

Unsettling
Matters,
Gaining
Ground

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Unsettling Matter, Gaining Ground

Theodossis Issaias and Ala Tannir

From the courtyard of the University of Pittsburgh Medical Center's (UPMC) headquarters, protesters holding colorful signs—that, among others, declare “life is not 4 profit”—strike the facades of the building with mallets and passion. “Group bashes mock UPMC building,” reads the headline of a scanned article from the Pittsburgh Tribune Review in *We are Alive! The Fight to Save Braddock Hospital*, the documentary film co-directed by Tony Buba and Tom Dubensky.¹ In November of 2010, after UPMC's decision a few months prior to close its Braddock Hospital, members of the Braddock community and other advocates of the hospital printed photographs of the facades of the UPMC office building onto large boards and assembled them into a human scale architectural model, and headed to Downtown Pittsburgh where the building is located. One by one, they ceremonially took aim at the model of the late modernist structure until it caved to the ground in pieces that they could stomp and walk on.² Architecture is never neutral. The act of tearing down the model of the building is more than the protesters' mere expression of anger towards the institution and their refusal of UPMC's policies. This performative delivery carries within it their pertinent recognition that the physical landscape is often a reflection of the spatial and economic inequities that capital inflicts upon the urban territory and the communities that inhabit it.

The UPMC office building, better known as the United States Steel Building or the US Steel Tower (USS), was completed in 1970. Hovering at 64 floors above Grant Street in Downtown Pittsburgh, the building was commissioned by USS corporation to house the company's headquarters. Founded in 1901 through a merger of several American steel companies—including the Carnegie Steel Company—financed by J.P. Morgan, USS once stood as the world's largest steel producer and its first billion-dollar company.³ The building was designed to be an emblem of this industrial might. Structurally, the tower is supported by 18 massive, exposed steel columns that outline its triangular footprint with indented corners and that are visible on the outside. These columns were made of Cor-Ten, a new product at the time developed by USS that resists the corrosive effects of meteorological conditions by forming a dark brown oxidized layer on the surface of the material and prevents further degradation and rusting.



Tony Buba and Tom Dubensky, still from *We Are Alive! The Fight to Save Braddock Hospital*, 2012

Yet, the industry's optimism was abruptly halted in 1973, only a short couple years after the completion of the building, when the first oil crisis took place. An oil embargo imposed on the United States by Arab members of the Organization of Petroleum Exporting Countries (OPEC) sparked a recession in global steel production and marked the beginnings of the decline of the steel industry in the US.⁴ Perhaps in an ominous coincidence, at that same moment, the initial weathering of the USS Tower's Cor-Ten columns led to the shedding of brown iron oxide particles into the rain, resulting in the discoloration of neighboring buildings and sidewalks—a premonitory materialization of what will in the late 1980s become known as the infamous “rust belt” trope, referencing defunct factories across the region. As USS's employee base shrunk significantly between the 1970s and the late 1980s, so too did the space it occupied in the tower.⁵ The steel company has been replaced by the health care provider as the biggest tenant of the building after the latter made it its headquarters in 2008, installing the UPMC acronym in giant bright letters at its top. This race towards branding and claiming Pittsburgh's tallest skyscraper to date is, however, not only a matter of commanding real estate. More importantly, it is an embodiment of the transition that took place from one economic regime that reigns over the city and the region to another. The deindustrialization process left an aging, impoverished, ailing, but often insured working-class population demanding more care, while the economic pressures it created pulled people into a burgeoning labor market in care work, marking the shift from the economic reliance on steel and the expansion of the healthcare industry.⁶

The tower, from its form and materiality to the history of its tenancy, both manifests and structures the region's complex and fraught relation with resource extraction, production, and distribution. As converters and open-hearth furnaces developed in the late 19th century, steel enabled the mass fabrication of reproducible steel components that transformed whole branches of industrial production from construction to rail transportation. Abundant in anthracite and bituminous coal, subterranean strata of Pennsylvania fueled this proverbial Second Industrial Revolution. Yet, if alchemical substitutions, industrial might, and contemporary economic transition are the narrative pillars of the region's epic, the supporters of the Braddock Hospital narrate a story of externalities. The processes

and forces that enabled the region's development have also led to the dispossession and environmental degradation of different communities, including those in Braddock. Since the turn of the last century, the residents of Braddock have stood at the intersection of multiple different fights, including the Great Steel Strike of 1919—demanding union recognition and shorter working hours—the fight for saving the hospital, and organizing against the expansion of fracking at former steel mill sites in their neighborhood. Tearing down the paper model of the US Steel Tower, then, was more than a symbolic gesture; in it was the implication of architecture in the devastation of communities and ecologies, and most of all, it was a demand for justice for frontline communities that have intentionally been pushed to the margins.

The impetus driving the exhibition *Unsettling Matter, Gaining Ground* is to begin to understand how fossil fuel economies have been produced and upheld; whom they have excluded and left vulnerable; and how they have shaped and disrupted cities; and human and nonhuman communities and ecologies. To do so, we momentarily suspend current environmental discourses that center consumption reduction, individual responsibility, and energy transition. Starting from Western Pennsylvania and extending to multiple geographies across the United States, we direct our attention to the very sites of extraction and particularly to frontline communities. It is where popularized narratives of transition from one natural resource to another and one dominant economic and energy regime to another break at the seams. At these sites, the resistive practices of citizens reveal the precariousness of such a technical management of the world as means of responding to a warming, scarcer, and more dangerous and unstable planet (see Gökçe Günel's essay “Transition in Reverse” on page 16).

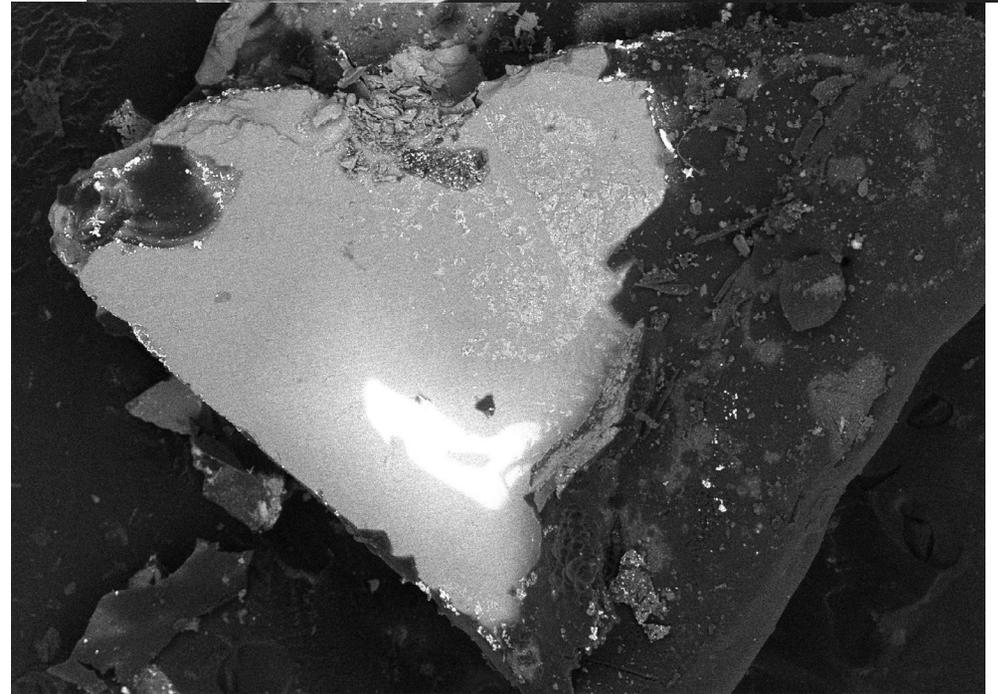
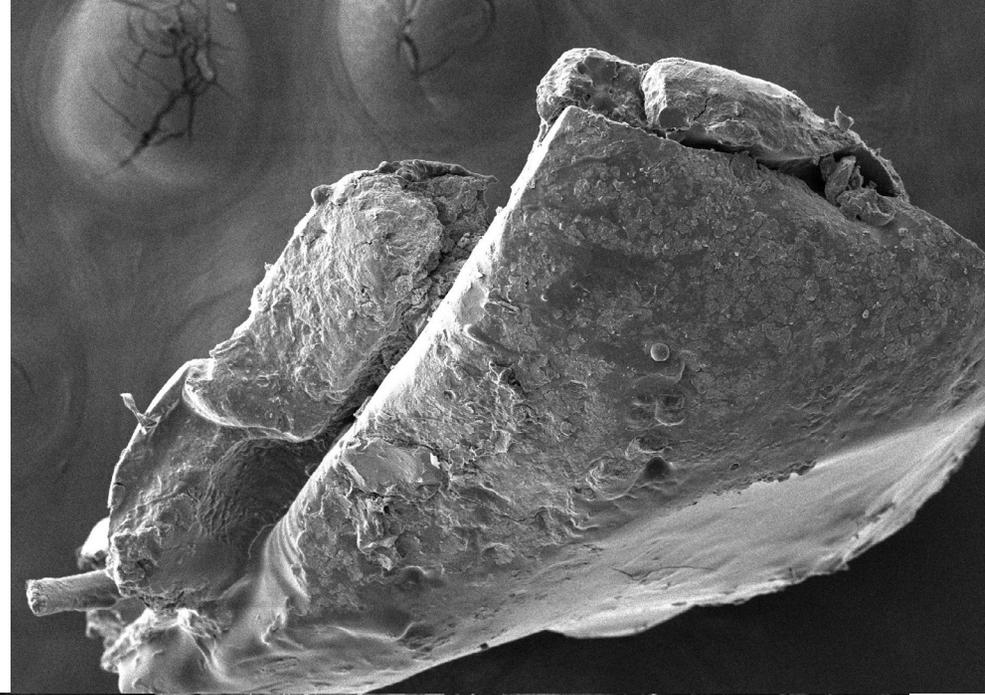
The territory holds within it material evidence of how systems of resource extraction, production, distribution, and capital accumulation translate into space. Thus, in *Unsettling Matter, Gaining Ground*, the primary mode of engagement from which to examine these issues is spatial. Seven projects by contemporary artists, architects, and collectives featured in the exhibition chart avenues for creatively contending with such extractive forces in the context of our contemporary planetary urgency. Much like protesters' UPMC building paper model, the projects collectively explore how spatial

modes of representation can themselves become political tools by which to access and connect struggles. They offer different language forms that tie contemporary events and landscapes to ideas and discourses while providing concrete touchpoints for speaking about current collective crises.

The exhibition is anchored in the history of Carnegie Museum of Art's collection. Traces of histories and processes of splitting subterranean matter, of networks of material and power production and distribution, and architectures of transforming the earth live in the institution's archive and memory. These include *The Continuous Miner* series of paintings and prints as well as architectural drawings of mining infrastructures developed by the Pittsburgh Coal Washer Co., and design drawings and prototypes for metalwork for the Mellon Institute of Industrial Research.

The Continuous Miner series brings into focus the nexus of extractive economies, philanthropic capital, and art institutions and practices. It situates how the region has been shaped both materially and culturally. In 1954, Joy Manufacturing Company of Pittsburgh in collaboration with *Fortune* magazine commissioned seven celebrated artists to create visual interpretations, portraits of its latest mining equipment—a miner machine for automated coal excavation.⁷ To be precise, this machine, demonstrated by the company a few years earlier in 1948, was an enormous electric-hydraulic digger that had the capacity to continuously extract and process more than two tons of coal per minute. Joy Manufacturing Company financed the endeavor while Leo Lionni (1910–1999), *Fortune*'s art director, selected the participating artists, which included Antonio Frasconi, Roberto Matta, Walter Tandy Murch, Ben Shahn, Saul Steinberg, Hedda Sterne, and Rufino Tamayo.⁸ The completed artworks were eventually published in *Fortune* magazine in June 1954 in the feature “Seven Painters and a Machine,” and soon after in August 1954, gifted by Joy Manufacturing Company to the Carnegie Institute. In tandem, the artworks began a frenetic tour around the country.

Without doubt, the series was a publicity campaign led by the magazine and its corporate partner. Against the backdrop of a declining coal consumption and production in favor of inexpensive oil in the aftermath of World War II, as well as an active labor movement and strikes, mining leviathans like the company betted the survival of the industry on automation. To complete this transformation of the



Scanning electron microscope (SEM) images of layers of silver and black synthetic color and glass fragments from Hedda Sterne, *The Continuous Miner*, 1954, Carnegie Museum of Art, Gift of Joy Manufacturing Company. Research by Mary Wilcop, senior manager of conservation at Carnegie Museum of Art, Ana Alba, paintings conservator, and Travis Olds, assistant curator of minerals and earth sciences at Carnegie Museum of Natural History.

industry, Joy Manufacturing had to persuade corporate leaders to embrace the potential of the hydraulic digger and, more importantly, placate miners and their reactions against automation. It was at this point that the company joined forces with *Fortune* and brought art into the fold by commissioning seven artists who have been contending with issues of labor, political representation, and the relation between humans and machines. Yet, if the company was expecting celebratory portraits that could mediate between the competing visions of the industry's future, the resulting *The Continuous Miner* series offered an ambivalent—if not menacing—depiction of this extractive machine. Roberto Matta's and Ben Shahn's machines erupt with flickering shapes and fragments ripping to the edge of the canvas, while Rufino Tamayo's and Antonio Frasconi's works—the only ones to include human figures—depict miners who appear dwarfed in the presence of the machine.⁹

Hedda Sterne's tondo, a monumental round canvas, is exemplary of the series' attitude towards this tireless digger. The painting's circular shape invokes an infinite subterranean tunnel, while the continuous miner, presented in an almost frontal view, is ready to move out of the canvas. It is the viewer not the miner who now confronts the "armor-plated monster out of antiquity."¹⁰ To emulate the phosphorescent, submetallic luster of the anthracite coal mine, Sterne coats the support with a synthetic silver spray paint, a byproduct of coal tar, and then incorporates into her dark black surfaces shards of broken glass.¹¹ The artist, in a series of substitutions, represents the coal mine by its byproduct and brings it inside the museum. Anthracite, coal tar, synthetic color, art, mechanization, labor displacement, corporate power, and war are the constituent elements of the estranging encounter that she orchestrates. Her gesture conjures an industrial sublime, absorbed by awe and fear of a mechanized and voracious world after World War II. Emotionally and cognitively, Sterne unsettles myths of technological advancement, industry, and capital.

In *Unsettling Matter, Gaining Ground*, we inhabit Sterne's mine, a place to destabilize narratives of progress. We understand the mine as the archetype and industrial blueprint of modernity's extractive relations, which, as Kathryn Yusoff writes, combine class and racial subjection with planetary ecological degradation. In the subterranean site of the mine, matter is split; it is divided and separated from its

geological context for the extraction of value and the creation of the commodity form. But, as Yusoff explains, this process is paradigmatic of the "psychic splitting of the world;" it realizes the material, social, and political segregations of inhuman, nonhuman, and human; it also produces the mechanisms of controlling and governing this split.¹² Building on this notion, we invited contemporary creative practices to expand the field of inquiry to the network of sites of extraction. In a mirror image to *The Continuous Miner* series, the seven architectural, design, and artistic practices in *Unsettling Matter, Gaining Ground* bring oil and gas pipelines, mines, offset forests, drilling sites, fracking pads, and core samples into the museum. Their intentions range from raising awareness and questioning prevailing narratives of energy transition to providing a space to mourn and diligently mapping destruction.

In both of their works, the collective Not An Alternative and filmmaker Tony Buba lean on participating in and documenting grassroot struggles, pushing against narratives that victimize the communities that are most affected by the reverberations of capitalist extractive practices. While Buba records and connects Braddock citizens' long history of organizing against different industries to contest accounts of energy and economic transition, Not An Alternative stages community-based rituals in regions of the Gulf South and Appalachia to bring fights—of the living and the dead—closer together and reinforce networks of solidarity across the country.

In the Lower Mississippi River Delta—known as "Cancer Alley"—artist Imani Jacqueline Brown maps and visualizes the continuum of extraction that entwines ancestral Black enslaved and underpaid labor with present-day communities confronting petrochemical fertilizers and pipelines carrying natural gas liquids, to trace blueprints for accountability and reparations. If Brown's cartography depicts a front where trees that produce oxygen battle with toxic air emitted by petrochemical plants, in their project, the artist duo Cooking Sections contests the financialization of the environment, in which carbon offset schemes have deployed trees as instruments of mitigation and real estate speculation. By collecting stories of individual trees from Pittsburgh and Western Pennsylvania, Cooking Sections reveals the region's fraught relations with trees and asks what it will take to protect the rights of trees to just be trees.



Samuel Yellin, *Grille component (design prototype for the Mellon Institute of Industrial Research)*, ca. 1932–1935, Carnegie Museum of Art, Gift of Samuel Yellin Metalworkers

An akin query is brought forth by artist Eliza Evans who instrumentalizes legal means to subvert the expansion of the fracking industry. By taking advantage of loopholes within the property regime of mineral rights, Evans proposes the formation of *All the Way to Hell*, a participatory project of collective stewardship of lands vulnerable to fossil fuel development. Artist and landscape architect Walter Hood, inspired by *The Continuous Miner* series, revisits his earlier work proposal *The Hill District: Village in the Woods*, (2009–2010) which leveraged the unique ecological, cultural, and industrial landscape of the Hill District of Pittsburgh to combat historical disinvestment and disenfranchisement of the neighborhood. Hood’s project traces and reconfigures the 15-foot thick open coal “seam” around the Hill’s edge and contends with its legacy and possibility. Coal extraction and its externalities are also the driving force behind the project by Pep Avilés and Laia Celma, who map a coal seam fire that has been continuously burning beneath the now-decommissioned town of Centralia, Columbia County, since 1962. As the fire alters the temperature of the surrounding soil and activates microorganisms that might have been dormant for decades, centuries, or millennia, Avilés and Celma urge a rethinking of how humans and nonhumans may coexist.

Despite their multiplicity, a common thread weaves these projects together. They all keep an equal distance from solutionist approaches and speculative futurist propositions. Amid shared urgencies, these seven propositions utilize different strategies to offer mental, aesthetic, emotional, and cognitive tools for expanding the collective political imagination of living together on a changing planet.

1 Timothy Puko, “Group bashes mock UPMC building,” *Pittsburgh Tribune Review*, November 10, 2010.

2 As seen in footage from *We are Alive! The Fight to Save Braddock Hospital*, directed by Tony Buba and Tony Dubensky (2012, Braddock, PA, Braddock Films).

3 “The Founding of US Steel and the Power of Public Opinion,” in *The Case for US Steel 1930–1960*, Harvard Business School, Baker Library, Bloomberg Center, <https://www.library.hbs.edu/us-steel/exhibition/the-founding-of-us-steel-and-the-power-of-public-opinion>.

4 In the context of the 1973 Arab-Israeli War, OPEC members led by Saudi Arabia’s King Faisal imposed an oil embargo on the US in retaliation for its military support to Israel.

5 From originally residing in 34 of the 64 floors, the number went down to 16 by the end of the 1990s, and the company allegedly currently occupies only about 9 floors. See Mark Belko, “US Steel Tower stands tall 50 years after its dedication,” *The Associated Press*, 2021, <https://bit.ly/43wchA6>.

6 Gabriel Winant, *The Next Shift: The Fall of Industry and the Rise of Health Care in Rust Belt America* (Cambridge: Harvard University Press, 2021), 16–19.

7 We would like to thank Costas Karakatsanis, researcher of fine arts at Carnegie Museum of Art, for sharing with us his archival and provenance research on *The Continuous Miner*.

8 On the history of *Fortune* collaborations with corporate partners see Shaina Larrivee, “Art & Industry: Hedda Sterne’s Deere & Co. Paintings for Fortune Magazine,” in *Hedda Sterne: Imagination and the Machine* (Des Moines: Des Moines Art Center, 2020), 4–15; and Leo Lionni, “Art for Fortune,” in *World at Work: Twenty-Five Years of Art for FORTUNE, 1930–1955* (New York: The American Federation of Arts, 1955), 8–9.

9 When *The Continuous Miner* series was reprinted in the anniversary issue of *Fortune*, the artworks by Frascioni and Tamayo were excluded from the portfolio presentation. “A Portfolio: Five Painters and a Machine,” *Fortune Anniversary Issue: A Phenomenal Half-Century*, February 11, 1980.

10 Rosalind Constable, “Seven Painters and a Machine,” *Fortune* (June 1954): 127.

11 Analytical tests were performed on portions of Hedda Sterne’s paintings in February 2023 to confirm their material composition. These tests were led by Mary Wilcop, senior manager of conservation at Carnegie Museum of Art, Ana Alba, paintings conservator, and Travis Olds, assistant curator of minerals and earth sciences at Carnegie Museum of Natural History.

12 Kathryn Yusoff, “Mine as Paradigm,” e-flux architecture: Survivance, June 2021, <https://www.e-flux.com/architecture/survivance/381867/mine-as-paradigm/>; Kathryn Yusoff, *A Billion Black Anthropocenes or None* (Minneapolis: University of Minnesota Press, 2018).

Theodossis Issaias

Theodossis (Theo) Issaias is an architect and educator. He is associate curator at the Heinz Architectural Center at Carnegie Museum of Art and Special Faculty at the Carnegie Mellon University School of Architecture. His PhD dissertation, “Architectures of the Humanitarian Front” at Yale University, explored the nexus of humanitarian organizations and architecture and their relation to conflict, displacement, and the provision of shelter. Since 2009, he has been practicing as a founding member of Fatura Collaborative, an architecture and research collective.

Ala Tannir

Ala Tannir is an architect and curator from Beirut. She is the inaugural curatorial research fellow at the Heinz Architectural Center at Carnegie Museum of Art, and currently teaches at the Carnegie Mellon University School of Architecture. She was part of the curatorial team and Managing Editor of Publications for the 17th Venice Architecture Biennale (2021), and co-organized the XXII Triennale di Milano, *Broken Nature* (2019). Her upcoming project utilizes exhibition-making as a process to record and rehabilitate a 1930s coastal house in Beirut to transform it into a research and cultural platform.

Transition in Reverse

In challenging modernity's reliance on fossil fuels, many of us have found relief in the idea of an energy transition. Coined in the aftermath of the 1973 oil crisis, the term energy transition refers to the global energy sector's move away from fossil fuel-based systems of energy production and consumption, primarily oil, natural gas, and coal, to renewable energy sources. Yet, despite the optimism they might evoke regarding our collective futures, the commodities that facilitate energy transitions worldwide, ranging from solar panels to electric cars to wind turbines, often do not dismantle global political and economic hierarchies but rather rely on and reproduce existing inequalities.

In my book *Spaceship in the Desert*, I analyzed the construction of an eco-city in oil-rich Abu Dhabi, called Masdar City.¹ The idea of a spaceship in the desert was one of the metaphors that people at Masdar City used for describing the eco-city, and it became an overarching metaphor for the book, because it captured many aspects of Masdar City, and many aspects of climate change mitigation today. As the book shows, the spaceship signifies enclosure, archiving, selection, hierarchy, movement, and—most importantly—the maintenance of strict boundaries between interior and exterior spaces. It promotes a technocratic and exclusive universalism, a kind of ark that will help save a select few, and produces the outside as a vacuum that should not be inhabited. In spacefaring movies too, characters often plot out scenarios that prioritize enclosure for some over collective survival. In this imagination of the future, what happens to those who are left outside the spaceship? Broadly speaking, by thinking through the idea of a spaceship in the desert, I interrogate why, how, and if humans have abandoned the possibility of collective survival at a time of climate change and energy scarcity.

In *Spaceship in the Desert*, I underlined how Abu Dhabi is perceived to be a perfect location for harnessing solar energy. However, according to an engineer at Masdar—let's call him Mahmood—this perception was not completely accurate. Mahmood, an Egyptian man in his mid-thirties, had recently finished his PhD at an American university. Wishing to be closer to home, he accepted a position at Masdar as his first job. As we chatted outside Masdar's solar power stations, he stated that high levels of dust and humidity not only blocked direct solar rays but also resulted in thick coatings on solar panels, diminishing their effective functioning.

Gökçe
Günel

“Although we can’t fix the first problem that easily, we have found a solution for the second problem.” He continued, “We call it ‘man with a brush.’”

While there was extensive research toward a solution for removing dust, humidity, and mud from solar panels in the United Arab Emirates, during the time of our conversation in 2011, no technical solution had proved as effective as the use of labor. In Mahmood’s narrative, the “man with a brush,” a worker dedicated to gently wiping away dust and mud from the solar panels, became significant mainly because he exposed the potential that is embedded in the solar panels. In some ways, “man with a brush” would allow for the proper functioning of not only the solar panels, but also the clean technology project of Abu Dhabi. In this context, this worker, who was essential to the construction and maintenance of the spaceship, was framed as a disposable tool and abandoned outside the technologically complex vessel. Masdar City attempted to help humanity fight climate change and energy scarcity problems, but its understanding of humanity was particular and selective. It did not include the man with a brush. Renewable energy and clean technology demarcated boundaries between the haves and the have-nots upon whom the formers’ lives were predicated.

While the imagination of a transition to renewable energy sources has been tempting for many of us, as it could allow humans to extend their lifestyles into the future while eliminating carbon emissions from fossil fuels, evidence suggests that renewable energy infrastructure only minimally displaces fossil fuels.² In fact, the advent of new sources of energy does not lead to the abandonment of existing sources—the use of all sources of energy, including fossil fuels, has grown during the past two centuries. In certain contexts, adding new energy sources to the mix has even accelerated the consumption of existing fuels. For instance, the discovery of fossil fuels in the 19th century did not help whale populations. Given how fossil fuel-powered ships could catch more whales, this new energy source led to a massive increase in whaling, and generated novel uses for whale oil.³ In this context, new fuels,



“Man with a brush” cleans solar panels at Masdar City, ensuring their efficacy, Abu Dhabi, United Arab Emirates, April 2011; photo: Gökçe Günel

such as petroleum, contributed to the growth and development of former resources, such as whales, for new purposes. Humans did not seamlessly move from one energy source to the next. Instead, energy sources accumulated.

Why is energy transition such a popular notion? A narrative on energy transitions mirrors modernization theories, where progression through stages of national economic development should ensure technological innovation and overall social and political welfare. Perhaps the most well-known theory of modernization, Walt Rostow's *Stages of Economic Development: A Non-Communist Manifesto* argued that economic development would also result in advanced energy systems.⁴ Theories of progress such as Rostow's *Stages* reproduced the assumption that innovation would stem from the Global North, and only slowly spread to the Global South, ensuring "take-off" and "high mass consumption" in these regions. All in all, modernization projects categorized people and places in terms of whether they belonged to the past or the future. Authors of these theories investigated what the future should hold and provided instructions on how to reach it. The narrative on energy transitions reproduced the common tropes of these theories, mainly relying on national-scale analyses, seeking technological breakthroughs in the Global North, and hoping they would be appropriately applied in the Global South.

Currently, I am writing a book on electricity infrastructure in Ghana, tentatively titled *Energy Accumulation*. An energy specialist I met in Accra in January 2020 while conducting research on this project—let's call him Paul—recognized the linearity of the dominant energy transition narrative. "Maybe we are transitioning in reverse," he said. Until 1997, state-owned hydroelectric power plants produced all of Ghana's electricity. Inadequate rainfall and rising temperatures associated with climate change, however, have negatively impacted these hydroelectric power stations, at times completely incapacitating them. In responding to the resulting blackouts, new independent power producers from countries such as Turkey, China, and the United Arab Emirates set up powerplants in Ghana, using heavy fuel oil and natural gas. Fossil fuel-powered thermal plants today produce about two-thirds of Ghana's total electricity. And indeed, many of the engines that make up these plants are secondhand. For instance, one of the thermal power plant

operators I met in Tema in 2023 described their plant as a "museum," referring to how they had collected old Wärtsilä engines from disused power production facilities in Turkey, Sri Lanka, and India, and carried them in cargo ships to now serve the Ghanaian grid. In some ways, Paul had accepted the linear narrative of a transition, and expected a move from fossil fuels to renewable energy resources to take place in Ghana. Yet, given how the energy landscape that he closely observed did not correspond to the expected timeline of energy transitions, Paul wondered if Ghana as a country was moving backward, although presumably it had to move forward. By arguing that Ghana was transitioning in reverse, he made sense of his environment while keeping an attachment to the seemingly one-dimensional terms of the energy debate.

Yet, it is important to underline that the idea of energy transition is not static. At CeraWeek, a prominent energy industry conference that took place in Houston in March 2023, one speaker suggested that energy transition now has a different meaning for every context. "In Africa, it might mean moving from burning wood to burning gas," he summarized, "but in other places it might mean moving to net-zero." During the same conference, the current ExxonMobil CEO announced: "Our strategy is based on doing both, investing in oil and gas and emission reduction. It's not a matter of or, but and." When I saw Paul again later that month in Accra, he ended our conversation by saying that the transformations in Ghana's electricity infrastructure no longer appeared anachronistic to him. In the aftermath of the Russia-Ukraine War, many European countries foregrounded the significance of energy security. Even though the accuracy of this statement is debated, observers often suggested that the European Union had increased its use of coal because of concerns regarding fuel availability. In reshuffling their supply chains, they also redefined the meaning of energy transition. For Paul, the reverse transition that he had identified in 2020 now characterized the globe.

This does not mean that people around the world are no longer building clean technology infrastructure. As Ghana's energy portfolio indicated a shift from hydropower to thermal stations, some individuals and institutions in the country with access to upfront capital have invested in rooftop solar panels. Affluent individuals began to see these panels as a way to decrease their energy costs and their reliance on an unsteady grid, causing this new technology

to emerge as a status symbol in Ghana. Many institutions also followed this trend. For some of these users, the primary reason for adopting solar power has been its decreasing cost. As such, consumers minimized their debt to the Ghanaian national grid, electricity distributors in the country had trouble paying independent power producers and balancing their books. Eventually, they responded by increasing tariffs for consumers who most likely could not afford the upfront costs of rooftop solar panels, and who had no choice but to remain on the grid. Grace, a shopkeeper in her late sixties, acquired solar panels in early 2023 in exchange for lending space to an electric vehicle battery swapping station outside her shop in Achimota, Ghana. She commented on how the people in her neighborhood often stopped by to admire her solar infrastructure. The construction of panels by the high-paying facilities had the unexpected and undesirable effect of rendering electricity consumption a heavier financial burden on consumers across the country, therefore increasing inequality.

Developments in renewable energy and clean technology do not necessarily result in positive social transformation for everyone. Optimistic scenarios that imagine green cities for the future are perhaps helpful and inspiring in allowing us to believe that humans can overcome the multifaceted crises that define our lives today. For instance, one Ghanaian entrepreneur found clean technology crucial for his country's future. "If we do not implement these systems, then our grandchildren will be cleaning the glass walls of The Line in Saudi Arabia," he summarized, referring to the master-planned development project that Saudi Arabia's Crown Prince and Prime Minister Mohammed bin Salman announced in 2017, and emphasizing how their lack of investment in clean technology would only help solidify the dominance of the world's oil producers.

But such optimistic narratives regarding clean technology also risk diverting our attention away from the main causes of environmental problems. In fact, the only way humans can mitigate environmental problems and ensure equitable energy futures is by challenging the main tenets of capitalism. As we build new renewable energy and clean technology infrastructure, we have the capacity to consider whether such infrastructure will prioritize the needs of its users, promote decentralized democratic decision-making, and finally support the redistribution of wealth.

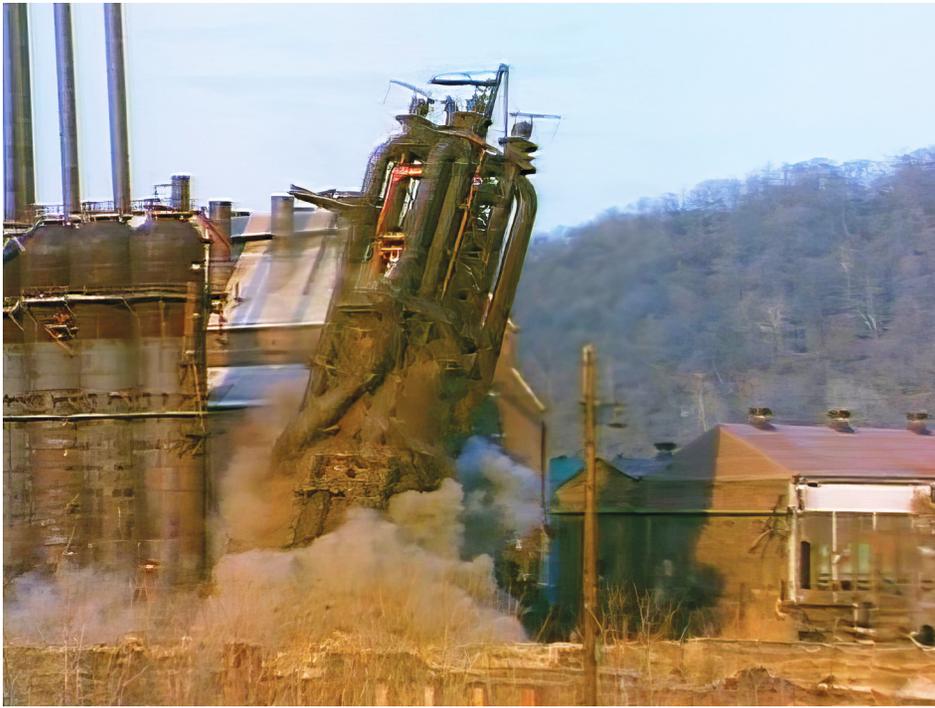
1 Gökçe Günel, *Spaceship in the Desert: Energy, Climate Change, and Urban Design in Abu Dhabi* (Durham: Duke University Press, 2019).

2 Ryan P. Thombs, "Has the relationship between non-fossil fuel energy sources and CO2 emissions changed over time? A cross-national study, 2000–2013," *Climatic Change*, 148, 2018, pp. 481–490, <https://doi.org/10.1007/s10584-018-2215-1>. See also: Richard York, "Do alternative energy sources displace fossil fuels?" *Nature Climate Change*, 2, 2012, pp. 441–443, <https://doi.org/10.1038/nclimate1451>.

3 Richard York and Shannon Elizabeth Bell, "Energy transitions or additions?: Why a transition from fossil fuels requires more than the growth of renewable energy," *Energy Research and Social Science* 51, 2019, pp. 40–43. <https://doi.org/10.1016/j.erss.2019.01.008>. For use of whale oil, see: Brian Black, *Petrolia: The Landscape of America's First Oil Boom* (Baltimore: Johns Hopkins University Press, 2000).

4 Rostow, Walt Whitman, *Stages of Economic Development: A Non-Communist Manifesto* (Cambridge: Cambridge University Press, 1961).

Gökçe Günel is Associate Professor in Anthropology at Rice University. Her latest book, *Spaceship in the Desert: Energy, Climate Change and Urban Design in Abu Dhabi* (Duke University Press, 2019) focuses on the construction of renewable energy and clean technology infrastructures in the United Arab Emirates, more specifically concentrating on the Masdar City project. Currently, she is at work on a second book project provisionally titled *Energy Accumulation*. Dr. Günel co-authored "A Manifesto for Patchwork Ethnography" (2020), and co-leads Patchwork Ethnography.



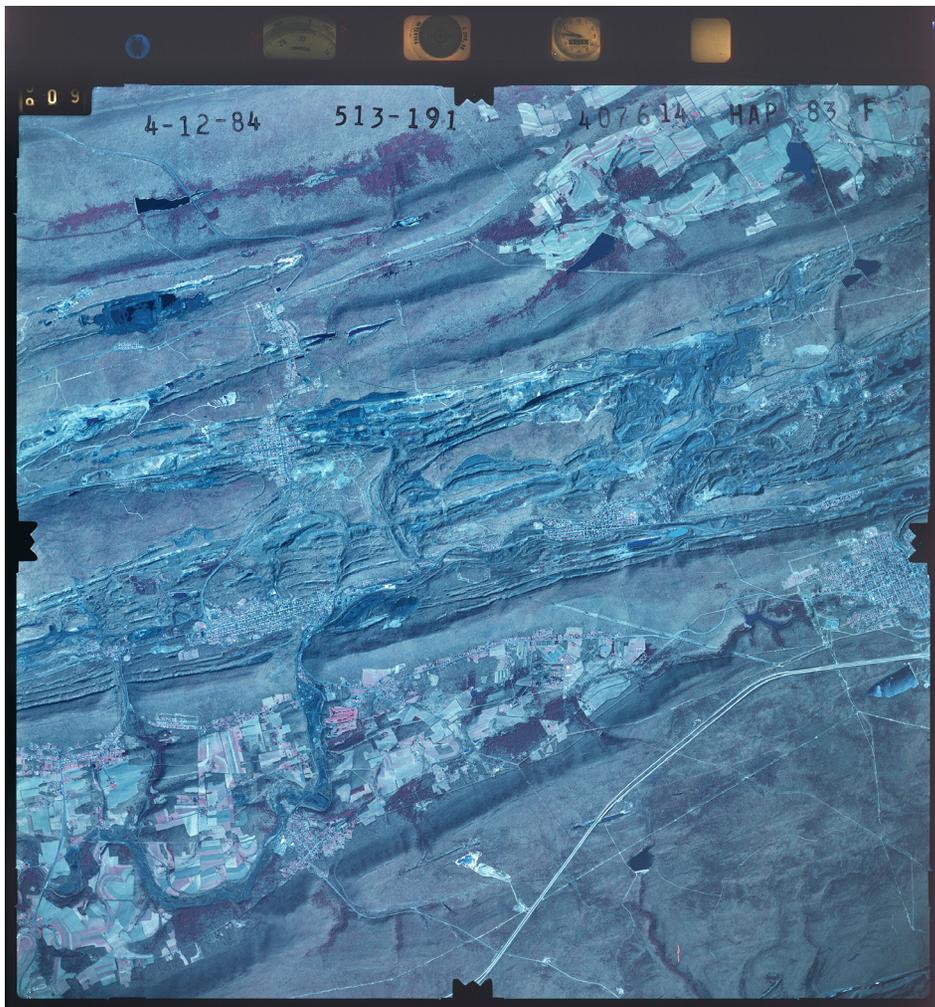
Tony Buba, still from *40°24.2983' N 79° 58.251' N*, 2023

From implosions of steel mills after the decline of the industry to the demolition of the community hospital in Braddock, filmmaker Tony Buba stitches together footage from his extensive documentation of changes taking place across Pittsburgh and the surrounding region over the last few decades. In his multichannel video installation, the artist records Braddock citizens' struggles against different industries to deconstruct and challenge popularized narratives of energy and economic transitions.



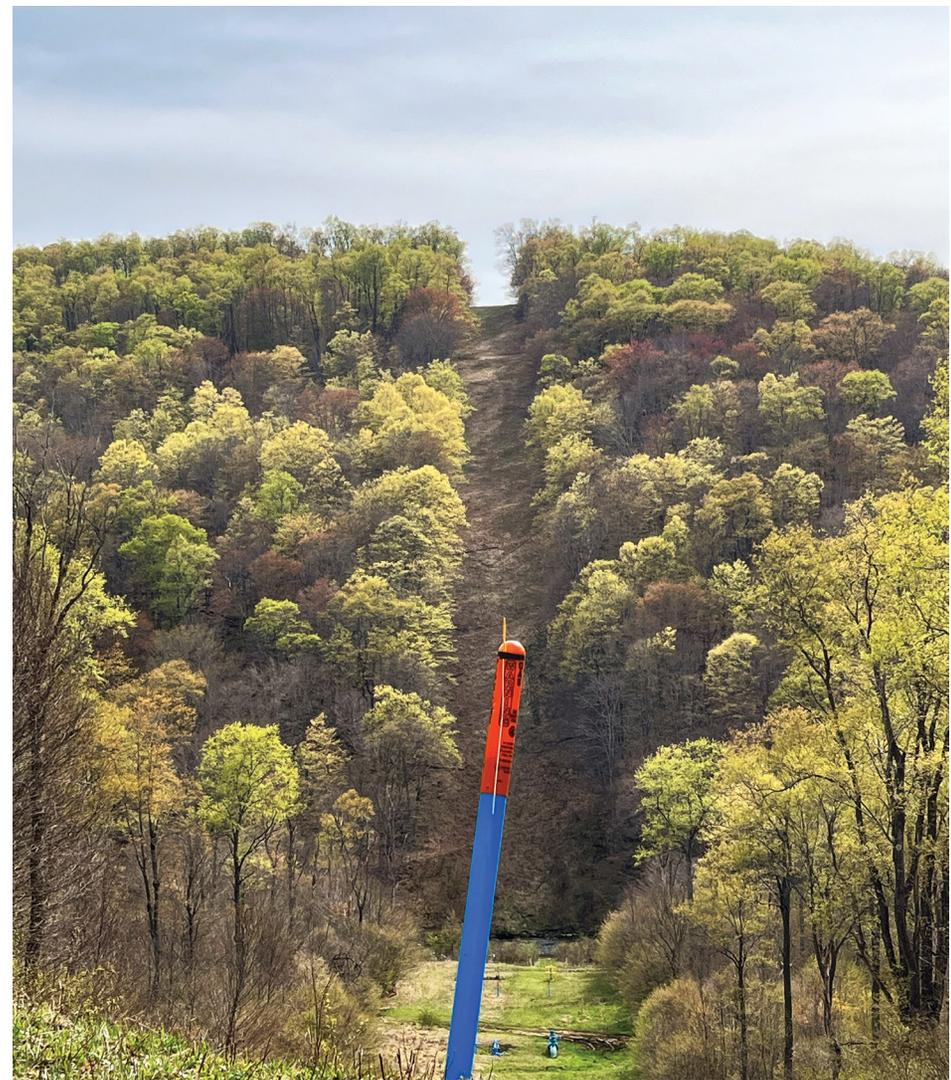
Imani Jacqueline Brown, still from *The holes in the earth mirror the holes in our souls (and from them we can grow trees)*, 2023

This project is an installment of Imani Jacqueline Brown's long-term investigation into the "continuum of extractivism," which weaves together settler-colonial genocide, slavery, and mass incarceration, with fossil fuel industries and climate change. Here, the artist reads the wounds inflicted on the territory in Louisiana's "Cancer Alley" by fossil fuel infrastructure through the cosmological lens of historically enslaved people to unlock the liberatory potential of a multigenerational, multispecies, and multi-spatial understanding of the struggle against racial capitalism in the area.



Laila Celma and Pep Avilés, *Dystopian Carousel*, aerial view of the Middle Western Anthracite Fields, Schuylkill and Columbia Counties, PA, 1984

By focusing on a fire that has been continuously burning since 1962 beneath the now-decommissioned town of Centralia in Pennsylvania, Laila Celma and Pep Avilés trace the geo-environmental and spatial impact of underground coal seam fires. They reveal how these landscapes perform as sentinel lands—reminders and breaking points of the systems of extraction.



Cooking Sections, *Offsetted*, 2019–ongoing, gas pipeline cutting across the Allegheny National Forest, PA, 2023

By examining the emergence of the financialization of nature, *Cooking Sections* questions the underlying logic and mechanisms of environmental protection. The artists assemble stories of individual trees, bringing together different moments of coexistence across species, and highlighting Western Pennsylvania's loving and often fraught exchanges with trees.



Eliza Evans, *All the Way to Hell*, 2020–ongoing, well-core sample from the Permian Basin, Texas, one of the largest fossil fuel fields in the world

Through this participatory activist land artwork, Eliza Evans seeks to open the possibilities for disrupting the expansion of the fracking industry by facilitating the transfer of ownership of mineral rights on a given land to as many people as possible. This fragmentation turns this inequitable and invisible form of mineral property into a cooperative expression of care for the commons.



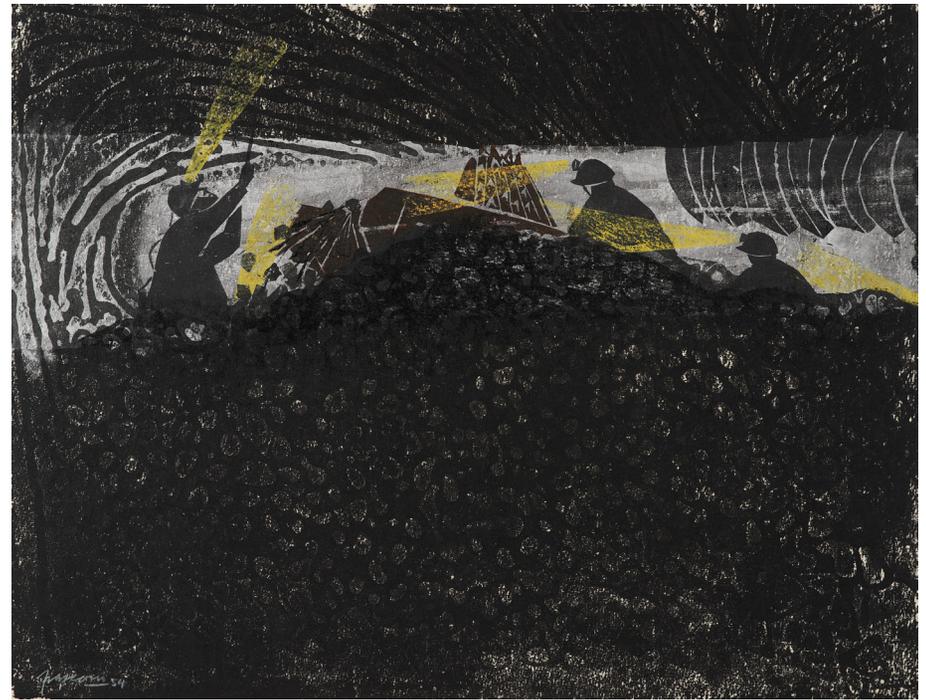
Walter Hood, *The Hill Series*, 2023

In 2009, Walter Hood produced a landscape proposal for the Hill District of Pittsburgh, which mobilized the unique ecological, cultural, and industrial landscape to combat historical disinvestment and disenfranchisement of the neighborhood. Inspired by *The Continuous Miner* series of paintings and prints from Carnegie Museum of Art's collection, the artist revisits his earlier project and speculates on the afterlife of a 15-foot thick open coal "seam" around the Hill's edge.



Not An Alternative, still from *We Refuse to Die*, 2023

Working in Appalachia, the Gulf South, and the Pacific Northwest of the United States, the collective Not An Alternative traces the impacts of climate change and industrial pollution on fenceline communities and draws attention to their shared struggle. Their work challenges dominant representations of powerlessness, underscoring networks of solidarity across geographies, generations, and species.



Antonio Frasconi, *The Continuous Miner*, 1954, Carnegie Museum of Art, Gift of Joy Manufacturing Company, 54.23.7 and 54.23.8





Roberto Matta, *The Continuous Miner*, 1954, Carnegie Museum of Art, Gift of Joy Manufacturing Company, 54.23.1



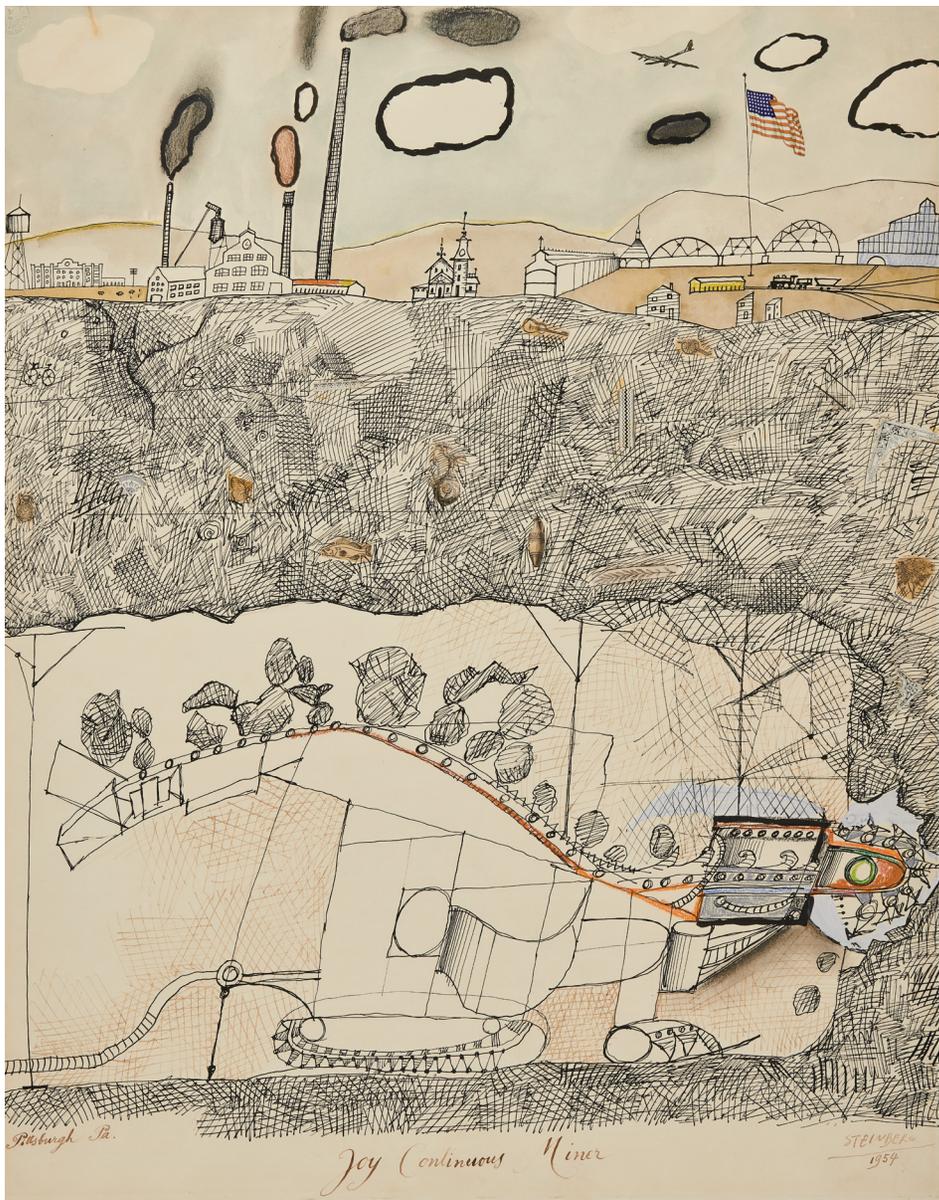
Walter Tandy Murch, *The Continuous Miner*, 1954, Carnegie Museum of Art, Gift of Joy Manufacturing Company, 54.23.2



Ben Shahn, American, *The Continuous Miner*, Carnegie Museum of Art, Gift of Joy Manufacturing Company, 54.23.3



Hedda Sterne, *The Continuous Miner*, 1954, Carnegie Museum of Art, Gift of Joy Manufacturing Company, 54.23.5



Saul Steinberg, *Joy Continuous Miner*, 1954, Carnegie Museum of Art, Gift of Joy Manufacturing Company, 54.23.4



Rufino Tamayo, *The Continuous Miner*, 1954, Carnegie Museum of Art, Gift of Joy Manufacturing Company, 54.23.6

The following conversations emerged from a collaborative discursive process between participating artists in *Unsettling Matter, Gaining Ground* and thinkers, designers, and scientists. Taking the exhibition as a starting point, interlocutors exchanged, collected, and embraced ideas shaping multiple ways of understanding the mechanisms, landscapes, and legacies of resource extraction.

Designer and writer Keller Easterling and artist and activist Imani Jacqueline Brown discuss how means of representation and visual languages can shed light on complex and entangled ecologies. They reflect on infrastructures of mutualism and traditions of ecological resistance from Black activists in Louisiana to mutual aid societies, agricultural cooperatives, and land trusts across generations and diasporic practices.

The conversation took place on February 24, 2023, and has been edited for length and clarity.

Keller Easterling (KE)

Ala and Theo, you have asked us to think about how to rupture the continuum of extractivism, but neither of us is looking for singular evils or singular solutions. That approach would only reproduce totalizing logics and monocultures. Imani, you have used the word *wormhole*, and I've used the word *trapdoor* to talk about a way to access what's beyond the white, modern Enlightenment thinking that has been dominant in the last 500 years of colonizing, capitalizing, and globalizing. Anarchist, abolitionist, feminist, Black, brown, Indigenous thinkers are already there. And there is a cosmology where fugitivity, inconsistency, and patchiness are secret weapons—where one seed produces many seeds and mutualism relies on difference. It is a world that has powers beyond the anointed legal, quantitative, econometric languages of the white, modern Enlightenment apparatus. You bring forward so much more than that apparatus. Still, you use legal and financial terms to model a way to bankrupt oil companies, unravel them, or zero out their holdings so that what has been eclipsed can

flow in. But I am curious how you think about some of these tools.

Imani Jacqueline Brown (IJB)

In general, we need to comprehend the world that we are a part of, that we find ourselves within, that we have inherited, that we are told is the sole and singular world that exists, that can exist, that has existed, that should exist. We need to understand the logics inscribed into landscapes and branded into flesh; logics that turn flesh into an object and turn earth into an object. We need to understand those logics and those landscapes so that we can begin to disentangle ourselves from them.

Ecologies are very complex archives that many of us need to remember how to read and how to speak to and with. Many people, myself included, tend to take a “by-any-means-necessary” type of approach when considering different strategies for resistance, refusals, unraveling, reframing, decomposing, composting, reconstituting, restituting. To bring in a word that I was excited to learn that we share: we need to examine the historical and ongoing processes of *segregating*

complex and entangled political, social, spiritual, economic issues. Of segregating very complex and entangled ecologies. Perhaps some form of re-integration can help to repair this segregated world we have inherited. Reintegrating humanity as a family, and reintegrating humanity with our wider ecologies as well.

KE Maybe the mix is all. The lumpy, live mixture of different species of information has the most potential for change. Beyond reportage, I've been trying to design ratcheting forms that interplay between financial, legal, and spatial variables in a wetter, hotter physical world. It is not designing things, but the way things go together. These interplays might pool and rate mortgages according to climate factors to reverse engineer sprawl. They might rewire a transportation network around interdependent trips and mixtures of technologies. Or they might organize forms of land holding that generate extra value through mutualism. But again, maybe it is only the mixture that has a chance of leveraging or overwhelming the puny abstractions of capital.

IJB I love this. Thinking very practically and strategically. In New Orleans, we have mutual aid traditions called benevolent societies, which are locally known as Social Aid and Pleasure Clubs (SAPCs). They organize our famous second line parades, which grow from Western and Central African funeral traditions. During the Jim Crow era in New Orleans, many SAPCs formed when insurance companies would not insure Black folks. The SAPC was a buy-in system where everyone pays a little bit, and the society would ensure people would have a proper burial when they passed.

These benevolent societies perform a procession with the body accompanied by a brass band, followed by mourners—our syncretic, diasporic rendition of West African traditions—to celebrate the life of the deceased. Some second line processions snake their way through the neighborhood, stopping at Black-owned businesses, bars, and restaurants, ensuring economic sustenance for the living. Care for the dead—respect and deference given to the ancestors—and care for the living are inherently inseparable. Through the

SAPCs, a spiritual practice, an artistic practice and, of course, an economic practice are entangled in one outpouring of cultural exuberance. Anyway, hearing you speak just now, I'm once again reminded to think about reintegration in sociopolitical and economic terms as well as in terms of ecological and racial justice.

KE This is an under-told history—150 years of persistent, elegant activist experiments with land—mutual aid societies, cooperatives, agricultural wheels, labor unions, land trusts, and on and on. Carrying on into the 60s and 70s, these activist surges increasingly assumed Pan-African and global dimensions. The Republic of New Afrika—a proposal for an independent nation of five southern states organized around Tanzania's socialist principles of Ujamaa, or familyhood—is only just one vivid example. The besieged local spot, which is nevertheless empowered by a global diaspora, models many shared conditions in the face of climate change and extreme inequality. These traditions that Jim Crow was originally designed to defeat, and which were repeatedly beaten back

by a white mob, contain the very intelligence needed now for planetary survival.

IJB One of the other conditions of this modernist capitalist world, which you have been describing as dangerously binary, is the segregation of the secular and the sacred. This division does not exist in so many Indigenous American and African traditions. I see the entanglement of secular and sacred manifesting most clearly in the burial grounds in Louisiana's Plantation Country, which is now known as the Petrochemical Corridor, or Cancer Alley or Death Alley, as so many people refer to it. This geography comprises multiple compacted strata of successive forms of violence imposed upon people and the earth.

I am thinking about a graphic understanding of land as a cross section of Cancer Alley spanning several thousand feet above and below ground. In the lower Mississippi River Delta, there is an ancient sea, filled by millennia of earth deposited by the river. Ancient bacteria have decomposed over time, forming vast subterranean pools of oil and gas sandwiched between layers of sand. Above that is a

layer of tens of thousands of miles of pipelines. Just below the surface is a layer consisting of tree roots entangled with mycorrhizal networks and the remains of human and nonhuman bodies become earth.

The layer nearest the surface—the topsoil—has been stripped by a century and a half of monocrop industrial sugarcane production, worked by a century and a half of Black labor—enslaved and later underpaid. The surface has been increasingly saturated by petrochemical fertilizers—trade secret compounds of unnamed chemicals and natural gas liquids transported via pipeline. Those fertilizers are produced in industrial facilities constructed upon the fallow surface. And of course, finally, stretching from the surface is the molecular complex of air, a battleground between trees producing oxygen and petrochemical plants expelling toxic air emissions.

This is the layer cake of successive phases and functions of a system that we call extractivism, which I work to visualize and map so that we can disentangle ourselves from it.

The air and soil, surface and subsurface, are bridged by

Black antebellum burial grounds that were established on these plantation grounds. There, historically enslaved people planted groves of trees to mark the graves of their loved ones. This burial practice carried forward a Pan-African tradition anchored in the belief that spirits of their ancestors would be held in the crowns of those trees, that they could converse with the deceased through those trees and that those trees would provide life, oxygen, sustenance, stability—spiritual, material, and chemical—for the full strata of Louisiana for generations to come.

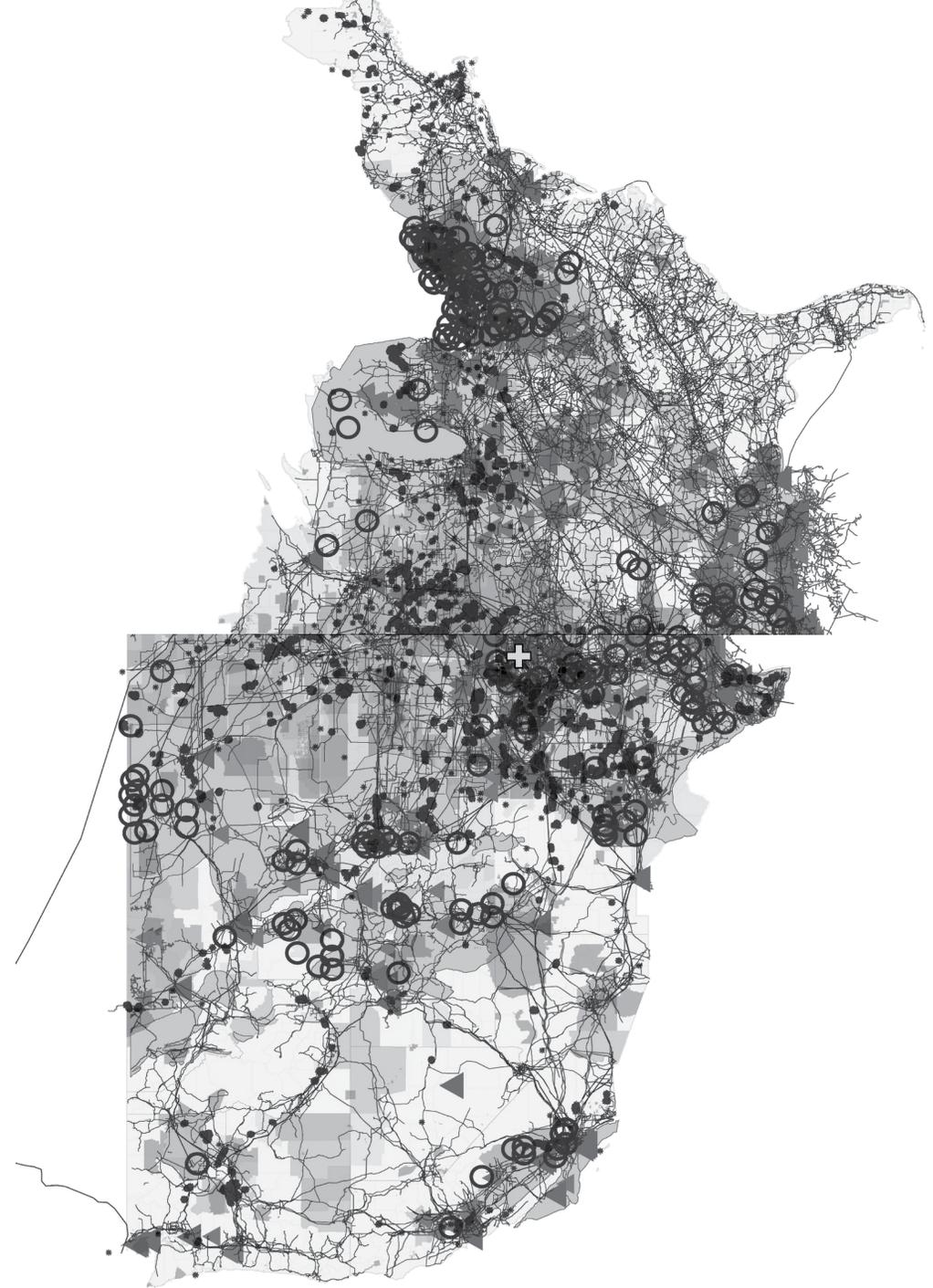
KE Yes. You have said that you want to see this landscape like a bird or an ancestor, and you are doing that even as you expose the metrics and the spatial manifestations of this layer cake—the insanity of the whole apparatus and its quiet forms of lethality. Runaway financial abstractions that have done so much automatic harm are trapped, bloody, and waterlogged in this section. Olúfẹ́mí O. Táíwò has argued that climate change advocacy should expand beyond “parts per million” locutions to be led by a multitude of activist organizations speaking in

different terms—like your own Blights Out collective that exposes gentrification. In the same spirit of mixing, maybe there is power in broad impure coalitions. Might they be so impure that they even include white activists with depraved ancestors—those who, at long last, take up the project of working on whiteness by doing some of the nastiest chores of unwinding it? Anyway, in all of this work, the hope is that space—spatial expressions and practices—might have more authority in culture.

IJB I think it's starting to, and I think that's so incredible about this moment in time. There are voices of so many Black activists in Louisiana, such as Joy and Jo Banner with The Descendants Project, who refuse all these names—Plantation Country, the Petrochemical Corridor, Cancer Alley, Death Alley—that have been imposed upon this region. As they remind us, their first name for the region was simply "home." And so, they're reimagining how the economy should function in this region. The economic transition must represent a complete rupture from the past 300 years of Louisiana's

predominant economic system. It must draw on Black and Indigenous radical traditions—those homegrown survivals that have cultivated so much creative, loving, joyful, and stubborn resistance against all odds for hundreds of years.

And you hear the echoes of this tradition of ecological resistance when activists like Sharon Lavigne of Rise St. James speak about what drove her to activism. Sharon witnessed so many of her loved ones all around her succumb to cancer and other illnesses. She noticed that she could no longer hear the birds singing and that her garden was no longer providing fruit and vegetables that she had been cultivating since she was a young girl. She noticed that the pecan nuts that she loved to enjoy were now hollow. She connects with all of her body and soul to this land—with her heart, her ears, her skin, and her mucosal membranes absorbing all these elements. So, how do we visualize and comprehend these layers of violence and resistance? On the one hand, I have a desire to create some *gesamtkunstwerk*, a total image of this layer cake, but on the other hand, one can also just amplify voices from



The middle of the US hosts a tangle of problems stretching from tribal lands in Oklahoma to Minneapolis where George Floyd was murdered. Mutually beneficial exchanges across entrenched political divides can retool the mechanisms of social welfare, sustainable energy, policing, and reparations for Black and Indigenous peoples. Maps by Keller Easterling and Laura Pappalardo.

these extractive zones, which contain and hold all layers.

KE By transferring to themselves tens of trillions of dollars in the last few decades, it is almost as if the wealthiest in the world have conveniently identified a source of funding. Your work helps to sharpen the aim on this bullseye. But also in the picture are the infrastructures that might be among the first recipients of reparations—the relational infrastructures of community and mutualism that are as worthy of funding as those of concrete and conduit. These infrastructures made of interdependencies and networks in space redouble any resources given to them. They have the capacity to create a superabundance of value in multiple registers beyond the financial. Redirecting unfathomable wealth towards something that creates incalculable value might begin to address an incalculable debt.

IJB I want to end with a comment about reparations, not just in the sense of systems of care, but also financial to fund, as you keep pointing out, all of these grassroots, brilliant, and beautiful radical

experiments. I'm particularly interested in the legal concept of *unjust enrichment*, which redirects attention from attempts to calculate damages for incalculable harm, and states that any profit made by an entity (person or otherwise) through activities that impoverish another entity are unjust and must be restituted. So, this legal framework sets the groundwork for demanding the return of the financial value of the oil that has been extracted, rather than demanding a settlement—a compromise—for harm done. Such reparations would provide the seed money to help these beautiful experiments to thrive.

Keller Easterling is a designer, writer, and professor at Yale. Her books include *Medium Design* (Verso, 2021), *Extrastatecraft: The Power of Infrastructure Space* (Verso, 2014), *Subtraction* (Sternberg, 2014), *Enduring Innocence: Global Architecture and its Political Masquerades* (MIT, 2005) and *Organization Space: Landscapes, Highways and Houses in America* (MIT, 1999).

Imani Jacqueline Brown is an artist, activist, writer, and researcher from New Orleans, LA, based between New Orleans and London. Her work investigates the “continuum of extractivism,” which spans from settler-colonial genocide and slavery to fossil fuel production and climate change. In exposing the layers of violence and resistance that form the foundations of settler-colonial society, she opens space to imagine paths to ecological reparations. Among other things, she is currently a PhD candidate at Queen Mary, University of London, a research fellow with Forensic Architecture, and an associate lecturer in MA Architecture at the Royal College of Arts.

Conservation ecologist Nicole Heller and Beka Economopoulos and Jason Jones, cofounders of the art collective Not An Alternative, describe the extractivist foundations of the discipline of natural history. From there, they extrapolate on how cultural institutions and art practices may rupture the discipline's boundaries and foster the formation of expansive kinships across humans and nonhumans.

The conversation took place on February 27, 2023, and has been edited for length and clarity.

Nicole Heller (NH)

I met the two of you when I was first hired at Carnegie Museum of Natural History as curator of Anthropocene studies, and just starting to think about how to bring the Anthropocene—the recently proposed global epoch, when humans start transforming the Earth system, in mostly unsustainable and unjust ways—into the museum. So, natural history as a discipline benefited from processes of extractivism. It spread along with colonialism.¹ First, it was about access to new places, and collecting and organizing the diversity of species and cultures in the world. Then, in the 19th and 20th centuries, it also evolved into a practice of salvage—collecting the species and the cultures that were rapidly disappearing along with the spread of colonial capitalism. The museum becomes a mausoleum, a place for the dead. Fast-forward to the end of the 20th century and the emergence of the Anthropocene, natural history museums start to see that they can play a greater role in being part of the future and telling the stories of the living. I think this shift aligns with where you both come in with your project and your artistic practice of

seeing the possibilities in the institution of natural history—shifting it from being a place to mourn the dead to recognizing it as a place that can celebrate, amplify, and partner with the living.

Beka Economopoulos (BE)

I see natural history as something broadly defined—both a way of seeing, understanding, and relating to the land, and a set of institutional practices that mediate our understandings of the ever-unfolding history of the land. And not just mediate, but also help to shape.

As artists with a spatially focused practice, we saw a lot of possibilities in the form of a natural history museum as an institution to disrupt, intervene upon, and remodel our relationship to the natural and built environment. To take a step back and introduce ourselves, we are cofounders of a collective called Not An Alternative, formed in 2004. We have a mission to affect popular understandings of events, symbols, institutions, and history. For many years, we employed critical research and design and applied it to social movement contexts in collaboration with community groups fighting homelessness,

gentrification, and the privatization of our urban environments. Our work brings together tools from art, architecture, exhibition design, and political organizing. In 2014, we launched a new long-term project called The Natural History Museum. The domain thenaturalhistorymuseum.org was available. We spent our first grant on a cheap, former airport shuttle bus and wrapped it to look like a natural history museum. So, we invested in the material infrastructure that would make us believable as a natural history museum, borrowing from museum presentation forms and pedagogical models to do what we think every natural history museum ought to be doing in the context of the climate and biocultural diversity crises of today.

Jason Jones (JJ)

There's also another way of thinking about what we do as less of an intervention and more about pointing to another world—one that is simultaneously inside and outside of traditional natural history. Beka mentioned our interventions on events, symbols, history, and also institutions. Through these,

we aim to highlight the space or the gap which is excluded from traditional natural history and make that site visible.

NH There's a lot of power in that opportunity. You're pointing at this tension or this duality that natural history has in it, this way of seeing that is both about seeing the other, understanding life histories, the diversity of life. But simultaneously has this reductionist, extractivist logic, in which it tries to extract the other and stick it in a jar, or in a drawer, and deaden it. I think that what's exciting about the work you're doing, is that close-looking, that paying attention, that sort of geographical, social, ecological, political approach, bringing all those dimensions together, and putting that in the container of natural history. It is super provocative for the field of natural history, and I think it is aligning with other movements, of course, that are also asking natural history to think about its colonial history, the way that science has been mobilized in racist and ecological destructive ways.

I want to also say about the impact of your work: many museum insiders don't even realize that you're on

the outside. I went to some museum conferences where people were showing one of your projects, "Hey, look at what this Natural History Museum is doing," and saying, "This is where we need to be." I think that's an exciting example of how institutional change can happen. These sorts of collaborations inside and outside start to provoke each other and advance the field in ways that nobody really understands how it's exactly happening.

BE This speaks to questions of scale because on the one hand, it's working at the institutional scale, understanding the museum as a system that has a porosity to it, and that is split. An institution is not wholly defined by its colonial and capitalist foundations. It is also defined by the desires of the workers and the visitors and of the cultural items it contains. So, there exists in our minds an antagonism within any institution or system that can be activated. It's not a burn-it-down approach because there's some naivete to that with regards to how social change happens. It requires a choreography and interplay of inside and outside strategies.

That's the institutional scale. But then the content of the particular institution we're intervening upon, natural history, has its own dimensions, and in that sense, is also split. While we started out by pressuring institutions of natural history to drop fossil fuel sponsors from their boards and reevaluate their exhibitions, programming, and community collaborations, we also wanted to model and produce a practice of natural history we could get behind. There's some degree of pressuring the fields by aggregating, making visible, and building architectures of solidarity amongst practitioners, but then also just training the gaze to the natural history that exists that is not colonial or capitalist, and is capable of sustaining life on Earth for generations to come.

JJ This shift in scale became really clear to us when we partnered with an Indigenous delegation to develop an exhibition at Carnegie Museum of Natural History in 2017. We went into the project thinking we were doing an intervention on a colonial apparatus. This shifted when, as part of the exhibition, the delegation did a water ceremony inside the

museum. It was at that point we realized that, for our partners, the museum had only existed for a hundred years, and under the institution was a river that had a history that was millennia older. Basically, the museum had no real power, and the real power was in the water underneath the institution.

NH I think this particular understanding of the land is a very unfamiliar concept in Western culture and science. The museum itself is not organized around a concept of land or even Earth, or processes like climate or species interactions—the relationships among beings, the relationships among creatures with water, the relationships of people with each other, and with their local place. What does it mean to acknowledge the land, beyond being a gesture to Indigenous communities, and if not specifically about land back? I see it politically as this deep reconciliation of ourselves as part of the land and in relation with ancestral caretakers, as well as an acknowledgement that we live as part of a multi species community, and the obligations, responsibilities, and kinship that needs to go along with that.

As we embrace these elemental but seemingly radical ideas, it illuminates this incredibly creative, imaginative project to rethink the natural history museum with community, with life around it.

BE Nicole, you talked about the museum-as-mausoleum model. There's a report that Cherokee scholar Hester Dillon recently authored called "Unfencing the Future."² It begins with an anecdote about her Cherokee grandfather who started college before the Great Depression. The Depression hit, and he sold his Indian allotment in order to be able to finish college. One of his final exams was a test with one question, "What was the most defining feature of the American West?" And he wrote one word—"fences"—turned it in, and apparently got an A+.

NH Wow.

BE I think allegorically, the fence is both a symbol and an infrastructure that divides one place from another and determines who and what goes in and out, who or what belongs, and who or what should be excluded. It also inscribes a property regime. It allows for

lands to be divided up and bought and sold and treated as commodities.

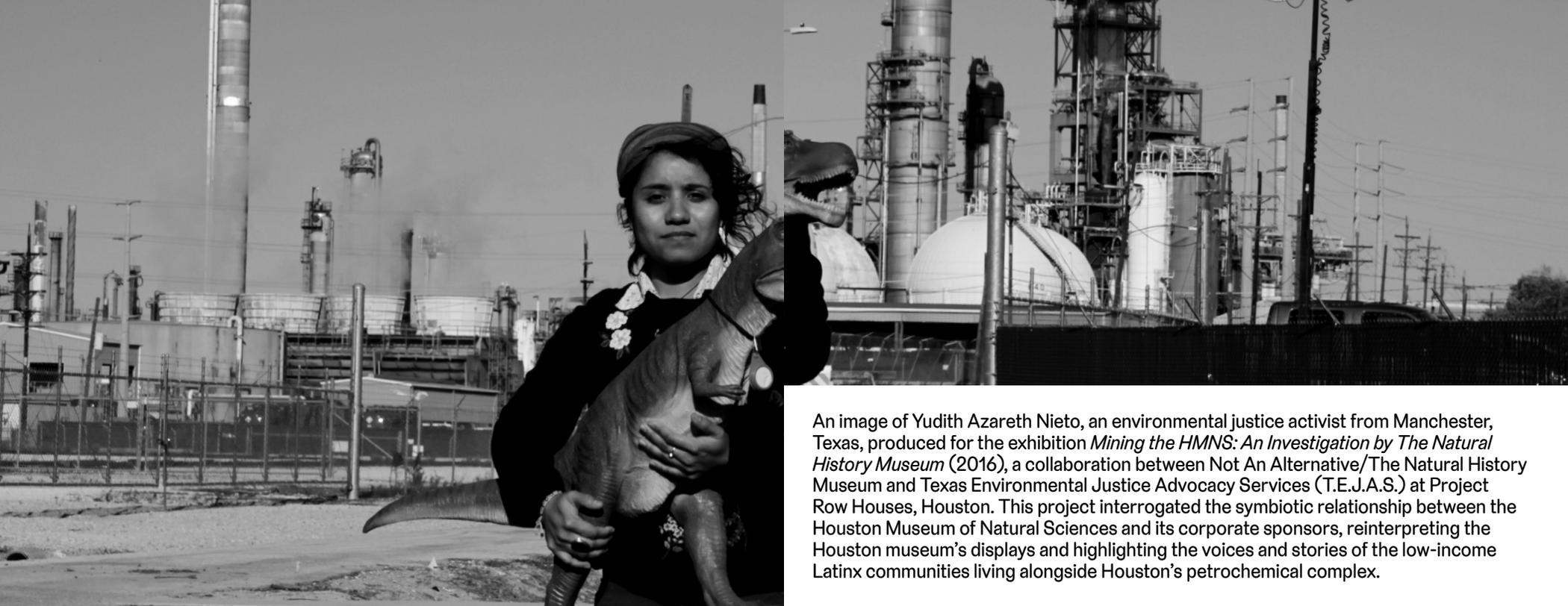
NH Right. One way is to ignore those things that refuse to fit, which maybe is mostly what happens; or force them to fit, take away rights, not see things for what they really are. Or to try to change. I think where I'm going with this is the idea that as a museum, as art, and maybe one thing we also share in common is this interest in creating spaces that bring together diverse individuals to talk about those ways of knowing, those worlds that they live in, their desires, their dreams.

One of the ways we do that at Carnegie Museum of Natural History specifically is with a project called the "Climate and Rural Systems Partnership." This is a learning science project sponsored by a National Science Foundation grant, investigating how a museum can support its community. You're talking about fences. There're all kinds of divides we face, and one of them is the urban-rural divide. While there isn't a fence between the city of Pittsburgh and the surrounding counties, it can sometimes feel like there is in the attitudes and the way

people talk about the region and community.

The Climate and Rural Systems Partnership is creating learning networks that cross that rural-urban divide, and thinking about how can the museum be a convener to bring people together? What kind of resources do we have, specifically to help the community here in Western Pennsylvania talk about climate change and talk about an alternative future? Particularly in Western Pennsylvania because of the long history of being part of the fossil fuel economy. People feel really uncomfortable talking about getting off fossil fuels because it feels like a threat to their own family, their own community, to their neighbor. So, people are living that duality even inside of themselves, where on the one hand, they hold a commitment and respect to their family and the heritage of being in a region that helped fuel the Industrial Revolution in the United States, a major petrochemical hub, and the kind of pride that goes along with that. While on the other hand, people also hold this very real knowledge that the industry is not sustainable, that it is polluting, and that, in fact, it's bringing communities

The House of Tears Carvers (Lummi Nation) and Not An Alternative/The Natural History Museum, *Whale People: Protectors of the Sea* (2018), is an immersive seven-channel video installation at Lummi Nation Stommish Grounds, Washington, from 2020. Narrated by the late Chief Tsilixw Bill James (Lummi), Master Carver Jewell James (Lummi) and Ta'ah Amy George (Tsleil-Waututh), the video tells the story of the environmental emergency through the figure of the orca, which Coast Salish Tribes regard as ancestors and kin.



An image of Judith Azareth Nieto, an environmental justice activist from Manchester, Texas, produced for the exhibition *Mining the HMNS: An Investigation by The Natural History Museum* (2016), a collaboration between Not An Alternative/The Natural History Museum and Texas Environmental Justice Advocacy Services (T.E.J.A.S.) at Project Row Houses, Houston. This project interrogated the symbiotic relationship between the Houston Museum of Natural Sciences and its corporate sponsors, reinterpreting the Houston museum's displays and highlighting the voices and stories of the low-income Latinx communities living alongside Houston's petrochemical complex.

down. And so how do we find the language to talk about that duality? What kind of science can we do to support people to understand and come to terms with that?

(pause)

A bug just attacked me!

BE In natural history museums, you don't see the social sciences particularly represented. It's usually the lab sciences. Ecology is one field that we've talked about. But I think in many museums, trying to bridge these gaps, they negate the political, maintaining this myth of neutrality. And in doing so, they take a very harmonious approach: we just have to knit these relationships back together between our communities, and between those at odds, and between the species and air and water and so on.

In reality, there is a competition between an understanding of the world as composed of resources to be extracted—including life and labor—versus an understanding of the world as something we share in common across generations. And that is the battleground. We need museums to pick a side, and that means they

cannot negate the political because what you're doing with communities in the frack lands of Western Pennsylvania is an inherently political project. What we need to be doing is redefining and renegotiating our political alliances so that it is not in terms of left and right, but rather us and *them*, as in the few who are exploiting the many. Within that frame, I think the proud history of the steel workers and the farmers and the multigenerational communities in Southwest Pennsylvania is something that can be not just recuperated but celebrated, because it casts these communities in the role of hero. Their ancestors participated, perhaps, in one wave of extraction, but even more recently, fought for workers' rights and brought unions, four-day work weeks, safer working conditions, and OSHA regulations to protect our families and communities' health. That is what we have to build upon and fortify, and propaganda can play a really effective role. The museum itself could be an institution of this partisan propaganda.

1 Sam Kean, "Historians expose early scientists' debt to the slave trade," *Science*, April 4, 2019, <https://www.science.org/content/article/historians-expose-early-scientists-debt-slave-trade>; Kathryn Yosoff, *A Billion Black Anthropocenes or None* (Minneapolis: University of Minnesota Press, 2019).

2 Hester Dillon (Cherokee Nation), "Unfencing the Future: Voices On How Indigenous and Non-Indigenous People and Organizations Can Work Together Toward Environmental and Conservation Goals," 4 Rivers Consulting, LLC (2021): 10, <https://4riversconsult.files.wordpress.com/2022/03/unfencing-the-future-revised.pdf>.

Nicole Heller, PhD, is a conservation ecologist and Associate Curator of Anthropocene Studies at Carnegie Museum of Natural History in Pittsburgh, PA. Heller works inside and outside the museum to advance education and research about climate justice and biodiversity protection. Her current research investigates climate change learning across rural-urban communities, and the role of land stewardship in improving ecological health, well-being, and social equity in cities and wildlands. She is thankful for all her collaborators, including treehoppers, ants, plants, gorillas, and many human ecologists, climate scientists, journalists, designers, anthropologists, Indigenous practitioners, learning scientists, artists, and many others.

Not An Alternative (NAA, est. 2004) is an art collective with a mission to affect popular understandings of events, symbols, institutions, and history. Through engaged critical research and design, the group produces interventions that disrupt and remodel material and immaterial space, bringing together tools from art, activism, architecture, and exhibition design. In the context of intensifying ecological crises, NAA created The Natural History Museum (NHM, 2014–present), a traveling, pop-up "museum for the movement." Unlike traditional museums, NHM highlights the sociopolitical forces that shape the natural and built environment. The collective is represented here by cofounders Beka Economopoulos and Jason Jones.

Unsettling Matter, Gaining Ground Convening

Thursday, October 5, 5:30–8 p.m.
Friday, October 6, 10 a.m.–3:30 p.m.

Please join us for a two-day public program that expands upon the conceptual frameworks underpinning the artistic proposals in the exhibition *Unsettling Matter, Gaining Ground*, presented in the Heinz Architectural Center from August 19, 2023, to January 7, 2024. The program consists of a dynamic mix of presentation formats—ranging from individual talks and panel conversations to a musical performance and gallery walk-through—that invite various publics to convene and reflect together upon the exhibition and provide further insights into the possibility of collectively existing on the planet.

Participants include artists featured in the exhibition: Cooking Sections, Not An Alternative, Pep Avilés and Laia Celma, and Imani Jacqueline Brown; anthropologist Gökçe Günel; the musical ensemble Les Cenelles; environmental lawyer Mari Margil, among others.

Free and open to the public,
registration preferred.

For a full schedule of the program,
visit carnegieart.org

Works in the Exhibition

Imani Jacqueline Brown
The holes in the earth mirror the holes in our souls (and from them we can grow trees), 2023
video installation (color, sound by Les Cenelles) and print on muslin
9:59 min.
Courtesy of the artist

Tony Buba
40°24.2983' N 79° 58.251' N, 2023
four-channel video (color, sound)
6 min.
Courtesy of the artist

Laja Celma and Pep Avilés
Dystopian Carousel, 2023
anthracite, glass, epoxy, metal, soil, and photograph
36 x 45 in.
Courtesy of the artists

Cooking Sections
Offsetted, 2019–ongoing
steel, tree elements, aluminum, photographs
Dimensions variable
Courtesy of Cooking Sections

Eliza Evans
All the Way to Hell, 2020–ongoing
legal documents, print on paper, well core samples
Dimensions variable
Courtesy of the artist

Walter J. Hood
The Hill Series, 2023
selection of collages, mixed media
12 ¼ x 16 ¼ x 1 ½ in. each
Courtesy of the artist

Les Cenelles (Joseph Darensbourg, Demi Ward, Peter J Bowling, and Denise Frazier)
Enbas, 2023
Soundscape
9:59 min.
Courtesy of Les Cenelles

Not An Alternative
We Refuse to Die, 2023
two-channel video installation (color, sound), carved charred wood
Dimensions variable
Courtesy of Not An Alternative

From Carnegie Museum of Art's collection

Antonio Frasconi
The Continuous Miner, 1954
woodcut on paper
29 ¾ x 35 ¾ x 1 in.
Gift of Joy Manufacturing Company
54.23.7 and 54.23.8

Roberto Matta
The Continuous Miner, 1954
oil on canvas
44 ¾ x 53 ⅞ x 1 ¾ in.
Gift of Joy Manufacturing Company
54.23.1

Walter Tandy Murch
The Continuous Miner, 1954
oil on canvas
18 ⅞ x 27 ¼ x 1 ½ in.
Gift of Joy Manufacturing Company
54.23.2

Ben Shahn
The Continuous Miner, 1954
tempera on paper on cardboard
43 ¾ x 36 ¼ x 1 ¼ in.
Gift of Joy Manufacturing Company
54.23.3

Saul Steinberg
Joy Continuous Miner, 1954
watercolor, pen and ink, and paper on paper
28 x 22 in.
Gift of Joy Manufacturing Company
54.23.4

Hedda Sterne
The Continuous Miner, 1954
oil on canvas
47 ¼ x 47 x 40 in.
Gift of Joy Manufacturing Company
54.23.5

Rufino Tamayo
The Continuous Miner, 1954
tempera on cardboard
22 ¼ x 26 ½ x 2 in.
Gift of Joy Manufacturing Company
54.23.6

Janssen and Cocken, architects
Research Building; Mellon Institute, Pittsburgh, Pennsylvania; [exterior perspective], 1931–1937
graphite on tracing paper
23 ½ x 37 ¾ in.
Gift of the family of E.J. Hergenroeder
94.244.2.1

Samuel Yellin
Grille (design prototype for the Mellon Institute of Industrial Research), ca. 1932–1935
aluminum and iron
53 ½ x 36 x 5 in.
Gift of Samuel Yellin Metalworkers
2010.35.1

Samuel Yellin
Selection of Design drawing[s] for metalwork for the Mellon Institute of Industrial Research, ca. 1932–1935
pencil on tracing paper
25 ½ x 24 in.
Gift of Samuel Yellin Metalworkers
2010.35.4.1 and 2010.35.4.2

Samuel Yellin
Selection of Grille component[s] (design prototype for the Mellon Institute of Industrial Research), ca. 1932–1935
aluminum and iron
20 x 14 ⅞ x 7 ½ in.
Gift of Samuel Yellin Metalworkers
2010.35.2 and 2010.35.3

Pittsburgh Coal Washer Co.
Selection of Mine Buildings, Burlingham, KY; [detail drawings, elevations, sections], 1918
ink on linen
Gift of Nicholas A. Tisak
92.29.1, 92.29.2, 92.29.5, 92.29.6, 92.29.9, and 92.29.10

Exhibition Production Credits

Tony Buba

Video editing: Tom Dubensky
Sound design: Andrew Halasz

Imani Jacqueline Brown

Produced with the generous support of San Jose Museum of Art and the Graham Foundation for Advanced Studies in the Fine Arts.

Laia Celma and Pep Avilés

Thanks to the Stuckeman School of Architecture and Landscape Architecture, The Pennsylvania State University.

Collaborators: Miranda Esposito, Nikoletta Filippidou, Ashley Shade, Emily Weinert; Lighting Design: Emory Smith, SEAM Lighting Design; Photography: Michael Black, (michaelblack | BLACK SUN®); Fabrication support: Allan Sutley, Steve White; Special thanks to Blaschak Anthracite (Tom Lowe and Boyd Kreglow), Jamie Heilman, Marcus Shaffer, and José Hevia

Cooking Sections

Studio team: Matthew Darmour-Paul, Remi Kuforiji, Rosa Whiteley; Fabrication: Camut LLC; Reclaimed slabs: Urban Tree; Special thanks: Charles Aubin, Haverford College, Charlene Foggie-Barnett, Eva Franch i Gilabert, Mari Margil, Carlos Mínguez Carrasco, Aviva Rahmani, Robin Scully, Irene Sunwoo, terra0

Offsetted was first conceived as a lecture-performance at Storefront for Art & Architecture, expanded for Performa 17, New York, 2017. The project then developed into a namesake exhibition at the Arthur Ross Architecture Gallery at Columbia University (2019) and a publication (Hatje Cantz, 2022).

Eliza Evans

Graphics and web design: Sarah Hewitt; Fabrication: Sherry Morris; Seed funding: Puffin Foundation

Not An Alternative

Not An Alternative (art collective); Concept development: Andrea Rollefson, Beka Economopoulos, Jason Jones, Steve Lyons; Tree salvaging: Jason Jones and Mila Jones (with Breitenbush community members); Carvings, linocuts, masks design and fabrication: Jason Jones; Filming, photography, and editing: Jason Jones; Production logistics: Andrea Rollefson, Beka Economopoulos; Partner and community engagement: Beka Economopoulos; Research and writing: Steve Lyons; Studio assistant: Sherry Evans; Website and graphic design: Cristian Fleming; Community partners and collaborators in Texas: Better Brazoria, Carrizo/Comecrudo Tribe of Texas, Fenceline Watch, Gwendolyn Jones, Indigenous Peoples of the Coastal Bend, Port Arthur Community Action Network (Port Arthur), Society of Native Nations, TEJAS / Texas Environmental Justice Advocacy Services, Yudith Nieto, Another Gulf is Possible, Nieto family; Louisiana: RISE St. James, For a Better Bayou, Debra Ramirez, Mothers of Mossville, Lois Booker Malvo, Fisherville Environmental Action Now, A Mother's Love Support Group, Alyssa Portaro, Roishetta Ozane, Vessel Project; Pennsylvania / Ohio River Valley: BCMAC / Beaver County Marcellus Awareness Community, Better Path Coalition, BLAC / Black Appalachia Coalition,

Breathe Project, Lois Bower-Bjornson, Clean Air Council, Melanie Meade, BLAC, GASP/Group Against Smog and Pollution, Physicians for Social Responsibility- PA Chapter, River Valley Organizing, Unity Council for the East Palestine Train Derailment WaSEPA / Watchdogs for South-Eastern Pennsylvania; Multi-region Coalitions: Earthworks, FracTracker, Halt the Harm Network, People vs. Fossil Fuels Coalition, Permian-Gulf Coast Coalition; Pacific Northwest: Breitenbush Community; Video installation: Producers: Not An Alternative and Yudith Nieto (Another Gulf is Possible); Filming / Editing: Jason Jones; "Toxic Tour" Location Guides: Bryan Parras, Gwendolyn Jones, Hilary Flint, John Beard, Lois Bower-Bjornson, Sharon Lavigne; Ceremony participants/community members: Alma Ringer, Ana Ramirez, Andrea Gaines, Beka Economopoulos, Mychael Ramirez, Ruth Nieto, Yudith Nieto, Jacob Thomas. Sponsors: 4Culture, Heinz Foundation, Park Foundation. Please visit WeRefuseToDie.org for the most current project credits.

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Unsettling
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