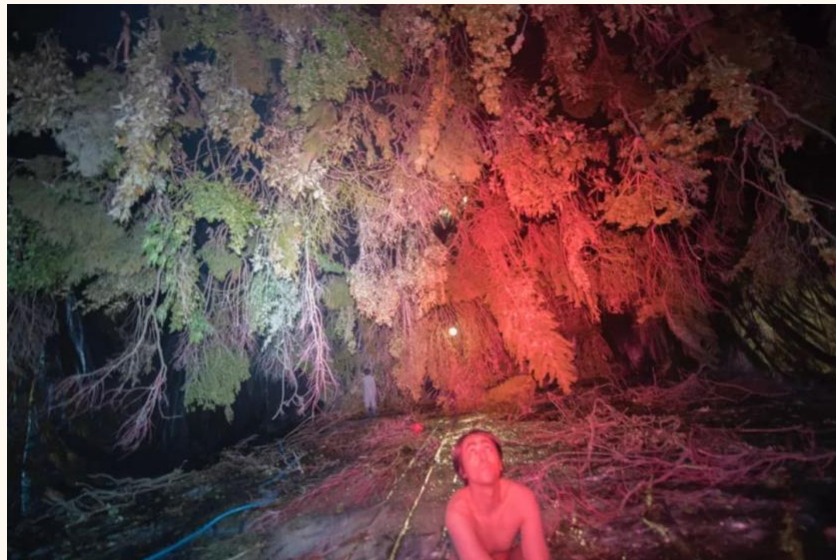


Fig 5. Lieko Shiga, Human Spring, 彼には見える。 IMA, 2019.

As someone who has been practicing ballet since youth, Shiga is very sensitive to human body and its biological instincts. She utilizes her bodily instinct in realizing imageries in her head (“Interview Lieko Shiga”). In her practice, photography constructs a ritualistic realm among the photographer, the camera and the subject. Energy flows in between them, and is eventually frozen by the camera. The mechanical reproduction device and the subject, the environment and the body, as well as life and death, all of these enter the parallel loop of



“energy trail” in the photographs (ROSEGALLERY). Thus, photography is considered as an action or a performance. It is to present, not to offer an explanation. It is in this sense that Shiga’s work influenced my own practice.

When making the photographs, I kept thinking about how, upon the initial invention of photography, people believed that camera will take away part of their soul and extracts their energy. In fact, during its early history when the light sensitive material and mechanics were less precise and when people were not familiar with camera, there indeed was a ghostly touch to the images captured. In the photographs, the subject’s eyes look blank and their faces faded. This early way of conceiving photography as a container of energy and a spirit medium opens up another way of understanding the ontology of photography – one that does not take it as just a direct, flat surface, but something that is an extension of minds and bodies; something that holds spiritual weight.



Fig 6. Unidentified photographer, Girl in a checkered dress, ca. George Eastman Museum, gift of Mark H. Newman, 1944.

On the one hand, this spiritual weight does not rely on the strength of our eyes. If we think about photographer Jeff Wall, we will find him to be very different from Lieko Shiga or the yellowing Daguerreotypes. While the former represents a pursuit that belongs to the long tradition of art history and especially the history of painting – to make an image eternal or stay outside of time. It requires us to stay longer in front of the photograph, look at it extremely close, and to read as precisely as we can. It points toward a transcendent world – a world of God. The latter, however, suggests an entirely different path, one that aims to “disable” our eyes, and thus allows our senses to be wide open. This pursuit does not want to transcend time, rather, it wants the image to live inside our bodies but within an alternative temporality. An example is Chantal Akerman’s film *Jeanne Dielman*. In this film, we are forced to stay with the extremely long sequences of the female protagonist who is doing housework. The time she spends on cooking, washing dishes, bathing and brushing the bath tank almost equal the real time we experience in daily life. But what is the point of watching her repeating the labor again and again? What we see is no longer important. We are in fact taking part in her life in space – we feel that there is a person doing housework in our room. The film opens a space and a temporality in itself. Therefore, it extends the image in our mind and bodies.



Fig 7. Jeff Wall, A Sudden Gust of Wind (after Hokusai), White Cube, 1993.



Fig 8. Chantal Akerman, Jeanne Dielman, 1975.

It is in this sense I tie bodily energy to the language of photography. In my photographs, the people look soulless in the eyes, while the animals are like specimens. The extreme static status and the seemingly everyday scene make the photographs slices of time, as if they were extracted from a movie. However, it is time that stretches the photographs. As I took more photographs, the life in them seems to poise and pause at a shared moment. Together with the industrial landscapes, they seem to have created a cinematic scene, where the environment is pregnant with an imminent explosion but everything seems peaceful on the surface – only the dark flows of energy is throbbing in Nature.



Fig 7. Untitled (horses), from the series *Fossil Morphology*, 2021.



Fig 8. Kloe and Bruce, from the series *Fossil Morphology*, 2021.

**Body and Environment**

In her series of photographs, *The Notion of Family*, Latoya Ruby Frazier documents the post-industrial reality of her hometown Braddock, Pennsylvania as well as her family history which is entwined with the steel mill industry. She juxtaposes decayed buildings, railroad tracks, and factories with intimate portraits of people who are close to her. In *Epilepsy Test*, from *Landscape of the Body series* (2011), we see a portrait of a person sitting in a hospital-like environment, with their back towards the camera as they are being inserted with electronic cables along their neck. Frazier pairs this image with a landscape of collapsed buildings, where electric wires are scattered around in tangles. The formal comparison demonstrates how the everyday life of this African American body is shadowed by the chaotic heaviness of their physical and psychological circumstances. The palpable weight of the landscape falls heavily on to the people. The bodies look stiff, slow, and dysfunctional – a sign of lack of energy. Through these juxtapositions, people and their environment are linked together, pointing to their intrinsic relationship. Energy in the factories and energy of human bodies are effectively revealed – after a long time of carrying the weight of the heavy industrial production and its fall, the energy of the human body is also declining.



Fig 9. Latoya Ruby Frazier, *The Notion of Family*, Epilepsy Test, from *Landscape of the Body* series, 2001-2014.

A more evident example appears when we see Frazier and her mother giving an ion cleanse bath for their feet in a video (Art21). As we see the water becoming dirtier in the washing basin, we know that their bodies become a dusty field just like the exhaust gas coming from the mills around. Cleaning the body becomes an absurd way of relieving the problem, because people are not just influenced by their environment – they are becoming their environment. The impact of environment can hardly be omitted. Vivian Sobchack, by referring to Maurice Merleau-Ponty, has noted that “meaning and value emerg[e] in the synthesis of the experience’s subjective and objective aspects” (2). The body and the world, the subject and object, are never independent.





Fig 10. Art21, "LaToya Ruby Frazier Makes Moving Pictures", 2012.

However, coal does not just connect human beings with nature. It also "alienates" them from the natural environment. This process has begun since the Industrial Revolution. Before then, it could be argued that our relationship to nature was more direct. Human craft, although lacking efficiency, allowed us to touch and feel the raw materials picked up from nature. During the Industrial Revolution, people started to take coal as a natural resources to be exploited, because it produces energy when it is fueled massively. Human beings entered a new stage of treating the earth. More powerful tools were put into use, remolding the environment. A 19<sup>th</sup> century engineer in Britain, James Nasmyth, precisely described this process as follows: "The earth seems to have been turned inside out. Its entrails are strewn about [...] The coal which has been drawn from below ground is blazing on the surface [...] By day and by night the country is glowing with fire" (Peters 123). However, John Durham Peters also points out in his book *The Marvelous Clouds* that the Modernity's rule is to keep the processing of fuel "increasingly out of sight" (Peters 123). Human beings built up a large, heavy production system that stands in-between us and nature. They are factories, mechanics, as part of the complex

infrastructure system that is “often as hard to see as a light rain through the window” (Peters 35). These things mediate humans from nature. Thus, humans have less and less understanding of how they work, resulting in the decreasing knowledge of human’s connection to nature.

This situation is exacerbated as globalization expands, a process described by Jussi Parikka as “a form of transported planetarization that has been based on logistics of energy” (Parikka 18). For example, when an American office worker is sitting in their ergonomic deskchair in a luxury office building in Manhattan browsing webpages, workers in South America may be pouring sweat in the underground mines to make power for their internet connection. In *The Coal Fired Computers*, an installation by the artist group YoHa build a mechanical system that illustrates how coal fired energy is transformed from coal to the black lungs of miners (a metonymy of the hard labor underground), into the power that maintains the computers in the UK. As the artists duo claims:

81% of the energy used in a computer's life cycle is expended in the manufacturing process, now taking place in countries with high levels of coal consumption. The UK currently produces less than one third of the coal it uses, importing the majority of it and therefore displacing 150,000 tons of coal dust into unknown lungs (“Coal Fired Computers”)



Fig 8. YoHa, Coal Fired Computers, AV Festival, Newcastle, UK, 2010.



Coal, through this increasingly invisible process, is transformed from a concrete material into an abstract image of a dark rock. What is coal? How does it work? The younger generations in the coal towns most often gave me a confused look when I asked them this question. Some of them said that it was because they didn't really know why I still asked this question. They probably had forgotten that the people here were once, not just seemingly, so close to coal.

Bruno Latour boldly claims "we have never been modern" in the title of one of his books:

Modernizing finally made it possible to distinguish between the laws of external nature and the conventions of society. [...] Modernizers know perfectly well that even in their own midst islands of barbarianism remain, in which technological and social arbitrariness are excessively intertwined. But long they will have achieved modernization, they will have liquidated those islands, and we shall all inhabit the same planet; we shall all be equally modern, all equally capable of profiting from what, alone, forever escapes the tyranny of social interest: economic rationality, scientific truth, technological efficiency (Latour 130-131).

This attempt to separate human beings from nature through modernization, has shaped our value system to push nature away and build an ideal world of our own. However, this intention entails the idea of Anthropocene, which has revealed the consequences of human activities across the ecological board. Just as Parikka comments in *A Geology of Media*, "The earth is not an object containing its ground within itself, [...] but rather a series or process of grounding with

respect to its consequents” (Parikka 22). Human technologies and industrialization do not just shape their society, as depicted in Latoya Ruby Frazier’s photographs, it also shapes our geology. We are always part of this dynamic relationship with the world.

Nature, no matter in what forms, is always haunting and intruding into “the human world.” In the lifeless environment of the coal towns, nature effortlessly takes over, and even new life forms appear (Arnold). Has nature really ever been absent? The answer is negative. It was there in the gardens of the company houses. It was there in areas slightly outside of towns. It was there in the coal mountains. It was there as coal. It has always been there but we have made it invisible by planning it as part of our social and technological evolvment. Truly, the dualism of nature/culture has never been possible, while our bodies have always been haunted and affected by the natural world.

My short narrative film, *Notes on Carbonization*, embodies the non-anthropocentric perspective of looking at natural resources – a perspective that has always existed alongside capitalism. The film tells two parallel stories about reincarnation. One story centers on the metamorphosis of a coal miner, who looks for coal in an underground shaft, and eventually becomes the coal. This narrative is conveyed through the visual language of the film, which was filmed in Centralia and Shamokin. The other narrative, conveyed through the film’s audio (i.e., my own voiceover in Mandarin Chinese), tells the story of the rebirth of a monk who practices in a mysterious cave and eventually turns into a Sarira – a sacred relic which is believed to be the outcome of hard Buddhist practice – after his death. It is based on a Buddhist story I heard in my hometown when I was a child. Half of the film is about the underground journey of the protagonist, which is filmed in several actual coal mines that are no longer in use. Through the

linear structure of cinema, it takes us to the monk/miner's trip – from one side of a cave to the other.

The film, in essence, is about conflict and conciliation. The conflict is twofold. On the one hand, it happens between the sound – the Buddhist story and the Chinese language – and the vision made in America. In the history of film, audio and vision are usually presented as a whole, but my film creates a gap between the two. On the other hand, it also takes place between the coal miner/monk and the coal/Sarira in the narrative. It is about the tragic separation between the subject and its psychoanalytic object of desire – in the story, neither of the two characters manages to reach his “*objet petit a*”, which for Lacan represents the unattainable desire (Lacan 79). The conflict and conciliation is also happening between me, a Chinese woman, and the American landscape as well as its people. The film is a transplant of my childhood story into the American coal country. I spent almost two months with the actors and places, and built both physical and mental connections with them, where friendship and conflicts co-exist. This film is by all means a result of the collective labor of me and the local people – no matter in or out of the film.

When showing the film, I found that many audiences are not fully able to comprehend this film. This, however, may open a new possibility for participation on the part of the viewer. The audience is therefore asked to reconcile the different elements in the film in order to understand or misunderstand it. In this way, I see this project in dialogue with Laura Mulvey who in *Death 24x a Second* proposes a cinema that evokes the audience's pensiveness (Mulvey 181). *Notes on Carbonization* considers the viewing activity as a creative act: the reading of the work largely relies on the audience themselves.

To return to the discussion of Anthropocene, the film invites conflict and conciliation of our relationship with the natural resources. The magical realistic narrative presents how the human character, after his death, transforms into a few pieces of coal directly. Unlike our usual knowledge of how coal is formed – from the decayed plant matter – this transformation is sudden and without mediation. The audience is told in the voice-over that the “Sarira” comes from the “monk’s” body. In fact, this story can also be read in both directions. It can be said that coal/Sarira is the object for the human subject, that it belongs to the miner/monk; but we can also see the human figure as the object of coal/Sarira. When the human body disappears, what remains is the coal/Sarira in his flesh – something that describes the essence of this body. This leads us to a moment when the visual converges with the Buddhist story in the voice-over. The ending refers to the Buddhist animist perspective that human beings and nature — their “Other” — are inseparable; their relations are cyclic and open.

At the same time, there is also an unsolved mystery hidden in the ending of this film. After the miner dies, people build a lab to study this strange material that makes up his body, but nothing is achieved. The futile endeavor leads to nothing useful. Coal is thus gradually forgotten by the people – an implication of what is actually happening in the area, where coal has become this awkward existence when people do not consider it as useful to them. But it is not just coal that is being left behind; all the things built around coal mining, including the coal towns themselves, are also being forgotten and let alone. What do we do with them? How should we look at them? Is there any possibility that we can build a new relation with them?

**Feverish Land, Breathing Earth**

In her sound project *Acoustic Ocean (2018)*, artist Ursula Biemann uses various acoustic devices to collect sounds from the deep ocean, where the sonic wave is the major form of communication for the living beings (Biemann). In the video documentation, singer and environmental activist Sofia Jannok, who is also part of the Sami Northern Scandinavian indigenous community living near the ocean, throws the sonic recording devices into the water, while singing a song of the Sami community. The devices, with long cables tied in the back, resemble tentacles of the creatures underneath the sea. What she gathered through these recorders are low frequency sounds of the deep-sea beings' language. Together, the Sami song and the sounds from the deep sea form this ensemble in which a harmonious symphony of life happens.

One hundred years ago human beings believed that the ocean was a place of silence. In the mid-1940s, scientists set up arrays of hydrophones that were placed on the North Atlantic seabed to locate enemy submarines operating in the deep channel. However, what they finally got were the vocalizations of the fin whales. This beautiful "mistake" opened a new understanding of the ocean "as an acoustic and semiotic ecosphere" (Biemann), where we became the listener of an alien voice, and in a way, mimicking its appearance when we are listening. It is through this act of listening that oceanic beings gain their subjectivity and become what we need to understand rather than neglect.



Figure 11. Ursula Biemann, *Acoustic Ocean*, Taipei Biennale, 2018.

Under the influence of this work, I started to focus my research on Centralia, the former coal town mentioned in the first chapter. By the 1960s, people had left because of its serious underground mine fire in the complex and involuted tunnels of former coal mines. It is said that this fire first started due to a fire at a giant landfill near the entrance of a coal tunnel (Blakemore). The fire spread into the tunnels, which are all interconnected underground. These tunnels constitute a parallel underground world which is of the same size as the town (see figure 12). These mine fires constantly generate warm steams that leak through the ground cracks, holes and mine entrances – anything that connects the underground and the aboveground – and arrives up above the Earth. The local people considered this a threat, so they started to move out of the town ever since. Decades later, the fire is still happening, and the warm steams are still emerging from the tunnels of Centralia.

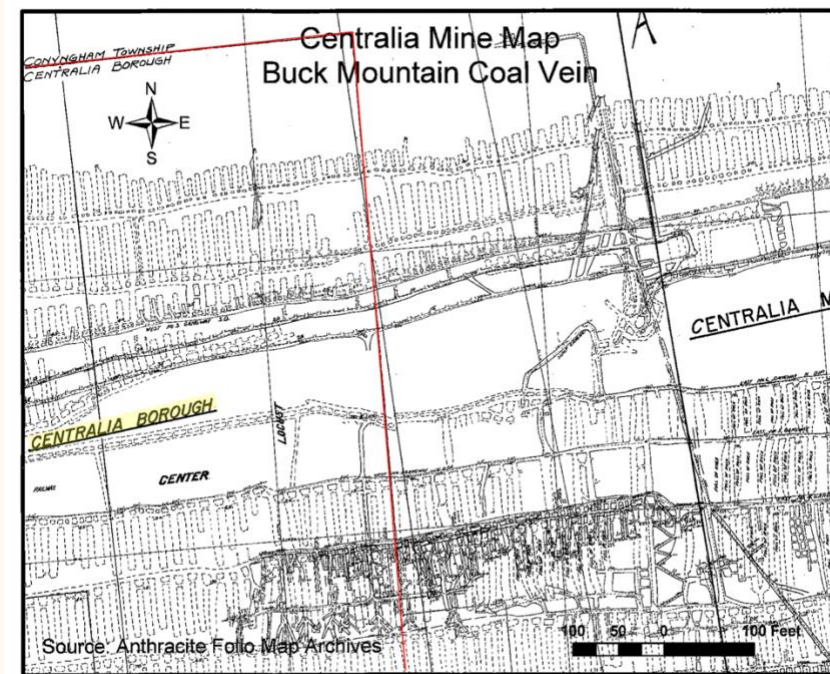


Figure 12. Pennsylvania Department of Environmental Protection, Centralia's underground tunnel.

This mysterious phenomenon fascinates me. I see these empty underground tunnels as a giant pipe-like musical instrument, where air travels through it and makes sounds. As I was photographing in Centralia, I kept imagining what sound the underground tunnels makes as air moves through it -- like the sound of breath activating a musical wind instrument. I decided to build my own device on a breadboard: one that collects sounds from the holes, cracks and underground shafts, and then uses its sensor to modulate the pitch of the sounds according to the thermal readings picked up from the sounds' own locations (see figure 13). This system turns the underground structure of Centralia into a musical instrument, where the pitch of the song it performs is decided by the temperature – a marker of Centralia's energy. Through this process, what I got was a sharp song through its warm inhales and exhales. I was also a little surprised to find that this sound resembles the sound from the universe that NASA captured by

turning the vibrations of stars and planets they collected in space into audible sounds (NASA).

These sounds from the Earth vibrate with the universe.

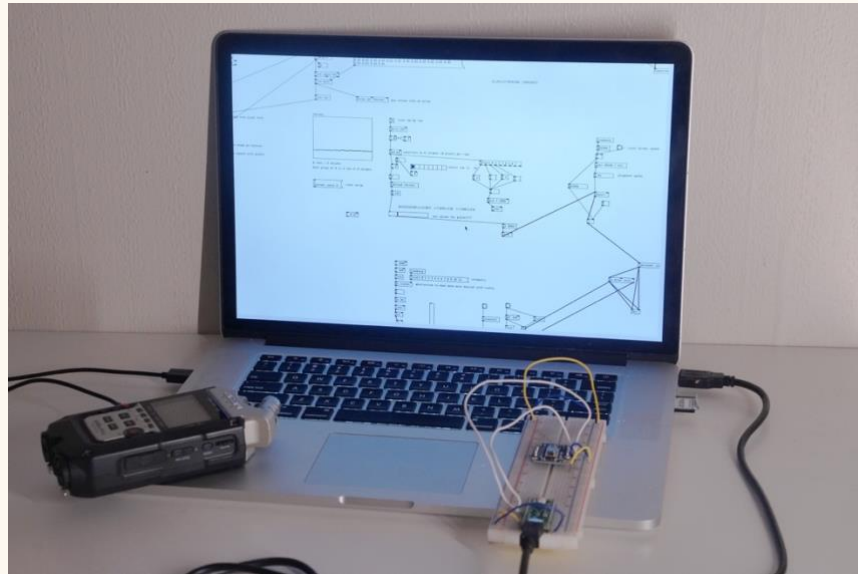


Figure 13. Sound Collection and Modulation System, Pure Data, computer, audio recorder, Teensy LC, thermal sensor, 2020

My way of rearticulating this underground structure through sounds is a form of translation. Sound collecting is a means to discover the sounds that are once hidden from us, just like the scientists discover the sonic waves of the ocean creatures. However, the sound I got is not entirely something that can be directly heard in Centralia, but a synthetic and reorganized one that describes the characteristic of Centralia's land with the help of its thermal data. In other words, the raw sounds are translated to a man-made digital language, but is also not easily comprehensible because it is not an actual "song" to us. The procedure of modulating the quality of a sound through the temperature of the land, is in fact a synesthetic process, a neurological phenomenon where one sensory activates another secondary sensory. The mutual work of both the technical and the natural makes this piece itself an inter-medium that stands in between us and the Earth. This in-betweenness is important. We do not perceive it from the



utilitarian perspective of humans. Similarly, we equally do not have to try so hard to adapt ourselves to the indifferent, post-humanist perspective. Neither of the two would really help us to understand the land of Centralia. The sounds build a bridge between human technology and nature. The bridge seeks to connect human with Centralia, a place that possesses its own subjectivity. The sounds attempt to activate our role as a listener and to draw ourselves closer to the place.

Hearing is one of the earliest senses developed in humans. An infant begins hearing in the womb at four months' old. Those initial sounds are breathing, heart beats, and the voices of its mother. It is not easy, however, for humans who live above-ground, to notice the sound of the Mother Earth from her womb. In this sense, *Breathing*, the sound piece about Centralia's burning Earth, allows the audience to "hear" the warmth of the land – the Mother Earth's fever as a consequence of this human disaster.

In *Geology of Media*, Jussi Parikka cites an uncanny 1928 story by Arthur Conan Doyle called "When the World Screamed." In the story, a professor, Challenger, is engaged in a secret drilling operation down to the mantle of Earth. He built shafts and drilled deeper and deeper through the Earth's crust until he found a hot core layer where the Earth pulsates like an animal. The scene that unfolds resembles a rape, where Professor Challenger decides to penetrate this vibrative layer with his driller. He then hears the earth scream as it is being penetrated.

No matter if the Earth really feels the pain, this story reveals the fact that scientists used to see the Earth as a mere object. In fact, the Industrial Revolution showed how enthusiastic human beings were about this activity of penetrating: from digging to building tunnels to space

exploration. It started with the desire to explore deeper into the Earth, to control the land and to dominate knowledge production.

In her essay *The Carrier Bag Theory of Fiction*, the science-fiction writer Ursula K. LeGuin notes that technology, especially modern technology, has been piercing the world with its powerful, “big, long, hard thing.” (Le Guin) This value system entails the idea of hurting, and it is actually something inherited from the ancient time when human started to attack other beings with tools. It somehow shaped their understanding of the world and their own images.

However, Le Guin finds it to be problematic. As she writes:

The society, the civilization they were talking about, these theoreticians, was evidently theirs; they owned it, they liked it; they were human, fully human, bashing, sticking, thrusting, killing. Wanting to be human too, I sought for evidence that I was; but if that’s what it took, to make a weapon and kill with it, then evidently I was either extremely defective as a human being, or not human at all (Le Guin).

LeGuin then introduces another way of looking at our world and the beginning of human civilization – to see it from the perspective of a container. This can be seen as a counter-perspective to what professor Challenger is passionate about. A container is a bag, a bottle or a holder to hold something else. But after all, not an attacker. A container is a recipient. What is more important to us as humans here is to view the whole eco-system as the fundamental, as something that guides our acts – then we will know that the world is something we need to behold instead of impaling. One may also argue that the former perspective is a masculine one,

while the latter is a feminist. However, I believe that the more important thing is that they reveal two different forms of aesthetics and value systems – one to separate themselves from the environment and thus define them as humans; the other, to see them as the environment itself.

The mine shafts and tunnels are also products of human impalement. These artificial veins are scattered under the skin of the land. Some go down into the Earth for thousands of feet. The underground, in myth and history, is both a realm of infrastructure and hidden labor, as well as where the romantic imagination of hell happens. In some ways, Professor Challenger's drilling activity can be seen as an extreme metaphor of these shafts and tunnels. Maybe the fire happening in Centralia is the scream of the Earth, and maybe, its revenge on human beings, or rather, a warning from hell. Yet most importantly, this disaster swept humans away, and stopped the local people from engaging with underground mining ever since. It is only until this penetrative activity ceased that the mine shafts and the tunnels became empty and hollow. They are now turned into bags or rather, actual carriers of the air. It is this new identity as a holder of the underground structure that makes possible my sound piece.

## Conclusion

My thesis begins with the discussion of coal. This discussion spans across its materiality, mode of production, economic result, energy, its resulting disaster, and most importantly, how my work engages in forming a constructive dialog between us and coal. For our world today, coal is still believed to be consumable. The coal towns however are yet a different existence: it has a colonialist exploitative history when it is considered to have economic value, and ignored when it is not. There are still other ignored things like this, even though they have influenced our entire ecology, and their forms have changed (e.g., Centralia as an example turns from a coal town to a burning hell).

But I am not only interested in how art changes our perspective about disaster. I am also interested in how the work can live with disaster through the embodied experience of the audience. In the thesis show, I try to rebuild the sense of being in an underground tunnel. I want to turn the exhibition space into a mysterious, introverted and sensorial place. It is dark and cold. There, the imagination within the film, the imagery of photography, as well as the sound coming from the underground co-exist. Through the dim light, audience disorientedly explores the images on the wall and the objects in the space. They lose track of where they are. Or, just like what the film's linear structure has shown, everything that leads to the moment of revelation can only be arrived at when they leave the darkness. That is the moment when the eyes must begin to readjust to the sunlight – in the same way it happens to the miner in my film – or a moment when we revive from a dream.



Figure 14. Untitled (installation shot), from the film *Notes on Carbonization*, 2020



Figure 15. Untitled (installation shot), from the series *Fossil Morpholog*, 2020

In his video performance *Fever Room*, Thai artist and filmmaker Apichatpong Weerasethakul also refers to this experience of being in a cave. In a dark room, audiences are facing video projections of everyday scenes of characters who appear in another film, *Cemetery of Splendor*, directed by him, while surrounded by mysterious fog created by the dry ice in the

room. Through this work, Apichatpong reconstructs Plato's allegory of the cave (Grissemann). Audiences, just like the prisoners, face the projection not the source of light. However, they are embedded and immersed within the dreamscape created by the light, the fog and the claustrophobic experience in the room. If for Plato the cave is a place where simulacra are projected and the real beclouded, Apichatpong here is celebrating the dream-like experience in the cave, where the prisoners not only look at the projected images on wall but also hear the sound of puppet knocking and people whispering, feel the humidity of the cave and sees the flickering of the light. In the cave the real and unreal intertwine.



Figure 13. Apichatpong Weerasethakul, *Fever Room*, performance view, National Taichung Theater, 2017

In the end of *When the World Screamed*, the horrible yell of the Earth is described as “a howl in which pain, anger, menace, and the outraged majesty of Nature all blended into one hideous shriek”(Doyle). Each character in the narrative hits the ground when they hear the sound--it is so intense that it deafens some people. Shortly thereafter, a geyser spouts from the shaft, emitting a dark treacly substance that has an extremely nauseating smell. It shoots up to

the sky and destroys an airplane. The entire city is emersed in this smell for a week before the shaft is closed. While Professor Challenger is seen as the successful conqueror of this mighty challenge, the reality is marked by unavoidable failure of human industry. How we can jump out of this logic of a conqueror, is yet another question to consider.

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