Performing the Electrical or My Heart is an Electromagnetic Chamber

Scenographies of Power, Ecology and Speculative Practice

by

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ABSTRACT

*Performing the Electrical* traces the histories and futures of electrical discovery and knowledge through cultural performances, socio-political assemblages, and the more-than-human worldmaking functions of energy in general and electricity in particular, or what I refer to as energy-as-electricity. This project seeks to transform how energy-as-electricity is perceived, and thereby to re-vision the impact that energy-rich relationships might have ecologically—in both the social and environmental senses of the word. As a practice-led inquiry I use my scenographic sensibilities in combination with performance studies and energy humanities lenses to identify how energy-scapes form through social performances, material relations, and aesthetic/ritualistic interventions. This approach allows me to synthesize vastly different scales of energy-as-electricity performatives and spatialities and propose alternative framings which work towards decolonizing and re-feminizing energy-rich relationships. This research considers the way power flows, accumulates, and transforms through performance as embodied expression, practice and eventful doings of human and more-than-human agents. It asks: if place is practiced space (Henri Lefebvre), how can decolonizing and re-feminizing energy-rich relationships transform normative power relationships (or power geometries, as cultural geographer Doreen Massey refers to such globalized interconnections)—which are formed through electricity, technologies and colonial-capitalism? I ground this inquiry as an ecological intervention in order to investigate how performing with electricity differently (both in collective imaginations and quotidian interactions), can change the ways that electricity is produced and consumed in the time of the Anthropocene,
Capitalocene, and Plasticene. The following study produces written and tacit knowledge that expands the framing of energy-rich relationships shared between human and more-than-human performatives. My provocation is that experiential encounters are critical for expanding the ontological plurality of energy-as-electricity with ecological a/effect. Drawing on the insights of performance scenographer Rachel Hann, I demonstrate that scenographic methodologies in an expanded field, along with embodied sensing, provide productive insights into this endeavor of expansion. This project both serves as a space making/space keeping provocation and offers a methodology for devising more desirable futures.
ACKNOWLEDGMENTS

I would like to begin by acknowledging my companion, dyslexia, in writing this dissertation. Dyslexia for me is a struggle with reading and writing where words are unstable, they move on the page, rearrange themselves to make new meaning, they sometimes disappear but still remain in my “reading” of them and at other times I see them as I want them to be not as they actually are. Dyslexia has isolated me from the practical and efficient world. It is also, undoubtedly, a doorway which allows me entrance and sight into a rich, creative, and sensorial world.

Writing this dissertation has been a monumental journey, confronting my distrust of language and also needing language to complete this research. My deepest gratitude to my committee members for their ongoing support and ability to see my ideas and connections, even when spelling and grammar stood in the way. Special thanks to my committee chair and program director Tamara Underiner for her guidance and additional labor of wading through the murky waters of dyslexia with me.

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INTRODUCTION

Fig 1. Video Still of Mesmeric Rituals at a Power Plant. Photo credit: Cáit NiSiomon
Fig. 2. Video Still of Mesmeric Rituals at a Power Plant. Photo credit: Cáit NiSiomon
Songs for Mesmeric Rituals

Lyrics:
I believe in electricity, body electrics
You and I conductors, cellular memory
The chemistry that supports life, the way electrons condense to make material
Energy lines, body meridians and Earth lines
The geometry of meta and real physics

I believe in
Lighting bugs, phosphorescent electric eels, ultraviolet scorpions, electromagnetic plants
Below the dirt pink spore communication
I believe we are electric bodies

Metals and minerals
energy in movement,
energy in heat, energy in decomposition
in metals and acids and tiny explosions that make big explosions

Metal and mineral
energy in movement,
energy in heat, energy in decomposition
in metals and acids and tiny explosions
ENERGY-AS-ELECTRICITY AND PRACTICE-AS-RESEARCH

In the basement of the Royal Institute of London, there is a small but elegant display that makes up the Faraday Museum, named after the British scientist Michael Faraday, whose research at the institute between 1813 and 1852 played a vital role in the advancements of electrical theory. As a visitor to the Museum, my journey through the space traces the history of electrical invention, documented by the relics, objects and original instruments that contributed to the development of modern electrical knowledge. Upon entering the space, a large illuminated periodic table hangs opposite a short corridor of images, text, and objects which leads the viewer to a recreation of Faraday’s “magnetic laboratory.” A thick sheet of glass divides the viewer from a multitude of mineral stained vials, glass orbs, hand pumps, and a variety of other wood, bronze, and electromagnetic instruments. Kept at a distance, sealed off by the glass wall, their smells and textures are unknown. As I stand peering into the laboratory, looking past my own reflection into the room, I think about being on the other side of the glass, moving between shelves and worktables. I long to touch and know more delicately what these objects have to tell, how it feels to animate them, and what their effects would have felt like, emotionally and sensually, in the time of their making.

At the other end of the room is a recreation of what would be the contemporary equivalent of Faraday’s lab. It is a space of stainless steel, electronic instruments and white plastics. It is not lost on me the role electricity played in making the materials, objects, and digital instruments of this contemporary magnetic laboratory; the way knowledge extends through materials and processes, to become part of its own continuation.

A long corridor runs alongside the room. It contains beautifully lit vitrine style cases and presents objects and photographs chronicling individual scientists and their contributions to
electrical scientific discovery. At the far end is a final display, a summarization by which to bid visitors farewell. Titled *Empire Builders*, the board describes the ways that scientific discoveries were put to use by the British Empire: “In the 19th century, Britain was the only superpower in the world. The Royal Institution helped the government to use science to maintain the supremacy of the British Empire.” The board goes on to track the collaborations between Faraday, the Royal Institute and the British military, noting specific scientific contributions such as advancements in naval ship navigation, surveillance, communication, electromagnetic detection technology, and explosives. Below the text sit two selected relics of this “Empire Building.” The first is a collection of glass lenses that advanced electrical observation and illumination technology, which accelerated the efficiency of British military navigation. Below the lenses are two cross-sections of insulated metal cables which allowed for the transportation of electrical signals beneath the sea: the first step towards globalized communication.

While the final display, *Empire Builders* is intended to be a closing and summarizing encounter communicating the importance of scientific discovery, it reads more as an affirmation of the long-standing partnership between science, technologies, militarization and the colonial imagination. As I stood in front of this display, I tried to grasp what I was feeling: it was the familiar sensation of knowing something is ugly, not wanting to be part of the ugliness but somehow unable to move forward without being part of it. I was a subject of the relationships expressed here, an empire builder by and through my embodied relation to space, materials, assemblages, and energy-as-electricity.

I was long after my visit haunted by the way in which science, invention and new technologies were so shamelessly associated with the colonial project of Britain in the 18th century and yet at the same time, by the palpable and enduring effects of the project itself. The
sentiment of the Faraday Museum reiterates a narrative, of what might be considered the “colonial gaze” in which power, expansion, and discovery led to universally positive events through “progressive” and “civilizing” developments of technologies. Such a perspective glorifies the role that science discovery (as new technology) played in cultivating power without accounting for the suffering endured by peoples and ecologies through violence, domination, warfare, and waste.

This research project was initiated by my desire to interrogate the ways that scientific technology was not only co-opted by nation-building and capital interests, but which also required social systems to uphold and maintain these technologies, in the form of social performances, daily practices and spatial-material interactions. Additionally I wanted to draw lines of connection between the ways in which embodied actions and perceptions perpetuated the colonial imagination into colonial-capitalism (as a spatial event), the effect of which was the expansion of a way of seeing and knowing the world. As the colonial imagination disseminated and became enacted through space, on a global scale, other systems of knowledge were obscured, covered over, dominated and spatially pushed out. Yet the myths embedded in such colonial-capital logics have come back to haunt us as warming gasses, toxins, and most importantly to this project, as a way of perceiving energy that is disconnected from its many material, spatial and temporal relationships (laws of entropy). Like a specter, “modern” electrical energy, in the places in which it flows through utility grids, too easily appears as an abundant and immaterial resource; but this is an illusion, an energetic haunting of a dying way of seeing the world as an endless source of material resources. The myth of energy-rich nation building, one that does not attend to the afterlife of materials, no longer holds weight in the time of our climate crisis. The Western (patriarchal and capitalist) notion of man’s ability to control nature,
and man as the only agent in worldmaking, has run its course. The ecological crisis known as the Anthropocene, Plasticene, or Capitalocene makes this clear as the apotheosis of human-made waste, pollution, and global-ecological destabilization promoted by colonial capital logics. (I choose to use the term Capitalocene as for me it most accurately articulates the values and relationships which drive our current social and ecological precarity). While not all peoples have contributed to the ecological crisis—it is an event driven predominantly by developed countries in the western world—we are all bound together in our dependence on Earth and her more-than-human agents of worldmaking. As a way of seeing the world and thus worldmaking, colonialism—now turned into colonial-capitalism—has resulted in, led to, the Capitalocene.

Energy-rich relationships drive our climate crisis; while specialists identify fossil fuels and agricultural practices as the driving forces of our climate crisis, it is worth interrogating the ways that technologies are often framed as providing immanent solutions. Yet, technologies emerge by and through the methods that humans use and interact with them, however when people speak of an electric revolution and energy democracy, the structures of such systems are not always transparent, and colonial logic often finds a place to hide. The struggle to transform how we produce, consume and interact with the afterlife of energy-rich processes is intricately related to social and cultural practices as well as social and ecological justice, as will become ever clearer as the climate crisis advances (Colman 2017; Chapman 2013). How we use and care for technologies, their material, energetic and wasteful states is critical for the Earth’s health and our own; technologies are modes of communication between one another and the Earth.

No one would deny that energy forms a critical aspect of human history and contemporary sociopolitical landscapes, from burning wood to harnessing the power of water, wind, solar, fossil fuels, and atomic reaction (as well as human and animal labor and materiality
– such as whale head oil), the development of civilizations rest on energy resources. Access to reliable energy sources is directly related to concentrations of wealth and notions of “development, modernity, progress,” so that the legacy of energy dependency is not only profoundly entwined in colonial-capitalism but has also played a dominant role in our current climate crisis. Today, as electric transportation, advanced battery technology, and mass digital communication are diversifying and increasing energy needs, questions of “electric sustainability” are critical. It is my argument that decolonizing and re-feminizing perceptions and practices of energy-as-electricity allow us to sense the connections between ourselves, power, and social change. Performing the Electrical examines the ways that electricity, as one form of our energy dependency, performs in nature and in our imaginations, to shed light on the relationships between how energy-as-electricity is perceived and the health of our Earth ecologies, both environmental and social.

The Project

Performing the Electrical is a meditation on energy relationships, materials and the embodied relations of sensing and knowing. My research asks, how can performing with electricity differently (both in our imaginations and our quotidian interactions) change the ways that we produce and consume energy, specifically in the context of the Capitalocene? I argue that encountering alternative possibilities of electrical power through material storytelling, as haptic, tacit and aesthetic sensing-information, is a crucial component for communicating and understanding our current environmental precarity formed around energy consumption. As Harold Wilhite’s research suggests, changing behaviors of consumption is an aspect of, and informed by, cultural practices. Wilhite argues that practice is the mode in which culture
manifests. In terms of energy relations, he identifies how “practice theory” is a critical component to energy relations; in this way *Performing the Electrical* is both about the practices of everyday life, our quotidian interactions with energy-as-electricity, as well as the social performances that influence how we present ourselves and perform social values. Which, in the age of mass production, digital communication, and globalized esthetics, demands ever-escalating energetic resources. Wilhite’s research also identifies that social and performative theoretical approaches were disregarded for the benefit of neoliberal agendas and utilitarian energy expansion. “Practice theory was more or less abandoned in the postmodernist and antimaterialist moves of the 1980’s, which disembodied and dematerialized consumption” (2013, 62). This project attempts to return a performative understanding to energy consumption through embodied sensing, creativity and an aesthetic re-enchantment of human and more-than-human energy-rich collaborations.

The performativities of energy are entangled in the human story; electricity is this story in the present and perhaps the future (Strauss, Rupp, Love 2013, 14). In this dissertation I frame performance as the embodied actions of human perceptions as the diverse social and daily practices of everyday life. I trace the ways in which human perceptions of energy both make the world around us and emerge in response to our place in the world. Importantly this dissertation employs a performative methodology in order to both challenge the “blind spot” of western science, by leveraging the “sheer presence and immediacy of the lived experience” (Frank, Gleiser, Thompson 2019, 3) to challenge the dominance of the written word, and the way in which language and experience are intrinsically related to energy, electricity, knowledge, and ecology. As Karan Barad writes in *Meeting the Universe Halfway*: 
A *performative* understanding of discursive practices challenges the representationalist belief in the power of words to represent preexisting things. Unlike representationalism, which posits us above or outside the world we allegedly merely reflect on, a performative account insists on understanding thinking, observing, and theorizing as practices of engagement with, and as part of, the world in which we have our being [… ]

Performativity, properly construed, is not an invitation to turn everything (including material bodies) into words; on the contrary, performativity is precisely a contestation of the excessive power granted to language to determine what is real. (Barad 2007, 133)

Performance making and material storytelling are also the embodied, tacit, and haptic “intra-actions”, as Barad refers to it, which communicate interdependence. Performance making and material storytelling facilitate encounters with process, materials, and space through different registers of logic. This is not only critical to the ways in which I choose to share this research, but fundamental to the experiential ways in which new knowledge is transmitted. The performative layers of this inquiry deepen my understanding and ability to attend to energy in ontologically pluralistic ways, a provocation I will go onto explore in this project.

*Performing the Electrical* is the process of this research in its entirety. As an interdisciplinary and practice-led research project, this inquiry has developed through iterations of writing, performance-making, site interventions, site visits, technical collaborations, documentation, drawing, video, soundscape and material storytelling. This body of research is an ongoing investigation through writing, creative practice and teaching interests, so that I give equal weight to written knowledge and embodied, maker-centered knowledge. While this research is housed in Performance Studies and Scenographic methodology, the topic of this research can be contextualized as Energy Humanities, a term used to “designate a large body of
energy studies written (mainly) by arts and humanities scholars” (Shin 2018, 19). My inquiry brings scenographic, performance theory and Practice-as-Research (PaR) lenses to the topic of energy. I consider the many manifestations of energy-as-electricity, both as a phenomenon of prehistory and its cultivation as a utility, to its presence in artistic expressions, entrainment, and mass-digital communication. I use the many manifestations of electricity as a lens for viewing the human-environment relationship and the spaces which form as sites and assemblages, as well as intangible and symbolic reflections of the systems of knowledge in which they reside. This project extends a long line of research into energy dependency and electrical infrastructure, as it relates to Power (Hornborg 2013; Hughes 1983; Nye 1990); the intersections between art, materiality and technology (Bennett 2010; Elsenaar & Scha 2002; Zielinski 2006; Parikka 2015); female embodiment present in both the “domestication” of electricity and displays of electricity as an enchanting phenomena (Gooday 2008; Lehman 2009; Nadis 2005); and ontological aspects of embodiment, sensing and transformation (Ahmed 2006; de Certeau 1984; Panagia 2009, Bolt 2016).

Critically I make connections between the ways in which electricity is performed and the impact that electricity has had on the Earth and ecology, as one form of energy dependency. This inquiry is relevant to performance and theater studies as it expands the definition and potential of spatial and scenographic methodology, cultural performances, and practice of everyday life (Hann 2018; Lefebvre 1991; de Certeau 1974). It contributes to dramaturgical and practice-led research that has social and ecological application, and it makes new knowledge through embodied and sensorial processes while raising productive insights on how gender, race, class, and nationhood orient performances of energy. While performance and practice are both relatively familiar concepts, energy is a word that in itself is elusive and hard to define, and
while my inquiry focuses on energy-as-electricity, the two terms are in no way easily defined, categorized or separated.

In their introduction to *Energy Culture* (2013), Strauss, Raupp and Love use the term “energyscape” to define the many manifestations and ontological perceptions of energy. “As the ‘master resource’ energy empowers and transforms the world as it flows in varied forms through nature and social circulation. While energy originates in natural sources, energy politics comprise both cultural and technological issues” (11). That energy can be moving water or the movement of values (money as currency); the ways in which cultures perceive energy are vast, complex, and reflect diverse systems of value. As a preliminary act of expanding notions of energy, technologies, and systems of knowledge, it is useful to remember that the girth of technology spans not just the processes, objects, tools, and machines that come to mediate humans and the world, but also includes other energyscapes such as: traditional and indigenous technologies of sensing environments and working with nature (Nelson 2008; Cajete 2000); technologies of love, as an approach for encountering and building relations between human and more-than-human bodies (Sandoval 2000); and a technology of the imagination – the ability to visualize and explore possibilities in the mind’s eye and to see connections that have yet to materialize (Stengers 2005; Dunn and Raby 2013). These technologies orient us to the world in certain ways, to turn and face in the directions we hope to go, and toward a worldmaking (energyscape) that is beyond the colonial imagination (Ahmed 2006). Energy both responds to diverse forms of technology and at the same time energy powers such technologies. However, it is almost inconceivable to imagine a world in which the sun is not still the “master resource;” every seed planted is a solar powered battery and our human food chain rests upon plants as sunlight-eaters. My research attempts to find footing in an expanded *energyscape* where
technologies, embodiment, and systems of knowledge come together in typically unthought ways and which challenge western perceptions of progress, modernity and energy. I do this by working in an expanded field of scenography, where spaces, atmospheres, objects, and materials are co-constructive of meaning-making.

During the course of this research, my role as a performer/maker has shifted and I have arrived at a notion of performance that is much more centered on collaborations with more-than-human performatives and theatricalities. The eventfulness of vibrant materials in space, as performing-scenographies, is a proposition. It provided me with a new perspective and a practical approach to event making. Scenography is the practice of reading spatial and material relationships concerning human and more-than-human actants (Hann 2018). In an expanded field of scenography, such readings extend to the “real” world. So that reading the assemblages, prop-object-tools, and technologies that form around energy-as-electricity allows me to draw connections between performances and practices of humans and more-than-human actors. How they relate to and express energy-as-electricity is both spaces-forming and spatially responsive. The installation and object making component of this research explores this by decentering performing human bodies with energetic reactions (phenomena of friction, chemistry and electromagnetics), live and pre-recorded sound-scapes, geo-location technology, performing prop-objects, and energy as aesthetics, atmospheres and social performances. Dramaturgically this inquiry uses the visualization of power geometries, a term proposed by Doreen Massey to describe the interconnection between place and globalized systems, which I extend to the more than human world (a topic I explore in-depth in chapter 1). As a devising proposition, power geometries also inform how we might think differently with materials and technologies, to change power, by drawing new relationships into being through social performance and material
storytelling. In this project, the similarities between performance and energy-as-electricity work together to raise the question: what powers power? For these reasons, a scenographic methodology provides a useful lens to consider the ecological crisis in which we find ourselves and the performances, practices and perceptions that co-create the world around us and our understanding of place.

*Performing the Electrical* not only contributes a new perspective of energy and worldmaking (creatively and ecologically) but it is relevant for new fields of ecoscenography. Tanja Beer defines ecoscenography as primarily a practice which “hinges on the awareness that no decision stands on its own: every material choice is intertwined with social, environmental, economic, and political consequences that are far-reaching and capable of having long-term effects” (2016, 490). This is a conscious approach to praxis and extends thinking put forward by notions of *Theatre Ecology* (Kershaw 2007) and *Ecologies of Theatres* (Marranca 1996). However, the idea of energyscapes, as aspects to ecology and performance making, are generally unaccounted for in most discussions of ecoscenography. My research attempts to fill in this gap by complicating the boundaries between human and more-than-human performatives, theatricality, and worldmakings by and through energy as trans-corporeal events. As a space-making inquiry I am not only thinking about electricity and ontological world views of energy as a routes into sustainability, performatives, and our climate crisis, but also how the space-making of creative practices, venues, and creation spaces are ideal sites to activate this inquiry into the future. In this way, ecoscenographic concepts tap into Ric Knowles’s understanding of the *Material Theatre* (2004), as well as the performances, practices, and perceptions that make the world around us, in collaboration with plants, animals, and vibrant materials (Bennett 2010).
Let me return for a moment to the Faraday Museum, to the rooms and displays full of light, glass, metals, minerals, the tiny containers holding Earth chemistry and the many instruments made of copper, gold, silver, zinc, and magnesium. What is presented here are the first tools and assemblages of colonial electronics. These new technologies of observation were made predominantly by white, wealthy, European men (Al-Khalili 2011). Like the men before him who engaged in scientific inquiry - the knowledge Faraday sought and produced was informed by the questions they asked, informed by the ways that they oriented themselves in the world, situated by gender, class, race, cultural traditions, and world views. The systems and assemblage which emerged through such inquiry are inseparable from their contexts of becoming. From scientific lectures and exhibition to entertainment and market-driven spectacles, electrical knowledge was shaped by cultural performances, conveying the tacit and haptic systems of its growth (utility, appliances and new possibilities). But such knowledge also formed through the embodied relations with Earth materials—so that these men in their laboratories and workshops were experimenting with themselves, as different collections of the same stuff—metals, minerals, watery chemistry, matter-energy—so that the questions raised, the objects that helped answer them and the inventions that followed are bound up in the identity and ontologies of the humans who created them.

Where does it get us to think of, for example, Faraday’s embodied relation to the materials of his trade? I believe such a question raises productive tensions regarding the emergence of certain material relations—values of energy-power assemblages, infrastructures, and certain forms of knowledge. When I stood in Faraday’s reconstructed laboratory, I was preoccupied with the imaginings of sand becoming glass, Earth minerals transformed through metallurgy. I wanted to know where the materials came from, how big the holes of material
extraction were then, and how big they are now. I wanted in some way to connect the birth of electrical scientific knowledge with the implication of say, digital communication in place and space. In my mind’s eye, I could almost draw a long line connecting the materials transformed and present in Faraday's workshop to the vast pits of extraction and pollution, of off-gassing energy plants and warming atmosphere—from glass vials to anti-mountains and heaps of electronic toxic waste. So that there is a question of scale, a slippage that I cannot quite fathom between Earth materials, the desiring of human bodies, of knowledge, greed, survival and other diverse systems of relating. This is the trans-corporeal nature of materials and processes as they manifest across human and more than human bodies, in places and in globalized relations. In my mind’s eye, I draw other lines between England and the Americas, between London and the place I grew up, the convergence of the US, Mexico, and Tribal lands. I can almost feel the movement of Earth beneath my feet, the displacement of people by and through the destabilizing events of colonial capitalism and through the values embedded in the development of power, through power.

As a spatial force or affecting scenography we can witness the way bodies and materials perform under the force of electricity and electromagnetic partnerships differently, based on access to power as: illumination, transportation, knowledge (accessible through 24-hour data streaming), capital wealth and political power. In its utilitarian form, the current infrastructure of electricity (based on fossil fuels and mass consumption) allows those of us in “developed countries” to perform in certain ways – our quotidian interaction with electricity is unthought as we plug-in, turn-on, charge-up and easily consume it. Yet it is often hard to locate the power geometries within the discourse of energy production, energy dependency and the benefits which reliable energy afford. At the same time, such unequal circumstances are too easily associated
with capitalism—a thing that simply is. As feminist economic geographers Julie Graham and Katherine Gibson propose, working from sites of familiarity, place, and community can provide ways through the monolithic illusion of globalized capitalism. In the following statement Gibson-Graham explain how we might reframe this force called capitalism:

What if we undertook a simple thought experiment and theorized capitalism not as something large and embracing but as something partial, as one social constituent among many? What if we expelled those conditions of existence—for example, property and law—that have become absorbed within the conception of Capitalism and allowed them their contradictory autonomy, to become conditions of existence not only of capitalism but noncapitalism, to become conditions of capitalism’s nonexistence? What if capitalism were not an entire system of economics or a macrostructure or a mode of production but simply one form of exploitation among many? What if the economy was not a singular but a plural, not homogeneous but heterogenous, not unified but fragmented? What if capitalism were a set of different practices scattered over the landscape that are (for convenience and in violation of difference) often lumped into the same category? If categories like subjectivity and society can undergo a radical rethinking, producing a crisis of individual and social identity where a presumed fixity previously existed, can’t we give capitalism an identity crisis as well? If we did, how would the social terrain appear and how might the “social project” itself be transformed? (1993, 18-19)

Within this extended quote a methodology begins to emerge, one which Gibson-Graham term a “feminist political imaginary” (2006), an approach that I take up in this project. Energy-as-electricity is clearly a valued commodity; my desire is to account for—make more sensible—all that is contained in our energetic relationships, and how valuing the material and performed
elements of energy-as-electricity differently is a critical component to surviving our climate crisis.

*Performing the Electrical* attempts to expand perceptions of energy-as-electricity by doing historiographic work while considering embodied relations of sensing energy, desiring alternative energetic partnerships, and knowing electricity more intimately as a social and ecological intervention. Finally, *Performing the Electrical* asks what the implications are of putting into practice a re-enchantment of electricity through chance encounters with tacit and haptic re-conceptualizations of energy-as-electricity. How would our processes of production, consumption, material relations, utilitarian assemblages (as science and technology) and systems of value change, if electricity were re-feminized and decolonized in both our imaginations and our quotidian interactions? And what are the social and ecological implications of transforming such perceptions?

**Questions of Performing the Electrical**

My research traces the many ways electricity has been performed and the ways in which powers inscribe themselves into spaces, through materials, assemblages, and imaginations. Through traditional and practice-led research I aim to illuminate how artist event-making can intervene and shift systems of knowledge through spatial and material reimagining. As Hiroki Shin points out in *Energy/culture* (2018),

The history of energy exhibitions is a good example of how an aspect of the co-evolution process unfolded in cultural media. Well before it was introduced to the domestic energy market, electricity appeared in expert and popular scientific demonstrations, such as those
If performing electricity in the scientific domain established a western-world-making view of electricity as a utility, how can other forms of performance reframe energy-as-electricity to communicate more evocative and valued relations? How does performance, as both the practices of everyday life and more-than-human agents continue to shape the way we engage with electricity through electrical infrastructure that influences such actions and reflect perceptions, ideologies, and epistemologies? At the same time, how do we make visible and sensible energy-as-electricity, its material relations, and the assemblages which obscure them, to sense more fully the impact these electromagnetic relationships have on Earth, ecology, and atmospheres?

Questions that arise within this inquiry center around the relationship between systems of knowledge such as science, magic, technology, utility and the values inherently privileged in different processes (mass production, profit, and efficiency vs. sustainability, ephemerality, cyclical systems), which leads me to ask:

• What might happen to global energy dependency if electricity is viewed not as an industrial process but as an enchanting elemental phenomenon? And, if not all knowledge resides in language then how can the tacit aspects of energy dependency and alternative economies be communicated through performance-making?

• How do histories of scientific knowledge, religion, empire building, and capitalism affect how electricity was perceived, and commodified? And, in reconsidering these histories, can I locate ontologically transformative and generative possibilities for new electrical relationships?
• How do I provide opportunities for myself and others to encounter electricity in new and different ways? And how do I do this without glorifying new technologies, but rather, the subtle processes, relationships and potential of electrical production?

• In what ways are performance and electricity similar? Both share qualities of live-ness, ephemerality, trans-corporeality; they are both dependent on relationship; both exhibit features of charged atmosphere; and the affective/effectivity of power. Together how can they raise engaging perspectives to the question of, what powers power?

I refer to these questions throughout *Performing the Electrical* as well as return to them directly in Chapter 5 where I attend to them as a place orientation, a methodology proposed by Rachel Hann in *Beyond Scenography* (2018).

What electricity does is not merely a question of biology, physics or phenomenology, nor of industry and utility. Rather, it is a route of inquiry which leads to a deeper understanding of the here and now and the tensions between science, technology and other systems of knowledge which reverberate with meaning and influence how we know the world. The accumulation and transformation of materials into energy, through and by electricity, has and will continue to have, reverberating effect on our planet. Yet, popular debates around energy dependency often focus on technology and innovation, materials and processes. This project brings embodiment and tacit knowledge into the conversation in order to examine the colonial legacy of electricity, and its use as a form of social control, as well as electricity’s many arcs of connection with diverse organic and ontological manifestations of energy and power. This research mobilizes scenographic methodology, performance theory and practice-as-research to bridge social and environmental justice movements, while also creating a platform for creative collaboration and partnership that include the academic community, university teaching initiatives, and a broader public
engagement through creative space-making. My proposition is that artist-crafted events – that combine performative actions in intentional dialogue with sites, assemblages, and material events, which often occur “environmentally” – create new knowledge specifically through their eventfulness. The event is the discursive practice to written, political, social, and geographic theories, the event also animates and expresses how systems of knowledge become spatialized in different and intersecting ways.

Practice-as-Research and Scenographic Methodology

I approach the topic of electricity, a rather large-scale phenomenon, through practice-based, spatial, and embodied sensitivities. Body sensitivities allow forms of knowing to occur that are otherwise dis-attached through scale, such as the distancing of emotions from utilities, or institutions from feelings. As David Nicolini proposes, “practice based sensitivities can be used to address big issues and ‘large-scale phenomena’” (2016, 98). In this way practice-based sensitivities provide an alternative valence for understanding how systems emerge through daily practice, as the formations of social and cultural spaces. Embodied awareness within the practice can aid in connections between emotional, kinesthetics and tacit worlds, bypassing reason and rational judgment, and this is useful concerning large-scale phenomena such as the climate crisis, energy-value systems and globalized powers. Performing the Electrical argues that by practicing space and material relations differently and animating speculative desires in space, space begins to change. As Nicolini articulates: “When practices happen, they become part of the happening: they take up available doing, saying and relating; they modify them; and they leave behind trances that in turn become part of the practice architecture of future activities” (Nicolini 2016, 104). I use practice-based sensitivities in studio laboratories, performance making, and at
geographic sites, through my body and through doing, I set out to know energy-as-electricity more intimately.

As a methodology, scenography contextualizes both the way performance and events occur concerning material setting, environment, and ecology interdependence, and at the same time, the ways that “scenography” as “natural” environments perpetuate, influence and encourage certain performances. Additionally, differing world views or systems of knowledge might create multiple environments out of a single space and place, so that a situation might change depending on different systems of knowledge in which they are perceived. This framing of space and perception is a timely and critical tool for assessing our diverse states of being and values in this time of the Capitalocene.

My research developed through a scenographic methodology which accounts for “successive iterations of making, of working through different graphic media and from two into three dimensions [as] a process of thinking through materials, each iteration subtly transformed and extended by translation into another medium” (Puglisi via McKinney & Iball 2011, 124). I both generate and communicate new knowledge through tacit and haptic encounters. This is not just a translation of material makings but a conscious and documented process into how: ideas, concepts, tacit and embodied knowledge shift and reveal themselves differently through material, aesthetics, and poetics, in palimpsest and iteration. Josline McKinney and Helen Iball define the terms of tacit knowledge and embodiment within scenographic methodologies this way:

Tacit knowledge is developed through experience where ‘we know more than we can tell’ and we are unconsciously aware of things before we can consciously attend to them. Embodied knowledge of this kind may be ‘in communicable’ through words but, nonetheless, affords the basis of “knowledge-creation.” (McKinney & Iball 2011, 119)
My project both forms new knowledge through the intersection of traditional and embodied practice-based research and expresses, communicates, and shares knowledge through tacit and embodied artist and audience relations. I use Barbara Bolt’s outline for assessing “the stakes and research of a Performative Paradigm.” As Bolt writes, “The effects of the performative in art are multi-dimensional—they may be discursive, material consequences and/or affective” (2016, 141). Bolt proposes assessing these effects by a kind of mapping of “the movement in concepts, understandings, methodologies, material practice, affect and sensorial experience that arises in and through the research experience.” This leads to the following questions:

- How did the research shift material practices in the field?
- What methodological shifts occurred through this process?
- What was revealed through the work? What did it do?
- What new concepts emerged through the research?
- Do these new concepts shift understandings and practices in the field and/or in other discursive fields?
- Does the work a/effect its audience aesthetically, kinesthetically or affectively?
- Does the work shift the way we perceive the world? (141)

I respond to these questions as a way of assessing the findings and outcome of this interdisciplinary project. I do this in the final section of this dissertation through a speculative project that combines place orientation, creative space making and space keeping in the US/Mexico borderlands. Scenographically oriented, these questions and their application map the movement of this research from a studio-based praxis to sociopolitical ritual interventions.
Cycles of Development

My practice-led research developed though iterative process that occurred as three distinct cycles. The first cycle of practice-led research began with a series of five scratch studio explorations and mini performances which I called the Magnetic Chamber (MC). These were process-based mini-events that integrated studio-maker knowledge with embodied and spatial (scenographic) relations. These components allowed for an “ecology of the imaginary” to emerge around energy-rich electrical topics. Ecology of the imaginary is a term proposed by Baz Kershaw as a process of thought experiments that make unlikely comparisons to create interconnections via parallels, analogies and homologies between apparently unrelated human performances and natural phenomena on vastly constraining scales, across incommensurable ontologies and disciplines, through contradictory logics (2007, 249).

As practice-led research Magnetic Chambers developed through iterations, each one responding to specific parameters of spatial setting, research topics, material associations, audience configurations, and development opportunities. For example, MC1 focused on materials and movement, so that actions of friction and a live-video feed moved and created effects that worked in tension with aesthetic, atmospheric and language evocations. MC2 explored magic as another way of perceiving energy and electricity. MC3 was simply a duet with a mountain; the mountain had an eye and it watched me, a colonial character, discover the energy-rich properties of its mountain body. While MC4 looked at plants, photosynthesis and worldmaking through processes of energy transference, off gassing and decomposition, MC5 framed all of these previous encounters as mesmerism—sensing through the electrified ether.
The knowledge that I acquired through these events was a sensing of profound interconnection as well as an unfocused awareness of scale and perceptions. As communicative devices these showings also allowed me to explore the relationships between poetic evocations and information, raising questions of different modes of communication. For example I wonder how these events function as experiences for audience, how materials and phenomena communicate in space as atmospheres and as makers, which often lead to the question, how could I make these experiences not descriptions, or recreations, but transformative processes? Magnetic Chamber 1-5 culminate as thematic patterns, and sites of enquiry which I extend in my written research. As Barbara Bolt notes, “while in the scientific quantitative paradigm the validity of research lies in repetition of the same, the performative paradigm operates according to repetition with difference. This is the generative potential of artistic research” (Bolt 2016, 131-132). The first cycle of this PaR research not only allowed me to locate my chapter topics, but each chapter serves as dramaturgical research, both for the next phase of performance making as well as devising structures for ongoing collaboration and development.

The second cycle of development extends writing, research and studio explorations to site visits and a study in hand made batteries. I visited a selection of “energy sites,” where I performed site writing and documentation. These sites included Hoover Dam, Crescent Dunes Solar Energy, Nevada Nuclear waste storage area, and Walter de Maria’s Lightning Fields. I also made a series of handmade batteries that allowed me to physically relate to materials while developing technical (sometimes speculative) skills. In combining maker practice with written research, I had a sensorial understanding both of making energy and what technologies might be useful to the development of my inquiry. I then collaborated with electrical engineers to express energy-as-electricity through different sonic and digital effects. These experiments were
constrained by my desire to generate all the energy needed to power the performance event, and
to do so in an embodied way, while also refraining from purchasing new “stuff” but rather
working with used and found materials.

It is worth noting that during this research process, I became a creative collaborator and
board member with Border Arts Corridor (BAC), a binational arts organization located in the
US/Mexico borderlands. BAC has recently acquired the Grand Theatre, a historic venue built in
1919 to provide entertainment to the workers of the local smelting and mining corporation of
Douglas, Arizona. Today, the Grand Theatre is a shell of its former self, with no roof, no
electricity and in need of structural repair; it is what artists Ivan Puig and Andrés Padilla Domene
term a “modern ruin.” While BAC’s vision is to repurpose the theatre as an open-air creation
space and community venue, questions of how to serve the community and the role of an
“ecologically attuned and decolonized creation space” sit large on our minds. My research
develops parallel to my engagement with this specific site.

The **third cycle of this project** concludes with the completion of my written chapters
(informed and formed through PaR experiments) and a public showing of an additional Magnetic
Chamber (MC6) which I viewed less as a performance than as a “performing scenography,” in
which all the elements of this research assemble in space and time. This showing also functions
as dramaturgical research and traces teaching and workshopping methodology that will develop
in the future (through postdoctoral research and collaborative performance making). The final
cycle acts as a “proposal” for further research and development. As a performing scenography,
this installation brings multiple components of process and research together, including,
materials, objects, energy production, hand-made batteries, text, physical movement, video,
sound effects and a geo-location sound design, in an immersive-installation experience. MC6
will continue to evolve and respond to collaborative and showcasing opportunities. In the fall 2020, I plan to develop and present *Performing the Electrical* at the Grand Theatre in collaboration with Border Arts Corridor. This performance event will develop as a community engagement project putting into practice spatial, material, and energetic devising principles generated during Magnetic Chamber events. Presenting this work at the Grand Theatre is additionally relevant as the building has no electric connections (they were stripped out for their copper in the early 1990s). *Performing the Electrical* as an energy-producing event not only provides the energy needed for presenting the show out of necessity but the showing functions as an intentional provocation to develop the space as a creative venue that functions as a sustainable and decolonized creation space. As a future event that draws new power geometries into being, the aim of this showing is that it also functions as a fundraiser event for structural development to realize these visions.

**Chapters and Acts**

I structure this dissertation into five chapters, which are outlined below. At the beginning of each chapter is documentation of my practice-based inquiries and outcomes. As visual, sonic, and material archive that accompanies this research, my PaR relates to each chapter in obvious and not so obvious ways; what is critical for me to convey is the ways that event-making and tacit encounters informed my writing and how writing returns to inform the event: this is the process of *Performing the Electrical*. The structure of this dissertation, the topics of my chapters, theoretical analysis, and sites of inquiry were arrived at through practice-led research. This is a critical aspect, as the connection between embodied practice, material-spatial relations, ecologies of the imaginary and written research are inseparable forms of knowledge-making-expression.
In Chapter 1, “The Theatricality of Land/scrapes: Gertrude Stein in the Lightning Fields,” I examine Power, knowledge, and geography in relation to energy production. As a material, archeological, and geological investigation, this chapter attempts to bridge how electricity performs in nature with how it is enacted as a utility. I consider the climate crisis as more-than-human but human-caused performances; as multiple theatrical manifestations, electricity performs as prehistoric electricity, as capitalist-colonial land/scrapes and as trans-corporeal relations. How these theatrical events manifest in spaces have the potential to change and diversify perceptions of energy, and to disrupt the UnEarthing a/effects of the Capitalocene.

In Chapter 2, “Assemblages of Power and Ecologies of the Imaginary,” I trace the history of western electrical knowledge as a series of assemblages and exhibitions made predominantly by European white men. I then reconsider this knowledge through notions of gender, orientation, and Sara Ahmed’s Queer Phenomenology (2006) to propose alternative energetic assemblages as proposed in the artistic and speculative work of selected female artists. While there is an obvious archive of artists who work with electricity and energy, I locate more ontological questions through the work of Remedios Varo, Alice Aycock, Tania Candiani, Cassie Meador and Hito Steyerl. This chapter also works as a compass for the development of my project, to help orientate me and the work towards partnerships and assemblages that draw new and more desirable power geometries into being.

In Chapter 3, “Batteries and Mobile Energy: When Electricity is Racist,” I use four image archives or digital-scenographies to expand upon the relationships between batteries, mobility and power. This is the creepy side of electricity that makes peoples, communities and geographies subjects of power. These digital-scenographic sites reflect different forms of control and domination as well as acts of the subjunctive, the what-if. I consider Hitler’s speech at a
dynamo factory in Berlin and draw lines of connection (power geometries) between white supremacy, colonial technologies, and how dynamos and hydroelectric dams facilitated these ideologies into the Americas. I consider Frantz Fanon’s “This is the Voice of Algeria,” and the nexus between radios, batteries, and transforming technologies. I then look at the iconic footage of The Wonder Factory, a battery-maker factory, and of a female worker during the May 1968 Paris uprising. I use Rosi Braidotti’s notion of the female nomad to examine gender, class, subjects, and embodied sensing. And finally, I consider a future site by imagining the space that might form through increased lithium-ion battery production and flamingo extinction; this is a speculative site examined through colors and frequencies. I then return to Fanon’s notion of a dying colonialism to pull out the embodied features that helped decolonize communication technologies during the Algerian fight for independence.

In Chapter 4, “Imagination and Speculative Space-Making: Mesmeric Acts to Re-Enchant Electricity,” I form my final provocation, that mesmerism, as an embodied form of sensing and relating to the energetic world, is a way to heal the social and environmental precarity that grows through energy dependency and future electrical relations. I reframe mesmerism not as that proposed by Anton Mesmer in the 1700s but as a form of Earth-care that functions in and through energy relations. The features of mesmeric Earth care include interrogating consumption practices in the West with notions of the erotic (as defined by Audre Lorde), difference, and embodied-intersectional knowledge. This chapter explores the aesthetics of such changes to interrogate New Age/ neoliberal modes of sustainability within globalized inequalities. I ask, how can performing mesmeric healing be a way to communicate new energetic relationships aesthetically, which diversify how energy-as-electricity is enacted through feminized values, relations, and systems?
In a concluding Epilogue I return to the original questions of this project and articulate the ways in which ritualistic event-making and speculative performance-making function as ecological interventions in place. In responding to these original questions, I also articulate the ways in which I discovered and responded to a broadening of ontological plurality of energy-as-electricity: generated, communicated and functioning as emergent acts of new knowledge in both practice and written research. I use the Grand Theatre in Douglas Arizona as a geographic site to help illustrate my propositions as spatial interventions. The Grand is also the site of a future presentation of this work; this concluding chapter also opens the door for future development of this research.

**Events, Inventions, and Interventions**

In closing, I would like to say something about event-making as it relates to inventions and interventions. These terms share the Latin root word, venīer, meaning *to come*, such as, to come into being. In this project, I often use the term event to center, with equal importance, multiple elements of expression such as: space, site, materials, light, sound, atmosphere, timing, context, aesthetics, etc. Artist event-making is an expression of the conceptual, spatial, and material, the combination of which brings something—the event—into being. The particular features of event and eventfulness have been taken up by many a theorist. Deleuze and Guattari (1988) write about thoughts of expression as events, a concept extended by Brian Massumi, who applies these concepts to aspects of the embodiment, such as movement, affect and sensation:

> The body, fresh in throes of expression, incarnates not an already-formed system but a modification—a change. Expression is an event. The ideological question of how to think open a space for change in a grid-locked positional system is turned on its head. The
task for a theory of expression is how to account for stability of form, given event. The key is to remember that ‘emergence, mutation, change affect composing forces, not composed forms.’ (Massumi 2002, xvii)

Massumi’s observations help orientate the way events work in this project and express a way to articulate spatial changes through events. While scientific events, as inventions, are well recorded, it is because they are part of dominant history keeping. Other events maintain other spaces, such as the space formed and maintained through ancient knowledge, spirituality, imagination, art, magic, diverse cosmologies, rituals, cultural tradition, and folk practices. Such practices share a kind of imagined spatiality, yet so too does mathematics and western science, so that space and knowledge are intricately linked and extend into the imaginary, hypothetical and intangible, as states of consciousness. Christopher G. White, a professor of religion, explores the spatial nature shared between science and religion as diverse ontological manifestations of events and inventions. As White notes, intangible spaces are features of math, science, religion and creative work. In this way imagined spaces are a part of “real” space as they comprise different layers of meaning and knowledge making. So that “imaginative mediations” open up ontological plurality within systems of knowledge that would otherwise exclude such possibilities (2018,11). White cites the notion of the fourth-dimension in quantum physics and science fiction as a spatial imaging that makes possible new knowledge; the concept of alternative dimensions allows western science to encounter non-rationalized systems of belief as an “intuition” of other worlds (46). Similarly, Lefebvre and then Edward Soja proposed the idea of a “third” space to articulate the ways in which spatial imaginations are potentially transformative. According to Soja the Thirdspace (as he calls it) is: “simultaneously material-and-metaphorical, real-and-imagined, concretely grounded in spatial practices yet also
represented in literary and aesthetic imagery” (Soja via McKinney & Iball 2011, 128). As a space for nonverbal information, this “third” space offers a “different way of thinking and a terrain of social struggle and potential emancipation” (McKinney & Iball 2011, 128). Interestingly the word intervention, meaning to come between, as in an event that separates, a juncture or a rupture, implies a change in space after its occurrence. Interventions, like inventions, imply a shift in the structuring of knowledge in which the next stage or space unfolds, all of which constitute the eventfulness of new, other, and chance encounters in space.

I draw lines of connection between electricity and event-making as forms of expression that are inseparable from the circumstances which produce them. Performance as event-making is an ephemeral practice and thus a form of live and immediate experience, an act of creativity and imagination that makes spatial and material expressions of the present. This feature makes performance praxis and theory a problematic site to analyze and categorize. Energy-as-electricity is also an ephemeral event, its tendency towards rapid entropy also making it difficult to place in any single field of inquiry (Tentmann 2018, 2). In tracing the iconic events and inventions of electrical knowledge—their performatives along with the energetic events of our climate crisis—I hope to expand perceptions of our embodied and trans-corporal relationships to energy-as-electricity, so that we might sense its presence with greater intention for social and ecological health.

This inquiry is informed and at times haunted by my own experience of living in an arid climate. I experience climate crisis and energy dependency in direct relation to water, as an increasingly limited resource as well as the tensions that arise when people migrate because of social and environmental precarity. On a summer evening when temperatures have dropped to the low hundreds, I stand in my backyard and listen to energy-as-electricity being consumed. It is
a low hum of air conditioning units, evaporative-coolers, and fans, the energy needed to move air and chemistry to make it cool. I hear freeways, helicopters, and jet planes, the proximity of army bases and borderlands bringing a particular soundscape to the place I live. I cannot disconnect these sounds from the way I live. At rest it is so easy to be a subject of easily consuming electric assemblages, to participate, simply through presence in border rhetoric that allows resources to migrate but not people, to consume in a way that I know to close the future of myself and others. The interventions I long for are directly related to the way I experience place, to a sensing of the instability of a place I call home. My intervention is to make apparent the lines that connect me to the world through my everyday activities, to make sensible the materials, energies and atmospheres that connect us all to one another and to the Earth. As I attempt to think through what feels like a deeply somber moment in political and ecological time, I identify how certain power-geometries close futures: they narrow the future to single lines of progress, industrialization, and economies. But such geometries are formed by and through lines of connection that have many other possibilities. Through alternate performances, practices and spatial events existing lines of power can be refracted to reveal a spectrum of other ways to perceive and respond to events, inventions, and interventions with generative potential. This research is an ongoing investigation: what it does is unstable, responsive to space, materials, atmospheres and opportunities to transform. There are many places in this research that are without language ... sometimes there is nothing else to say, it is about the feeling of disappearing, of losing form, of being not singular and of desiring deeply other ways of being together in the world.

1 Songs for mesmeric rituals can be sung at energy sites, including power plants, excavation sites, near pylons and transformers and directed to wall sockets and batteries. In Magnetic Chamber studio sessions, these lyrics are sometimes spoken by performers, or listened to as prerecorded text and geolocation audio files. Instrumental 1
was written for this project by Gabriel Sullivan and Geoffrey Hidalgo. Instrumental 2 was written for this project by Sean Rogers. Links to Songs:
Instrumental 1 - https://drive.google.com/file/d/1L8m2U8NI5iMoNCjzQWajkdr01pbe1e/view?usp=sharing
Instrumental 2 - https://drive.google.com/file/d/1VmovVziwJdtpqF2ScQFdawvR0KMYQyK/view?usp=sharing

2 I visited the Royal Institute in July 2018. My observations reflect the exhibition organization and texts from this time.

3 The notion of colonial capitalism is influenced by the work of Walter Mignolo, *The Idea of Latin America* (2005). Ideas and relationships which I address further in chapter 1.

4 In *The Production of Space* (1974), Henri Lefebvre proposes that three components—energy, space, and time—make up what we might call a reality of the material world, a trinity that forms the woven textures that together create the patterns of histories and futures. Lefebvre states that our knowledge of the material world (through science or other cosmological means) is comprised of theories and concepts that implicitly contain “energy, space, time [. . .] — [that] can neither be conflated or separated from one another” (1974, 12). According to Lefebvre, energy is a spatial event; its deployment occurs in space, from the very small to the very large. At the same time, Lefebvre seems to draw the connection between what happens in time and space as a synonymous relationship between “reality” and “energy.” He writes, “space has no ‘reality’ without the energy that is deployed within it” (1974, 13). For Lefebvre energy is many things, a field of action, a basis for action, an event, a performance, derived from raw materials, a product and a constituent of socio-cultural space. While Lefebvre is not speaking about energy as fossil fuels, electricity or nuclear power, the perception of energy as something that arises through materials and values, the specific type of energy (ontological or ideological) that views materials as sources of energy, in different ways, are still co-constructive in reality making. Since the time of Lefebvre’s writing, I wonder in what ways the accumulation of extreme waste and the ever-growing demand for electrical energy (manufacturing, lifestyle, transportation, and digital platforms) changes this concept of energy, makes it glow, radiate even, with new meaning. According to Lefebvrean logic, a transformation of the way energy is enacted in space would amount to a transformation of reality itself.

5 How does this framing of energy draw productive connections to contemporary discourse on energy dependency, space making, space keeping, and practice-based interventions? Such questions are activated in my PaR material and spatial inquiries. I draw lines of connection between energy and “reality” in normally unthought ways so that we might sense, feel and know differently energy as it manifests all around us. So that we may see more critically the power geometries which are drawn, as process and practices that are not of all realities, but the decisions we make in producing worlds around us.

6 Another critical attribute of a scenographic methodology as Lavery and Finburgh argue in *Rethinking the Theatre of the Absurd: Ecology, the Environment and the Greening of the Modern Stage* (2015) is that it inverts canonical Aristotelian logic, so that spatial and material qualities provide meaning above and beyond anthropocentric actions. Prioritizing the contextual agency of space and materials is both critical for assessing Cartesian perceptions of inert materials, and gives weight to what is experienced beyond language, plot, and characters, which allows for other narrative structures to emerge above and beyond those driven by human actions. Additionally, agency of materials, plants, and animals, whose language we have yet to decipher, or which will always remain a mystery, always enchanting, undermines Aristotle who states, “man alone is endowed with the power of speech” (42). The spatial and material (scenographic) features of an event are also where meaning is conveyed; it is the domain of the phenomenological.

7 I use the term *transcorporeal* as does Stacy Alaimo (2010) to denote the movement across different bodies, from human bodies to more-than-human ones.

As Peggy Phelan notes, the live event of performance can only ever be that moment of their activation, so that their documentation and archive, become separate but parallel works (Phalen via Diana Taylor 2003, 5).
Fig. 3. TransR and ReTrans (without their sonic shadows) in the *Lightning Fields* (Lightning rods have been erased in Photoshop in order to meet the Dia Art Foundation copyright guidelines). Site visit to Walter de Maria’s *Lightning Fields*.

Photo credit: Geneva Foster Gluck.
Two figures stand between the metal spikes. They are somehow feminine in form and somehow also the same person. If you squint your eyes you can almost see the way the space around them quivers, like heat waves distorting a distant landscape, the ether air ripples as it transmits and receives between the two bodies, they communicate telepathically. Gertrude Stein named them Marguerite Ida and Helena Annabel, but I call them transmitter-receiver and receiver-transmitter, TransR and ReTrans for short, and they stand somewhere within Walter de Maria’s Lightning Fields. In the distance beyond them the line of a coyote moves like a parallel dash below the horizon; it is almost like Faustus’s dog, only it is not a poodle, and it belongs to no one other than the land. TransR and ReTrans face towards the small wood cabin, the sun arches over them from right to left. It is not yet hot enough for the snakes to come out from under their earthen dens.

The rods of the Lightning Field are made of steel, sunk deep into the Earth, grounded even deeper by copper wires that act as conductive roots to draw the potential lightning strikes down, submerging, dispersing and earthing. Like Earth body acupuncture, the rods seem to map out a rectangle of meridians that connect the Earth’s interior to the sky. At times they appear like tent poles to be holding up the air so that the blue line drapes across each tip, the bottom edge of the sky fabric gathering to create the illusion of mountains and horizon, but really this is just where Earth and sky meet a space suspended. The height of the lightning rods extends through the space that is Earth and air, they connect the skins of each, energetically, they are atmospheric bridges to alternative dimensions. The futuristic, monolithic, abstract, pseudo-industrial Lightning Field sits in tension with the 17th century cabin, time swirls up between them like a dust devil and in the center stand the two women.

- Working text from Magnetic Chambers and site-writing from The Lightning Fields.
Fig. 4. Video still, walking a Land/scrape. As evolving figures in this project TransR and ReTrans, came to have “shadows”, sound costumes that use piezo crystals, amplification, radio waves, and geolocation technology to sonically express land/scrapes. TransR and ReTrans, appear as twin characters and object installations. During the course of this project these characters evolved to take on the form of dinosaur shadows, in this form they communicate hauntings, extinctions, fossilized light and invisible energy information. They are associated with time running out (digital clocks that tell time backwards), they have pink hands that sometimes become flamingo legs, and at other times their hands move metals magnetically. (Piezo amplification technology developed in collaboration with Thøger Tents Lund). Filmed at a gravel pit in Tucson, Arizona. Photo credit: Cáit NiSiomon
I am a dinosaur. I will be extinct someday. I will decompose into dark time, deep vast electromagnetic space, solar-flair timeless atomic.

When I was a young girl, I believed that the mountains were sleeping dinosaurs. And if I watched the mountains close enough, I could see them breathe, the subtle rise and fall of sleep breathing, because the dinosaurs were sleeping. A dreamy hibernation, begun so long ago, a geological lullaby, warm milk of lava and sulfur steam and they drifted off to sleep. The pillows of jungle plant and fern foliage have decomposed, melted away into gooey black pools, but the dinosaurs still sleep.

In the mountains there are bodies. Sleeping prehistory, whose mass makes the contours of the mountain, and when they awake, the earthen crust will crumble and they will walk away, the mountains will be gone, but the dinosaurs will be awake. They glide across land/scrapes, their invisible bodies leaving marks in the land, changing atmospheres and chemistry. They are the specters of power, the forces, movement, and afterlife of energy-rich materials, the ghosts of fossilized light. They are the beasts of burden of a mass hypnosis and they make sensible extinctions - past and future; the messengers of unEarthing affects and effects.

- Show text from Magnetic Chamber 1

Figs. 5 – 7 clockwise: The components of Land/scaper –“Shadows” armature with sound equipment housed in heads and tails with clocks that run backwards, Capitalocene time (eventually to run from energy generated by walking a land/scrape); unknown image source depicting radio waves – transmission and reception, pink gloved hands that hold iron shavings and magnets. Photo credit: Geneva Foster Gluck
When Gertrude Stein wrote *Dr. Faustus Lights the Lights* in 1938, she was moving away from the stylistic approach of “Landscape theatre” – the term she gave to her purposefully anti-dramatic works. For Stein the notion of landscape was a way of describing a play, as an event, in which space, atmosphere, sound, and patterns (repetition) bypassed human centered narratives. The meaning of such plays was in the experience, the immersive quality of time and phenomena. Stein was moving towards a stylistic approach she termed *geographic*, which encompassed Stein's theoretical works. Bonnie Marranca, an ecological theatre scholar, describes Stein’s stylistic writing transition as: “The play inside the frame (landscape) and the landmass outside it (geography) are different spaces of consciousness, but each is a site/sight of knowledge” (1996, 16). While writing *Dr. Faustus Lights the Lights*, Stein was also thinking around a constellation of ideas; she was trying to understand something about “guilty” and “innocent” knowledge, and the “biblical” nature of this inquiry which was instigated by her own encounter with being bit by a snake. As Shirley Neuman notes in “Would a viper have stung her if she had only had one name?” (1988), Stein was thinking about knowledge in relation to power and patriarchy and found the story of Faustus to be useful. The work was completed the same year that Hitler annexed Austria into fascist Germany, so corrupt knowledge as propaganda and political theatre was also ripe in the air. Stein’s interpretation of the Faustus story uses electrified lighting as a metaphor for knowledge; there is also a snake and two women—Marguerite Ida and Helena Annabel, the same woman with two names and two bodies. Perhaps this was a way to represent
knowledge and avoid the weight of such knowledge resting on any one woman, one individual, but rather the collective experience of guilt, innocence, and certain types of knowledge. The creatures of the play reinforce this duality: the snake reminds us of fundamental knowledge—perhaps also known as curiosity and critical theory—to bite into, ingest, and become it. (This was not, however, as I think both Stein and Eve would argue, original sin.) And the dog reminds us of the way knowledge, sacred, deep, and magical, becomes domesticated: loyalty sometimes confused for survival, or simply a companion to walk within a time called history.

Walter de Maria completed the Lightning Fields in 1977. This now iconic American land-art site is a work in-and-of Landscape. De Maria was thinking about space, materials, and power as a kind of landscape of perception, the way that form and formations allowed for dimensional layers within space, time and geographic landscape, as a “sensory interface to ecological concepts” (Nisbet 2016). This dialectical approach to surface (landscape) and phenomena of intra-action (air, sky, deep Earth) communicates power potential as perceptions of space and the sensing experience. De Maria chose the arid lands of New Mexico for his meditation on lightning and electrical potential both for its quality of space and also for its proximity to other sites of energetic power. From colonial occupation to the militarized testing site of nuclear energy, specifically, the atomic test sites of New Mexico, the impact of globalized war within the late twentieth century, is ironically conceptualized in multiple framings of the American Southwest and in historical events still present in space, like Manifest Destiny, colonial-capitalist land occupation, and “open” space for military testing. De Maria’s place-orientation is communicative of such events; it is indicative of the power dynamic created between
land, power, and aggressive colonial knowledge systems. Yet, de Maria’s work also asks us to perceive power in other ways, to anticipate how it might move between and through the spaces that are created as an intervention into power-potential and as energetic relationships.

While neither Stein nor de Maria were explicitly focused on electricity, their two projects face towards the intricate connections between space and power, language and material information as landscapes, with which electrical energy is deeply entwined. Energy, specifically electrical energies, hold bodies and land in particular geometries—relations of transmitting and receiving and palimpsests of knowledge and power. For Stein, electric illumination and knowledge metaphorically cut like a double-edged blade. Faustus’s command of electric light fails to provide beyond a cold white light. For de Maria, lightning as an ultimate electrical power can be made present in its potential. Its presence (lightning and power) is all around us; to see and know it is a question of perception and experience. The site, space, field and landscape of both these works, communicate power, as potential through experience and spatial-material attunement.9

I introduce this section with the work of Stein and de Maria and their respective projects involving electricity to underscore the relationships between landscape, power and knowledge and experiential encounters which shift perceptions of energy, specifically concerning the values that form in and through Earth materials, more-than-human actors and the ways human mobilize subjective perceptions in space. My use of Stein’s play and the decision to make Marguerite Ida and Helena Annabel (who I rename as, TransR and ReTrans)10 present in my practice-led research, was at first an aesthetic desire. I wanted to superimpose text (Stein) and site (de Maria), both themed around
electrical events, knowledge, power, and reinterpreted notions of landscape: Stein through her use of language and Maria through an interplay between Earthwork, material, and site. But also, I wanted to extend the critical theory inherent in these respective creative works to the topic of my research—in which colonial and guilty knowledge perpetuate throughout aggressive utilitarian energy systems (energy generated by fossil fuels and rapid disposability), of which electricity is one feature. What I sense from the works of Stein and Maria, and which I hope to extend forward in this project is the intersection of knowledge and perception emergent through performance—as the actions, practices, and worldmaking events of human and more-than-human actors. Similar to how Stein and Maria’s works transform perception through immersive experience, my project attempts to shift how we perceive energy-as-electricity through experiential encounters and material storytelling.

Stein’s interpretation of the Faust play focuses on the paradox of how knowledge is transferred (both in the play and as a communicative device as explored in her definition of the play as a landscape). In short, Faustus trades in his soul for electric knowledge, while Marguerite Ida and Helena Annabel are given that same knowledge as a gift, an act of generosity from Faustus who doesn’t want to see them die from their snake bite, which is perhaps a third kind of knowledge transference of a toxicity-defense system. It is Faustus’s act of saving, of healing and caring for the women which sets up a dichotomy of guilty knowledge—the knowledge Faustus holds because he has sold his soul to the devil and the knowledge—what Marguerite Ida and Helena Annabel learn, gain or acquire by intra-acting and responding to more-than-human agents. While notions of knowledge and corruption are not directly related to energy-as-electricity, there is a
thematic connection between the role that technology plays in muddying the distinction between the two: the division between the nature of knowing and how that knowledge is put into action. In moving this narrative to the Lightning Fields, I want to ask questions about power, knowledge, and land; about the spaces which are created through them and the material, more-than-human agents who are, forever, worldmaking.

**Prehistoric Electricity and Theatrical Materiality**

Let me for a moment consider the theatricality of the more-than-human world, which the theatricality of electricity plays out in and through land as a performance that began long ago in deep geological time. Prehistoric electricity was present in the Earth’s formation as electromagnetic forces aligned planets, stars, sun, and moon. The slow birth of Earth topographies sculpted by electromagnetic weather systems as winds and waters carved deep ravines and collected into deep oceans. Prehistoric electrics are the more-than-human performances, processes and relationships of friction, chemistry, and magnetics—electromagnetic principles that emerge and interact with Earth materials and atmospheres.

Energy-as-electricity has always participated in worldmaking processes, phenomena and events. From solar light to rainbows and aurora borealis, to the unseen, invisible colors of radiation, infrared, radio, and microwaves and the invisible forces of gravity and magnetics; all theatrical events of the electromagnetic spectrum. Such prehistoric electromagnetic effects are perceived differently by a million sets of eyes, of animals, insects and other sensing organisms. “Animal electrics,” once thought to be the superstitious residual of pre-Enlightenment, now describes the minute electrical signals
that course across the circuitry of neurons and nervous systems. As electrical signals our thoughts, behavior, knowledge, and communications course along tiny rivers of salty water, the neural pathways upon which processes of becoming travel. Our primitive compasses made of blood, bone, and minerals, orient and move us. Such magnetic principles are the earthing of us; the way elemental materials infuse geological and geographical places in us as “biogenic magnetic minerals,” (Pósfai and Dunin-Borkowski 2009). We are all interdependent, interrelated, connected through the electrified ether. Together we sense movement and friction, chemistry and invisible electromagnetic force differently, the theatricality of entangled, elemental, energetic worldmaking.

Yet, the theatricality of prehistoric electricity has taken on new and other features through human cultivation and bio(electric)-mimicry of these natural phenomena. Earth topographies now punctuated by vast monuments to energy and electricity in the form of mines, dams, electrical grids, solar panels, wind turbines, coal, gas, and nuclear power plants. Lines of power manifest as cables and wires, as well as the invisible digital exchange of data and communication, resulting in energy-hungry clouds of data storage and processing power. Electrical production has resulted in sites of radioactive meltdowns (Chernobyl, Three Mile Island, and Fukushima, to name only three). The production and obsolescence of energy-rich assemblages form exaggerated, aggressive and absurdly theatrical new and toxic ecologies, from the deep holes in the Earth that produce unexpected chemistries and contaminated aquifers to electronic waste that accumulates into islands of black-market trade and leaking toxins, that then accumulate in human and more-than-human bodies as micro-contaminations, all of which contribute to and manifest as an increasingly unstable existence on Earth.
I use the notion of theatricality as a way to hone in on the performative aspects of material and energy dependency. I want to draw some kind of proportional connections between the way humans perceive energy and the ways we diversely interact with the world around us. The term *theatricality* once referred explicitly to events on a stage, and within a theatre context. Over time the concept has evolved to span genres and define a quality of presence, an aesthetic of being that is exaggerated and excessively dramatic; like the way, some humans continue to behave in patterns and through certain relationships, that limit their future on a stable Earth.

The theatricality of the material and an *intra-active* world (a term borrowed from Karen Barad 2010) is a way to frame energy-rich relationships and environment. I believe there is much of the theatrical paradigm as it relates to ecological destabilization that calls for more apparent forms of interrogation. As Josette Féral and Ronald P. Bermingham write in *The Specificity of Theatrical Language*,

More than a property with analyzable characteristics, theatricality seems to be a process that has to do with the ‘gaze’ that postulates and creates a distinct virtual space belonging to the other, from which fiction can emerge (2002, 97).

In what ways does the “gaze” of theatricality function as a way of seeing the world and of worldmaking, as it relates to these extreme times? This is an epistemological question of how we diversely know the world, which accounts for not just optical functions but other sensed ways of knowing the world around us. Which, in the case of the Capitalocene include performances of denial, power, and the value of outcome over process. In such a space, objects and material wealth seem to overpower instinct and sensing, the experiential and embodied, so that a/effects of seeing and knowing the world in certain
ways, allow certain fictions to emerge. Specifically, those of “developed” and “wealthy” consumptive societies who fictionalize their ability to continue to behave as they have in the past. As extravagant gestures that things can go on as they have, the theatricality is the denial, the inability to change with elegant urgency, it is a way to describe the entangled performances of energy, power, and a precarious future.

Returning to the notion of prehistoric electrics and material theatricality, the question arises, who is there to gaze? I want to suggest that within this question resides the transformative potential of thinking of more-than-human actors in the Theatrum Mundi. The material, spatial, and atmospheric are forms of expression, of themselves; they are not only ecological, but they are where experiential event occurs. Can materials and spaces be an audience for one another? Why not? – they respond to one another. I make this point to reiterate how we sense space as a necessary component to how we think and intra-act with energy. Prehistoric theatricality is scenographic; it consists of performing objects and materials in space, as those elements which have always been worldmaking. That humans choose to produce gasses that make a world we cannot live in is the ultimate theatrical event of human and more-than-human collaborations. Yet as the scenographic methodology argues – spaces and actions are inherently linked one e/affecting the other. The energy of worldmaking that occurs through vibrant materials in deep time is a spectacle which we struggle to comprehend because of scale and time-scape, now compounded by the rate in which we accelerate our undoing. But there are other ways to see and know the world in which the vibrancy of materials is anticipated and known, their reciprocity a feature of their being. Western epistemologies deny such perspective, while for example, indigenous knowledge systems hold this as fundamental.
Ecology and scenography alike iterate the interconnectivity of space, action, and perception, as emergent agents of a theatrical more-than-human world.

Aggressive electrical power aggravates, amplifies and accelerates the features of what has come to be termed the Anthropocene by and through the production of plastics (plastic resin is one of the most energy-consumptive products, along with aluminum, sometimes called liquid electricity), automated industry, refrigeration, digital energy demands and abundant waste. As Heather Davis and Etienne Turpin argue in Art in the Anthropocene, “the Anthropocene is primarily a sensorial phenomenon: the experience of living in an increasingly diminished and toxic world” (2015, 3). I choose to work with the term Capitalocene, as it speaks more specifically to those actions, behaviors, and peoples who are part of and participate in capitalist ontologies and epistemologies. Further, it draws attention to those peoples who have not participated in or benefitted from capitalism but who will nonetheless endure the consequences of climate crisis caused by capitalist actions, incentives, and values. Yet, as prehistoric electricity reminds us, electricity can be produced in a multitude of ways across a spectrum of bodies. And here, a peculiar struggle for scale emerges: how can it be that the invisible and immaterial “data cloud” are contributing to the erasure of actual mountains? How can it be that the fleeting and ephemeral light that we read by, the music which we listen to and the radio broadcast or podcasts which we stream, are burrowing into the ground, contaminating and consuming Earth? And that the fleeting material objects, experience, and movements which we desire and then discard, motivate industrial production and profit making that destabilize global ecologies? It is not that such events are inherent to electrical production; prehistoric electrics help us know this. Instead, it is the choices humans
make, what we value, the material relationships we bring into being, and the ways we practice and perceive energy-as-electricity which results in devastating ecological repercussions. That we continue to make our electricity from fossil fuels is greed theatrics, extinction theatrics, and simply cruel absurdity.

In *Rethinking Theatre of the Absurd*, Carl Lavery and Clare Finburgh attend to “greening the modern stage” by tracing the relationship between text and spatial design. They care about the ways that absurdist theatre, which was often a commentary on the precarious social, political and ecological events of the mid-twentieth century, expressed these commentaries through the relationships of spatial, atmospheric and scenographic elements that coexisted with textual scripts, but have until now been relatively unexamined. Lavery and Finburgh raise the question “Where is there to go when the teleological horizon of ‘progress’ has resulted in ecological catastrophe? What is one to do when any attempt to effect change might make things worse through production of dangerous, uncontrollable feedback?” (2015, 37). For the authors, doing historiographic work into the ways in which space, setting and environment provide sensual information above and beyond text, is a clue for considering how we (culturally and individually) see and know the world in times of crisis. Considering spatial events – as setting for performances in the real world helps us understand in more complex and pluralistic ways, the relationships between perception, material, and atmospheres – as the making of the climate crisis through human and more-than-human performatives.

While bio-electrical mimicry might have informed the technological development of utilitarian energy and electrics, we have yet to mimic the ecological-worldmaking interconnection of energy, as cyclical and interdependent processes. Prehistoric
electricity helps remind us of this: the worldmaking relationships of off-gassing, chemistry, temperature, and time. Prehistoric electrics set the stage for so much more exciting forms of mimesis, for sustainable and energetic human-environment relationship and perceptions of energy that are full of delicate potential. Our performative responses to the climate crisis can be theorized, written about, and used to interrogate what has become “normal” modes of energetic consumption, but social performances and everyday practices must also be considered as part of the solution. As energy historian Thomas Hughes notes, we need to better understand the ways that, “‘the conquest of the earth’ by electricity, [is] one of those notable phenomena that have ‘greater possibilities of shaping our immediate future than all the political events combined” (Hughes quoting Marc Bloch, quoting Paul Valéry 1993, 5). As my inquiry will go on to suggest, the perception of modern electrical energy is a long-crafted socializing project, maintained through normalized, yet unstable, relationships that perpetuates colonial and capital dominance into un-Earthed futures. This instability is an entry point to disrupt normative networks of power, to transform power. Tracing electrical relationships becomes a methodology to view how systems of knowledge, ideologies, and ways of seeing the world draw that world into being, performatively and with dark theatrical implications.

**The Capitalist-Colonial Gaze: Land/Scapes and Land/Scrape**

How we individually and diversely practice and perform energy-as-electricity in a globalized world takes on radically different features. Yet it is hard to deny that centralized power grids represent and are relational to “power.” This is observable by satellite images of Earth in the night sky which illustrate how wealth and the distribution
of electrical energy are geographically linked and can be seen all the way from outer space (Hornborg 2013, 45). The idea that wealth and electric infrastructure correspond is also made apparent by the fact that electric energy produced by small and sustainable systems are often considered primarily as exports to “developing” countries, for peoples who do not have access to centralized electrical grids. One only has to begin to wonder why such “alternative” utilities, such as gravity powered lights, small affordable solar panels, and bio-waste energy are not being actively integrated into “developed” infrastructures, to be reminded of the tensions between conservation and colonial capitalism. Abundant and “efficient” electricity makes people, communities and nations, subjects to power—politically and capitally (through money or other systems of collective value). Access to electricity allows some of us to plug in, charge up and switch on, while others of us lose traditional lands and livelihoods, and are displaced by powers that in part owe their power to efficient electrical consumption; such relationships between environments and social norms create diverse performance of energy consumption.

According to energy historians, human cultivation of electricity represents a “modern” turn in energy relations that began in the late 1800s, when energy production went from organic to mineral-based materials (Shin 2018, 2; Hughes 1993,1). As electricity continues to modernize and new sustainable technologies and processes form viable new relations that can replace fossil fuels, the most significant challenge for living sustainably is not a technological invention; instead, it is human behavior. How we consume energy-as-electricity, the material, objects, and processes we choose to relate to, ultimately determine what is of value within systems of energy production and material
relations—to waste less, use less and to relate to energy-as-electricity differently. Here I want to pause for a moment to examine the relationship between energy-as-electricity and modernity (of which concepts of futurity and utopianism are also often associated), and the ways that social performances and daily practices mobilized modernity into spatial land relations as extensions of colonial logic and power.

The notion of modernity is not a neutral concept, nor an inevitable point in time; much of what makes something or someone modern is inseparable from capital if not colonial domination. The integration of electricity in the 20th century was both a sign of modernity and raised new questions about the “power and freedom” of the modern human (Colman 2017, 6). Such rhetoric can be observed in global relations and “developing” countries in response to their energy resources and infrastructures. But, is this a spatial, behavioral, or temporal assessment? What modernity signifies is not always clear but more critically how it is used as a rationale to embrace capitalism is critical to note. Depesh Chakabarite raises an interesting component to these linear notions of futurity, by pointing towards how ideas of freedom also work dialogically with such temporal projections. As Chakabarite points out, the actions which have contributed to Earth “sliding down the hole” of what is termed the Anthropocene cannot continue. A change in how we perform in and with our environment is no longer a debate about freedom but a notion of parameters, a rethinking of relations with our environmental conditions:

whatever our socioeconomic and technological choices, whatever the rights we wish to celebrate as our freedom, we cannot afford to destabilize conditions (such as the temperature zone in which the planet exists) that work like boundary
parameters of human existence. These parameters are independent of capitalism or socialism. They have been stable for much longer than the histories of these institutions and have allowed human beings to become the dominant species on earth. Unfortunately, we have now ourselves become a geological agent disturbing these parametric conditions needed for our own existence. (2009, 218)

The theatricality of this moment, the events that occurred between man and land in search of conductive and energetic materials, and the relationship between natural atmospheres—ecological and sociopolitical ones—are intricately laced within one another in a way never before considered. In a time of climate precarity, spatial theatrics take on a whole new meaning as our encounters with “real” sites are no longer stable givens, which we might represent elsewhere (in performance, on a stage or in photographed manipulation). The totality of our Earthly environment quivers as a representation of how certain peoples, cultures, and powers perceive and produce the world around them.

Foucault considered space fundamental to power and knowledge, suggesting space is both where power and knowledge become and also the mode in which they transmit. At the same time, space transforms according to how power and knowledge are performed, practiced, and materialized within it (Foucault 1991, 239). According to Walter D. Mignolo, infrastructure, efficiency, and dependency (including centralized energy supply) are attributes of the modern, based in a colonial imagination, “two sides of the same coin” (2005, 6). Mignolo asserts that: “While we no longer have the overt colonial domination of the Spanish or British models, the logic of coloniality remains enforced in the “idea” of the world that has been constructed through
modernity/coloniality” (2005, xv). Similar to Lefebvre’s notion of the “production” of space (1991), Mignolo points towards the ways in which modernity is made spatial, performed and enacted, bolsters the agendas inherent to colonial capitalism. Mignolo goes on to write that the term coloniality “points towards and intends to unveil an embedded logic that enforces control, domination and exploitation disguised in the language of salvation, progress modernization, and being good for everyone” (2005, 6). It is worth noting that Manifest Destiny was a transformational moment in colonial expansion, subtly blending Nationhood with a sense of independence and individualism so that the work of nation-building on newly colonized and occupied lands was dually disguised as a modern and a divinely granted right of European settlers. Cultural geographer Doreen Massey writes that “one of the effects of modernity was the establishment of a particular power/knowledge relation which was mirrored in a geography that was also a geography of power (the colonial powers/the colonized spaces)—a power-geometry of intersecting trajectories” (2005, 64). In order to begin to think ourselves out of this colonially established logic and practices which have normalized spaces and relationships which they encourage, Massey advocates for a more active and interconnected perception of space; she writes: “we need to conceptualize space as constructed out of interrelations, as the simultaneous coexistence of social interrelations and interactions at all spatial scales, from the most local level to the most global” (1992, 80). Massey’s call to rethink space has political, social, and ecological implications, but critically it makes implicit the interrelation of knowledge-making as both cognition and behavior as well as spatial—as that which makes space. While there are many terms that describe with different emphasis this interconnection—such as
Deleuze and Guattari’s *Rhizomes* (1972), Tim Ingold’s *Meshwork* (2011), and Bruno Latour’s *Network* (1993)–Massey’s notion of *power geometry* (2005) is particularly interesting to me as a visualizing and devising tool.

Massey uses the term “power geometry” to describe the way place is implicit in globalized space. Global power structures emerge through intricately interconnected relations that originate in places and localities. “If space is rather a simultaneity of stories-so-far, then places are collections of those stories, articulations within the wider power-geometries of space. Their character will be the product of these intersections within that wider setting, and of what is made of them” (2005, 130). These power formations are not always equal; some connections may not be obviously perceived because they are drawn into deep time, obscured by infrastructures, overshadowed by ideologies and ontologies. In thinking with power geometries, we can better identify space and place in their multiplicities and in doing so dislodge the future from the hegemonic logic of modernity and progress that so easily define and bind place. Power geometries reveal the ideological underpinnings that confuse space and place with time—to the advantage of perpetuating global capital-seeking expansion. Such temporal concepts include modernity, progress, and development, terms not merely in the domain of colonial logic but dependent on the linearity of time, which is also deeply rooted in western patriarchal logic.

Power geometries are a way to visualize power, but also a visualizing tool that registers at different frequencies with energy, sometimes as electricity. I use the concept of power geometries in this project both as Massey intends and with a degree of misuse. My misuse of the term is that I extend it to ancient and prehistoric power geometries, and
to the histories of human and more-than-human exchanges. As a way of understanding space, power geometries can be a visualizing tool or schema that encourage us to read sites in a more complex way, which has political and social implications as well as help to crack open ideological and ontological structures that function to maintain control and dominance of spaces and imaginations.

There is one more term I would like to add to the previously mentioned list of connections (meshwork, networks, rhizomes, and power geometries): it is “grid.” Grid is proposed by Dominic Boyer to articulate the ways in which electrical networks mirror politics and power, a commingling that relates back to Foucauldian “biopolitics.” Boyer states that the grid, then, is an apparatus subtly inclined to encourage demand, to expand itself, to solicit further dependency on its power, which then grows in response …. It is not just a state instrument, in other words, a tool invented to accomplish governmental agendas. Rather, grid must be understood as the organization of enabled power that allows any of statecraft to occur in the first place. (Boyer via Coleman 2017, 14)

The grid, as Gretchen Bakke notes, is also made for coal and nuclear energy sources. To make the existing grid compatible with sustainable energy production will require a significant amount of money and manpower (2016, xx). The grid is power, knowledge, and space manifest, as material and behavioral connections; diversifying and democratizing the grid is not only critical for our climate crisis but requires tracing and communicating the power geometries which work against such change.

Here is it useful to ask, who defines the terms of modernity and its arrival? Transforming the grid is a compelling, political and social proposition, not merely the
grid as a utility but the ideas and world view which brought the grid into being. A critical aspect of this is that as powers change and move, temporalities are distorted, old, and new become cyclical and complicate a linearity of time in which modernity and progress rest. This is a helpful perspective when thinking through the assumption that ‘modernization’ is inevitable. As Aníbal Quijano argues, “It is necessary to extricate oneself from the linkages between rationality/modernity and coloniality.” Quijano contends that this can only happen by way of intercultural communication as an “interchange of experience and meanings” and that a diversity of perceptions, cognitive approaches, and worldmaking must be present (2007, 177). I will pursue this provocation through ontological pluralities of energy, but before I do, I want to linger a bit longer on the consequences of maintaining systems of knowledge and land relations which sit firmly in colonial and capital logic, and to continue to explore the role of the gaze, the visuality of these perspectives, the ways of seeing the world and the world which is made through such visions.

Returning to the dramaturgical exchange between land and systems of knowledge, I invoke Una Chaudhuri who writes about the connection between landscape and theater in Land/Scape/Theory (2002). She argues that landscape is not a singular event, that land, the material on which the lived experience occurs, as well as its representations, have multiple meanings based on subjective perceptions. “Landscapes are communicative devices that encode and transmit information, and that the skilled interpreter can learn to decode both their conventions and the specific messages they encode” (Chaudhuri 2002, 14). While Chaudhuri’s focus is the way that landscapes function as representations and on stage as scenography, I invert this analysis to consider how the meaning shared
between the landscape we produce in the “real” world and ways of perceiving land, is bound to how we perform with, in front of, or in, land. While landscape is a complicated word, originating in a long history of painting and representation, I want to use the word in the “real world” to mean, the visual horizon that is observable or sensible, so that sounds, and smells make up a landscape. And how performance and relationships always have an implicit landscape, as the place where they “take place,” sometimes imagined and not visible, but sensed. I also think of landscape as the material space that connects bodies in time and space. As W.T. Mitchell suggests, “landscape is a dynamic medium, in which we “live and move and have our being,” but also a medium that is itself in motion from one place or time to another” (1994, 2). Landscapes express this deep time, as spatial and material relationships, while also mediating the material and immaterial world of atmospheres, gasses, and specters of past material relations.

Landscapes of energy production, of which electricity is one, communicate different processes and different relations to land and materials. As a kind of *mise-en-scene*, electrical production encourages certain interactions, behaviors, and responses. Utilities, infrastructures, and appliances shape the performances and space which develop around them; at the same time these sites have relations to other spaces, those of extraction, manufacturing, and transportation, which also need energy to function (often on fossil-fuel-powered electricity). In the space-making that is electrification, the world has changed radically (Nye 1990; Hughes 1983; Hornborg 2013). The utilitarianizing of electricity, which began as a concept during the early 1800s was, firstly, inextricable from electromagnetics, and second, transformed our perception of space and time. In the 200 years since the domestication of electricity in America, our dependence on cheap
accessible and reliable energy is almost unthought, we take for granted plugging in. In one regard electronic process increases demands of electric energy, currently being powered by fossil fuels. Yet all around us electric-scapes work as multiple systems, industrial and utilitarian as well as those inherent to Earth processes, to which the sun is still central (specifically relevant to humans as all our food depends on the sun). To me, there is something similar to the way that landscapes work as a reflection of how we see the world and the ways we view energy, reflected back to us by how we produce and consume it, just as landscape painting was a way of “seeing in which an effectively disembodied individual has sovereign power of command over a section of the world that is physically separated from him” (Bowers quoting Roskill 2002, 127). Electricity viewed as only valuable as a utilitarian process is a way of seeing the world that implicates a land/scrape. The ontological state of seeing the world as resources.

To see oneself as separate from land, and to see land as a raw resource that does not require reciprocal or moral attention, sits squarely in a Cartesian world view. We might imagine as two proportional events, the consumption of electricity and the making negative of land. For each experiment, advancement and progressive technical development, we entered a more negative space; an anti-space formed by the ghosts of released materials as atomized toxins and gasses. Lucy Lippard uses the concept of Undermining (2014, also the title of her book) to illustrates the pits and shafts that reflect culture, alter irreplaceable ecosystems, and generate new structures; undermining’s physical consequences, its scars on the human body politic; undermining as what we are doing to our continent and to the planet when greed and inequality triumph. (2014, 2)
Undermining is perceiving the Earth as raw resource and materials for which to make a profit. At the same time, political responses by artists work to undermine and destabilize viewing land in such ways. Similarly, Joanne Tompkins uses the notion of *Unsettling Space* (2006) to draw lines of connection between colonialism and the displacement of indigenous peoples and with them, land-based epistemologies. Unsettling, however, works both ways, so that European settlers, as agents of colonial occupation, are also unsettled by this history. Furthermore, unsettling accounts for the relationship between power, knowledge, and space, made most apparent through colonialism and now colonial capitalism that continues to displace peoples from traditional lands and livelihoods. Tompkins uses Australian stage productions as a site of inquiry in which to investigate unsettling, and the imagined absence and presence of nations and people. She writes that Unsettling Space accounts for the anxieties shared “between what has been rendered absent and what remains present” (2006, 8). Returning to Una Chanduri’s notion of land Land/scape Theory as a way in which to read spatial meanings, and the “pluralism of landscape” (2002, 14) concerning systems of knowledge in which they reside or are perceived, I extend this concept to consider the ways in which Land/scrapes are the spatialities formed by seeing the world as a resource for which reciprocity and relationality are not considered or valued; and that this is a performative ontology. Land/scraping has been the cornerstone of capitalism, from colonial expansion to Manifest Destiny, wherein land occupation and territorial resources viewed as “free resources” were means to capital profit. One thing that the climate crisis brings home is that “free” resources were never without return, as vibrant materials, their cyclical returns are knowable through warming gasses, altered chemistries and species extinction caused by
ecological destabilization. Land/scrapes contribute to what I term *UnEarthing e/affects* of the climate crisis, as a way of seeing the world embedded in capitalist logic. UnEarthing occurs through Lands/scrapes and unthought energy process. Conversely, perceptions, process and performatives which are *grounded* in energy awareness are critical for healing our planet.

As the most significant theatrical aspect to our energy dependency, we are UnEarthing our species and many others with energy- luxury, convenience, economic growth and colonial technologies. UnEarthing is to me directly related to the role that energy dependency has played in bringing us to the Anthropocene by and through capitalist ‘gazing.’ As unthought energetic relationships, unEarthing is facilitated by intangible scale. Like the way that electrical household goods: whipped cream, refrigerated produce, vacuumed dust, ironed out wrinkles, light particles that entertain us, warm and cool us, such small seemingly benign pleasures, mini luxuries, are all along undermining the land beneath our feet. Unsettling us little by little, so that we find ourselves unEarthed. As illuminated islands of privilege and consumption, wealth and energy-rich places are identifiable by their outlines traceable by the light emanating into the night sky, observable from outer space. This glow, the theatrics of such societies eating Earth with energy-hungry electric teeth, a cannibalistic bloodstain in light bleed. Like the Earthing pin of an electrical plug, the grounding associated with electrical processes is a safety mechanism. In an ungrounded system, undirected electrons are volatile and can lead to lethal shocks, become flames or short circuit entire systems. In grounded systems roaming electrons are directed and absorbed by the Earth, via the Earthing pin. Yet, we have asked too much of the Earth, its ability to ground our energy
consumption is at capacity. The Earth-mass and its perceived invincibility is no longer a myth that can be perpetuated by capitalist logic. Reciprocity and return have been made clear by vibrant materials and global warming. We need systems that are grounded in new, other ways, which differ from participating as violent technologies upon Earth and her vulnerable occupants.

UnEarthing takes the notion of Marc Augé’s non-place (1992) and extrapolates it out across and through the Earth. According to Augé, non-places are formed through a state of being that he terms “Supermodernity,” in which overabundance and excess result in a looking elsewhere for meaning. Augé’s notion of Supermodernity implies that place is fundamentally displaced by desire, and the non-places that form are manifestations of this ungrounded desire. (1992, 24). “If a place can be defined as relational, historical, and concerned with identity then a space which cannot be defined as relational, historical, or concerned with identity will be a non-place” (1992, 63). UnEarthing is the process of losing the Earth through “modern” energetic relationships, and the desires which motivate them. Under the possession of electrification, industrial production became a steroid of overconsumption which results collectively as our contemporary unEarthing. The literal event horizon of the Anthropocene, of human disappearance from Earth, a process which will result in the suffering of vulnerable peoples and animals who have not participated in unEarthing themselves but who will nonetheless be unEarthed. Yet, unEarthing has another meaning, to unearth is to discover what was once hidden, unearthing reveals connections to the past, to other ways of being and informs the future. By unEarthing our dominant relationships with electricity, as fossil fuel-based, centralized assemblages, mass-production, and un-valued energetic connections I believe
we reveal new perspectives, that allow us to see more clearly the systems that consume Earth. In UnEarthing these connections, expanding how energy-as-electricity is perceived, and communicating other perspectives through haptic and tacit encounters, I believe we also find radical transformative forces to think, sense, desire and know different ways of relating energetically to Earth and to one another.

How then do such revelations take place? How do we begin to perceive colonial epistemologies and technologies for what they are—a specific and aggressive form of power maintenance? Walter Mignolo identifies the way that spatial events have been co-opted into hegemonic histories and ontologies, articulating how this logic works through “certain domains of human experience” (2005, 11), and this is a spatial provocation. It is the experience part of Mignolo’s thinking that I want to hold onto. The transference of ontologies and ideologies occurs through space, as a communicated process to individual bodies; how we collectively, discretely, and diversely practice them reaffirms or changes space. Experience and encounters granted through space is the mode of communication. Said differently, it is the ways that space is experienced that allows meaning-making to occur. If certain people only ever experience electricity as easy flowing, how will they, who consume the most energy, ever know the scale of the relationships which are required for such abundant electrical power to serve and satisfy such disproportional rate of consumption? Having other experiences makes apparent that which was hidden. If energy-as-electricity continues to be hidden in and through efficient infrastructures, some will benefit at the expense of other humans and the more-than-human world. When Massey poses the question: “What might it mean to re-orient this [colonial/modern] imagination, to question that habit of thinking of space as a surface? If instead, we
conceive of a meeting-up of histories, what happens to our implicit imaginations of time and space” (Massey 2005, 4). Massey is also asking: how do we reimagine the future not through technologies and modern progress but through our behaviors and relationships in deep time? To think open who or what labors for us in the unseen spatial dimension of electromagnetics, chemistries and movements—as the energetic relationships between Earth, vibrant bodies, materials and temporalities.

**Ontologies of Trans-corporeal Theatrics (as Energy)**

The way that energy performs across and through material and immaterial bodies helps attune us to ontologically transformative possibilities that occur by considering energy more pluralistically. There are several approaches that already do this work. For example, artistic, creative, and occult practices that function outside of normative western logic provide emotional, sensing and haptic encounters that communicate energetic processes far beyond the utilitarian, rational or mind/matter division. Indigenous knowledge systems also offer vast opportunity to learn and transform what has become standardized in and through perceptions of energy. These perspectives are also intrinsically bound to relating and feeling with the Earth. We might trace what has been recently termed object-oriented ontologies and more-than-human actants as preexisting features of indigenous methodologies (Sundberg 2014).

Indigenous systems of knowledge offer alternative perceptions of energy which are deeply tied to cyclical systems and reciprocity between Earth, matter, living, and nonliving creatures. Such interconnections stand in contrast to Cartesian ontologies that view the material world as separate from humans and the natural world as “resources”
waiting to be taken and made valuable by a human. In *Native Science* (2000), Gregory Cajete writes about the role of reciprocity as an energetic process shared between native peoples and the laws of physics.

The world operates in a constant flow of give-and-take relationships. In traditional Native hunting, when a hunter takes a deer, an offering is made, and thanks is given to the spirit family… Earth Mother…to acknowledge the transformation of the deer’s life, spirit and flesh into that of human. (2000, 73)

This is an act of energy transference and a conception of energy as that which flows between bodies and spaces. Cajete goes on to note that this is a fundamental principle of energy as conceived of by physics. “Electrons continually borrow energy from the universe to transform themselves into different kinds of atoms” (ibid). Ceremonies play a critical role in maintaining these relationships, by performing intentions of connection and reminding the physiological, kinesthetic individual of their “alliances with the natural world” the tacit and haptic knowledge of interconnection is reinstated. Cajete also notes that this is a social practice that requires “constant attention and participation” (ibid). This ontological perspective of interconnection and trans-corporeal relations formed through energetic relationships might at first feel distant from utilitarian energy needs but as Chelsea Chapman points out in her research on oil drilling in Alaska’s native lands, the indigenous peoples of the Yukon Flats perceive little difference between utilitarian energy and the energies they receive by living off the land. Chapman identifies how “ontological pluralism” emerges in which “a multiplicity of ways of knowing and of being oriented towards energy—begins to surface” (2013, 98). When weighing the benefits of oil extraction on tribal lands the indigenous communities, who depend on both
fossil fuels and natural ecosystems, cannot rationalize trading in the energy they receive in the form of food and land-based materials with the energy they receive in the form of petrol-based heating and transportation; it is all energy and the benefits of food and ecology simply outweigh the consequences and damages of oil extraction in this particular circumstance. This is not to say that native peoples do not or are not able to rationally choose to engage in extraction and utilitarian energy sources; of course, they do. What is perhaps different is there is an ontological space for which to perceive energies as interconnected, a system of knowledge that accounts for future repercussions as they manifest as energy in other and new ways. Decisions of different types of energy dependency are weighted against one another in ways that western-Cartesian world views simply do not account for (Thomas-Muller 242, 2008).

Ontological plurality of energy provides an expansiveness to energy perception that complicates its easy assignment to nonliving, nonessential, and non-sacred resources. It makes apparent, poignant, and sensible the energetic connections between bodies, human and more-than-human. Yet ontological plurality develops through learned and shared experiences, which are often anchored in cultural perceptions of value. Alf Hornborg, an anthropologist and specialist in energy studies, notes “the very concept of “power” can be used to denote energy as well as social dominance” (2013, 42). While Hornborg goes on to compare energy perceptions to that of money—as constructed systems of value (2013, 43), Martin Medina’s research explores the value of what the west calls “waste” through historical practices and indigenous methodologies, his research affirming that cyclical systems of energy were foundational to the great ancient empires of the Americas (2014). As Leslie Marmon Silko describes it, “Corn cobs and
husks, the rinds and stalks and animal bones were not regarded by the ancient people as filth or garbage. The remains were merely resting at a midpoint in their journey back to dust” (Silko 1994, 498). The trans-corporeality of energy-as-electricity is not just the materials that produce electricity via transference of heat, movement, or chemistry, but the process and relationship that occur over time, as cyclical systems of energetic relationships; to value such relations is a radical departure from normalized energy perceptions and productions. This idea alone is vital, that all materials have a life and death and that we attend to each, in order to make cyclical their vital energies (because if we don’t, they come back to haunt us as the colonial ghosts of warming gasses).

Ontological plurality resists the “gaze” of centralized, rigid, and capital-oriented systems of knowledge (that bind colonialism, manifest destiny and capitalism with lands/scrapes). Transforming perceptions of energy diversifies where energy can come from, and this has real practical application. In the case of utilitarian electricity, this is the fundamental proposition of “smart systems” (Lovins 1982; Fox-Penner 2010), where a mixture of processes is employed—wind, solar, insulation, thermal, anaerobic digestion (decomposition), etc., to create small and efficient energy (as electricity) systems. Smart systems also promote conservation—using less, while also paying more attention to how energy is consumed, and smart systems work cyclically to account for waste, decomposition and recycling processes that can displace excavation practices. As energy scholar Frank Trentmann notes, “How the matter of energy is visualized by people is consequently a hugely important subject, not least in the challenge of promoting more sustainable ways of living” (2018, no page numbers). But it is not visualizing alone, for we might simply view something from afar, but both climate precarity and energy
plurality require us to sense as tacit, interrelated bodies, as trans-corporeal entities. When Stacy Alaimo asserts that, “[i]magining human corporality as trans-corporeality, in which the human is always intermeshed with the more-than-human world, underlines the extent to which the substance of the human is ultimately inseparable from the “environment” (2010, 2). I visualize energy as that which connects us to the world, and the materials and processes of this connection are not separate they are part of what binds us to Earth and one another. Denying such interconnection is both a fictionalization of one’s participation in worldmaking, as well as a perpetuation of colonial and capitalist ways of being that perpetuate our climate crisis. As Teemu Paavolainen states in his writing on the topic of the Anthropocene as a spatial event, “if the performative names a dramaturgy of becoming (of identity, species, climate), then the theatrical provides an optic for its analysis” (2017,185). The Capitalocene is the communication of theatrical fictions that deny the interrelations of materials. A fiction that is a little bit of a lie – the suppression of guilty knowledge (that things can go as they have or even that things can take their time to change, slowly and progressively). The upkeep of such fiction is damaging, not just to Earth, human and more-than-human entities but damaging to that which connects us all – atmospherically. If electricity is a naturally occurring process, how might attending to its performance in “nature,” its presence and performativity in deep time, help us rethink our relationships with electricity which we encounter through infrastructure, utility, and technology? And how might climate precarity force us to reconsider the fictionalized narratives proposed by capitalism, free-market trade, land as resource and freedom? To rethink electricity by and through our practices of material
space-making in the “real” world is to tap into the theatrical nervous system of colonialism and to transform the performatives of energy consumption.

8 The *Lightning Fields* encourage a participatory audience to think of power concerning land, conductivity, and duration; the transference of such knowledge, however, hinges on a haptic, durational and costly encounter with site (as documentation and access to the site are otherwise strictly curated by the Dia Foundation). Also worth considering, is the tension which arises between the field itself and the shelter which one can retreat to for the almost 24-hour encounter. It is the tension between the shelter – an original sharecrops homestead – and the *Lighting Field* site, the tension created between perceptions of power and the need to charge the body batteries of the audience. Power in this way is distributed across land and site as aesthetic meditation at the artwork and embodied reception or integration of energies at the cabin (sleep, food, shelter) – transmitter and receiver, receiver and transmitter, knowledge exchange and space-making.

9 De Maria’s work is also inherently dependent on the experience of isolation, the overnight stay in the old cabin that remains from early homesteading acts of the late seventeenth century. The field and the cabin are dialectical, they contribute differently to notions of power and time. That the home-shelter is often excluded from descriptions of the work is a telling sign of what is prioritized in the reading of the art. The product prioritized over the experience, the performance of the artist (individual) prioritized over the practice of the audience. As a theatrical engagement, the cabin is a critical point of reference for the *Lightning Fields*, it cares for the audience in a way that becomes invisible yet necessarily a part of power-potential mediations.

10 In *Performing the Electrical*, TransR and ReTrans are prop-object hauntings that communicate the materiality of the Capitoloocene, this time that we find ourselves, where capitalist logic now threatens the stability of Earth ecologies. TransR and ReTrans are the spectres of past energy-rich relationships. They reside in nonlinear timeframes where past actions return to the surface, they communicate land/scrapes – colonial perceptions of land as resource without agencies, as sound. They are dinosaurs, by this I mean they are from the past – though present in another dimension, they are extinct yet somehow unable to die so that they are spectral hauntings of guilty knowledge. They are quintessentially land scrapers; they trace the topography of Earth crust, they translate materials into sensorial signals, they are the Jurassic ghosts of fossil fuel energy, of money energy, of power energy. Like dinosaurs, they communicate telepathically, through sonic signals, resonating chambers housed in their heads. TransR and ReTrans communicate through the electrified ether, radio waves, Hertzian space, the invisible colors made by past events, inventions, and interventions. In the *Lightning Fields*, they are condensing particles, materializing past performances of labor, creative labor, and more than human labor – in their movements they ask, who or what labors for you? Like the spikes of steel that are exuded from the ground they make dimensional space to think of Earth and materials as relations and transmissions. Here the sky – the atmosphere is earthed, grounded, the future and the past are no longer linear but swirling around in the presence. They communicate the performative spatialities of knowledge and material relations. Here the snake from the garden of Eden moves silently between shrubs, its belly glides over metals and minerals of the dry Earth, it resides not in orchards of fruit but a field of energetic potential.

11 Neuman articulates that: “Stein’s retelling of the Faust story rests on the reasoning that, if hell is the torment of the soul, then a man without a soul (having, perhaps, sold it) cannot go to hell: ‘I have made it [electric light] but have I a soul to pay for it’, here Faustus worries (*DF*, p. 90). That question is the basis of the connection and the struggle between Faustus and the Ida characters (1988;195). When Faustus finally agrees to help heal Marguerite Ida and Helena Annabel after they have been bitten by the snake (drawing allegorical connections with Eve in the garden of Eden), it is because they might suffer in a way that Faust (privileged in this case of having no soul, will not. Neuman argues that “Faustus’s is the acquired medical and technological knowledge that can cure the sting, a knowledge that carries with it the larger power to let there be electric light. Hers is the knowledge Stein defined as ‘knowing,’ the knowledge to ‘see’ and name him” (176). The naming that Marguerite Ida and Helena Annabel does is to state that Faustus has no soul, and the implications of this are that “while Faustus’s ‘cure’ of Marguerite Ida and Helena Annabel effects a
transfer to her of his knowledge of how to make light, it does so without her having to make a pact with Mephisto” (177).

The concept of deep-time was originally proposed by James Hutton, a Scottish geographer working in the late 1800s. Deep-time has been used in contemporary thinking as a way to incorporate geological time into our current perceptions, whether used as a decolonizing strategy (such as the way in which Jill Lane (2010) employs the concept to interrogate a location as not just not where, but when); or as a way to sense that which cannot be seen spatially because its process of becoming is obscured by such large extents of time. It is also a way to revise and destabilize modernist, male and human hierarchies etched onto the surface of land, as proposed by Dana Luciano (Roudeau 2015). It is a methodology in which looking back influences the future. In the case of electricity deep time offers a way to meet electricity differently, to know its becomings differently, and the immense possibilities for these encounters to occur in diverse, open and ecologically reparative ways. Or as Siegfried Zieleinski writes, deep time is a methodology in which time does not function as a “linear and irreversible process but as a dynamic cycle of erosion, deposition, consolidation and uplifting before erosion starts the cycle anew” (Zielinski 2006,4).

The ways that electricity performs in animals, from electric eels, ultraviolet scorpions, phosphorescence, and bioluminescence to the way ideas, cognition and consciousness also perform or pre-form through electrical processes is best described by neuroscientists Stanley Finger and Marco Piccolino in their book The Shocking History of Electric Fish (2011). The authors write, “When we look at a beautiful landscape or listen to pleasant music, when we express emotion, and when we ponder new information, such as that we hope to provide in this book, we now know that these processes are based on minute electric signals flowing within the circuits of our nervous systems. If we consider, moreover, that even the pulsations of our heart are controlled electrically, we cannot but acknowledge the fundamental importance of “animal electricity,” or what we now call physiological or bio-electricity” (2011, X). As Finger and Piccolino also point out in their research, the history of electricity in animals (specifically fish), has been recorded since antiquity and even then, the accounts of electrical properties were a mixture (in that the word used to describe these events fluctuate between) ‘dreadful’ and ‘wonderful’ (IV). Here the authors recognize our (human) discomfort with electricity as a powerful and pervasive quality that both bring about fascination and fear, never more so than in a contemporary time of energy dependency and the state of the Earth health, diagnosed as the Anthropocene.

From a scenographic perspective, Rachel Hann notes that a “crafting of place orientation” as acts of attending to spatial worldmaking occurs through “the systems of materiality that tie an event of theatrical placeness together” (2018, 23), while Teemu Paavolainen frames a subtle theatricality “as tacit and more apparent qualities of material becoming and cultural perception” (2017,181).

I am making a similar point to Theodor Adorno’s when he accounts for the roles of space and affect in Samuel Beckett’s Endgame (1957), when Adorno states that Beckett’s “deliberate refusal to represent history according to the coherent and consequential standards of Aristotelian poetics ... allows the spectator … to feel or intuit the full horror of what it means to live in a time where ‘the end of the world is discounted, as if it were a matter of course’”(Adorno via Laverty and Finburgh 2015, 10).

Alf Hornborg uses the term “cannibalism” to articulate the way we consume ourselves – our own lives, as we consume under the powers of capitalism.

Martin Medina writes about the development of societies and the management of “waste,” his work drawing strong connections between traditional knowledge and sustainable land management. Medina articulates that cyclical systems value not just production but decomposing of materials and waste. So that “recycling” can be seen as a fundamental aspect of social relations and to land management (https://ourworld.unu.edu/en/the-aztecs-of-mexico-a-zero-waste-society).
CHAPTER 2

Friction

Figs. 8 and 9. From MC6. Photo credit: Cáit NiSiomon
The theatricality of electricity plays out in and through land as a performance that began long ago in deep geological time. Prehistoric electricity present in the Earth’s formation as electromagnetic forces aligned planets, stars, sun and moon. The slow birth of Earth topographies as electromagnetic weather systems created the winds and waters that carved deep ravines and collected into deep oceans. Perhaps the most theatrical of these relationships, is that of Sun and Earth, such big bodies, such transcorporeal relationships between them. Our star holds us in place, gives us warmth, pulls us along in seasonal rotation, the movement of celestial magnetic energy. Earth dynamo.

When Benjamin Franklin flew his kite into the stormy sky in 1752, he confirmed that the small sparks of static electricity known to occur when, for example he shuffled his stocking feet across the parlor rug in the dry winter night, were in fact the same thing: the same quality and substance as the fierce flashes of lightning in a storming sky—the same quality only a different quantity—the energy of movement and friction.

There is a creation story, one among many, that proposes when the Earth was nothing but a sphere of hot rock, a lava core of liquid metals and minerals surrounded by an atmosphere of noxious gas and electrical storms. That a flash of lightning struck Earth’s briny, moist skin, and that this contact caused the very first proteins and amino acids to begin to form. The building blocks of life formed by mud and charged atmospheres. A cosmology story told by Western science, in which metals and minerals are not just classified substances of the periodic table but our distant relatives—living relations through an electric family tree. Salt-water and static electricity—long time lovers.

Action: After a friction dance, there is a Spark

- Ritual voice-over and action, MC6
Figs. 10 and 11. From MC5. Photo credit: Cáit NiSiomon
Sun-light eaters, the electrical impulses and energy transference of plants in photosynthesis that formed the oxygen which condensed around the Earth, that layer of expelled plant breath, ozone—Earth’s aura. Plant decomposition (also a process of energy transference with electrical properties) formed the fertile topsoil of Earth as well as the subterranean pools of oil, gas, and coal—ancient forests decomposed in deep time; the energy-rich materials of fossilized light.

We are all light eaters…
Solar food chain—light crunchers.

Plants communicate with one another through electrical impulses that travel across roots and stems, and a deep network of fungi, like underground radios; they communicate invisibly and energetically as Jurassic networking technologies. We communicate with the Earth through plants, we propagate love songs and sing them to her through our plant siblings.

There is a creation story, one among many, that proposes when the Earth was young, a deity know as Shango appeared in three forms—the flashes of light in the sky caused by his mighty ax sparking with each blow, two celestial rams who fought, the impact of their horns reverberating as the thunderous clashes, and the earth worm, the electrical manifestation of decomposition, of soil and circular systems of entropy. In the three forms of electrical energy perceived by the Yoruban cosmology, Shango sonically announces the rain, makes lighting, and is responsible for the fertile soil. Before the word electricity existed, the phenomena were linked to water, sound, and decomposition; the way electrons condense to make material.

Action: From a battery made of clay, metals, and green plant liquid, the text “Photosynthesis” becomes illuminated.

- Ritual voice-over and action, MC6
Electromagnetics

Figs. 12 and 13. From MC5. Photo credit: Căit NiSiomon
Electromagnetics, the invisible topographies of colors and frequencies which connect us: radio waves, microwaves, infrared, ultraviolet, x-ray, gamma ray, rainbow, Aurora borealis. Earth dynamo, worlds of frequencies, attractions, and reactions.

Our primitive compasses, tiny magnetic crystals of bone and blood orientate and move us, bird beak, full moon turtle egg and all the tiny electromagnetic heart chambers, beating here, now, together...the way elemental materials infuse geological and geographical places in us, the Earthing of us.

A spinning magnet inside a coil of copper, illumination.
Electromagnetic induction, Motors, Clock and Algorithms
Who or what controls you?
Who or what labors for you?

In the future there is a creation story about how things changed;
Transformer, Accumulator, Capacitor.
It is now time to talk with ghosts....

Action: A magnet is spun inside of copper coils to make light; the light illuminates the appearance of ghosts—those that haunt us as colonial specters.

- Ritual voice-over and action, MC6
For a long time now, I have been an expert of falling. The way gravity pulls at my body differently, the way it takes me out of balance, and how the position and movement of my body causes some falls to be predictable and elegant while other fallings are like the chaotic folding of a ribbon in a violent wind. As a circus trained athlete most of my falls were controlled and what I knew of power had everything to do with gravity and timing. My apparatus was the Corde-lisse, a long cotton rope that hung in a vertical line which I would climb, swing and fall from; a pendulum swing, the apex of directional movement, a momentary suspension or weightlessness provided the power I needed to: change directions, invert, rotate and for a beat-or-two of my heart, hover, unbound and suspended, in mid-air, before returning to Earth and apparatus. What things come from knowing gravity? How do the tools, props, assemblages and apparatuses that we interact with inform how we know and move within the world? What do my hands know about falling after years of keeping me suspended above the ground and how does this inform me as an artist and thinker? As an aging athlete, knowing the world through physical encounter is part of the way I think and perceive. In turning towards energy as a site of inquiry, I use my physical and sensorial awareness to consider performance as duets with phenomena, collaborations of friction, chemistry and electromagnetics; the aesthetic-politics of sensing, that inform and influence how we move through (in and of) the world.

- Magnetic Chamber studio writing on assemblages
ASSEMBLAGES OF POWER AND ECOLOGIES OF THE IMAGINARY

According to Deleuze and Guattari, assemblages are not always and only things unto themselves. Instead, these theorists use the notion of the social assemblage to name a structuring of processes, relationships, and power. The assemblages of electrical production, which many of us in the west are dependent upon, are tied to histories of their becoming. In order to rethink energy systems (production and consumption) it also necessary to rethink the relations, agents, and values embedded in such structures. Much of the history of electrical discovery occurred in western epistemological structures which perceived materials and life as separate. Such Cartesian divisions were, therefore, foundational to social assemblages of energy-as-electricity. While such divisions are challenged today by new materialism and more-than-human perspectives, coming to sense, perceive, and participate differently with energy and electricity remains constrained by the influence of capitalist systems which encourage quantitative consumption and obscure electricity’s material relations, hidden within certain assemblages of power. Such structures position us as passive supporters of the power relations they uphold, from ontological world views to political and social forces. According to Deleuze and Guattari:

A formation of power is much more than a tool; a regime of signs is much more than a language. Rather, they act as determining and selective agents, as much in the constitution of languages and tools as in their usages and mutual or respective diffusions and communications. (1987: 63)

In this way, then, the assemblage prioritizes certain relationships and process over others, by and through the components which it contains, and this reflects the systems of value in which it forms. The values of an assemblage might be understood as the logic of its becoming, and such
reasoning is embedded in material relations, maintained through social practices. In the domain of electrical assemblage, by which I mean both the material clusterings of processes and the social organization of certain powers (government, aggressive industry, capitalism, etc.), what strikes me is the way that the formation of power in both utilitarian usage and thus social capacity, becomes embodied. I am an interlocutor with power through power assemblages: that is, how I consume, in this case, electricity, brings me into partnership as a supporter and cocreator of the beliefs, values and world views from which it is made, and the systems and individuals which it supports. Assemblages also reflect and simultaneously maintain a sociality. As Bruno Latour notes in *Reassembling the Social: An Introduction to Actor-Network*, “the social [is] not a special domain, a specific realm, or a particular sort of thing” but a “very peculiar movement of re-association and reassembling” (2005, 7), done through and by us, individual bodies acting collectively. In the case of energy consumption, my body enacts the violence and supports the powers which it calls upon to maintain its process. Latour goes on to note “[t]o be social is no longer a safe and unproblematic property, it is a movement that may fail to trace any new connections and may fail to redesign any well-formed assemblage” (2005,8). The social implications of people’s access to electric energy are power-full—because there are radically better and achievable alternatives that current assemblages are failing to adopt (failing to respond to various and multiple public desires) and because we are unable to express these desires outside of assemblages, we inadvertently act (perform and practice) as supporters of normalized assemblages. Yet the embodied aspect to assemblage maintenance is a weak link: we can perform different relationships in our desiring for other ways, and this is a place to begin, a way to approach and change power structures. In Brian Massumi’s reading of assemblages (via Deleuze and Guattari) he identifies the tension
which arises between ethics and embodied participation in structures of power, via assemblages.

It is a basically pragmatic question of how one performatively contributes to the stretch of expression in the world – or conversely prolongs its capture. This is fundamentally a creative problem. Where expression stretches, potential determinately emerges into something new. Expression’s tensing is by nature creative. Its passing brings into definite being. It is ontogenetic. To tend the stretch of expression, to foster and inflect it rather than trying to own it, is to enter the stream, contributing to its probing: this is co-creative, an aesthetic endeavor. It is also an ethical endeavor, since it is to ally oneself with change: for an ethics of emergence. (2002, 10)

Simply how we live our lives matters—in a material and ethical collaborative sense of the word. By participating in old and over-consumptive systems, I become them. I am part of an ecology that performs (culturally and socially through the practice of everyday life) greed and environmental damage which perpetuates a way of doing, traceable back to Empire making. According to Karen Barad, assemblages can contain apparatuses, and often the apparatus is what allows us to know and sometimes see the non-human phenomena that exist within assemblages. Yet the apparatus, often and easily viewed as neutral, is also “about us,” what questions we are asking and what is of value in these inquiries. Barad clarifies by saying, “apparatuses are specific material reconfigurings of the world that do not merely emerge in time but iteratively reconfigure spacetimematter as part of the ongoing dynamism of becoming” (2007, 142). The objects used for inquiry, and which produce data, discovery and new knowledge are imbued with not just the questions that the research is asking (informed by an embodied ontology) but also by the apparatuses within the assemblages of their becoming,
in which the assemblages might be institutions, nations, and religions. An example is 
Althusser’s notion of Ideological State Apparatus which informs and influences future actions 
and behaviors of subjects. Barad’s theory however also accounts for the more-than-human 
agents and events which extend relations into the future as spatial and material co-
collaborations.

Humans do not merely assemble different apparatuses for satisfying particular 
knowledge projects; they themselves are part of the ongoing reconfiguring of the 
world…Apparatuses are not assemblages of humans and nonhumans; they are open-
ended practices involving specific intra-actions of humans and nonhumans. (2007,171) 
Barad’s argument highlights the role of practice and performatives of bodies, human and more-
than-human, within assemblages of power and the object-tools used for knowledge creation. 
Such an understanding, which Barad terms “agential realism,” calls for imaging futures 
(through the apparatus of the imagination) that take seriously the agents of world making that 
emerge at the nexus of performance, practice, materials and spaces as they intra-act.

In the practice component of *Performing the Electrical*, I use the making of scenographic 
prop-objects as dramaturgical devices that create the electricity needed to run the performance 
event, by and through the performance itself. I use a hand crank generator to power light, hand-
made batteries from different materials to power electronic sounds and all other devices that 
work with “standard” batteries are charged during “mesmeric rituals” as speculative acts of 
healing. In this way, the collaboration between myself and electrical phenomena, place, and 
materials assemble as intentional energetic, political and sensual ways, in the event. My 
intention is to blur the division between utilitarian assemblages and socio-political ones, to 
expose the energy that is shared between us—energy as movement, chemistry, magnetics
(attraction-repulsion), creative labor, sensation, and evocation. I am not *telling* about energy-as-electricity, I am *doing* energy-as-electricity. When energy-as-electricity functions dramaturgically it reveals what is easily hidden by infrastructure and normative capitalist assemblage. Such methodology draws from scenographic practices in which objects, bodies, space, and time animate together, are co-constructive in meaning-making. The liveness of event and the phenomenological information of event assemble and constitute space. Critically, this is not a visual or rational encounter; the atmospheric qualities of the experience are part of the assemblage so that the assemblage extends as invisible yet sensorial, if not emotional qualities. As a practice-based inquiry *Performing the Electrical* synthesizes utilitarian energy relations and the practices of human and more-than-human agents in space as the co-creating collaborations between them. This inquiry moves between scales and frames, between practices of intentional scenographic space-making and the making of space by and through the systems of utilitarian energy relations in the “real” world. Similarly, Rachel Hann in *Beyond Scenography* uses the term “assemblages” specifically to describe the prop-objects that influence both performances of an artistic nature and the performances of everyday life which co-create space through systems of relations. Hann writes, “scenography exposes the material and immaterial assemblages that are inclusive of ideological frameworks that inform any experience of place” (2018, 23). Assemblages are the material and phenomenological partnerships that function both as a process of creating power (social, energetic and electrical) and the prop-objects of worldmaking, we might think of their aesthetics or poetics as ways to “see” into the power geometries in which they animate.
In *The Practice of Everyday Life* (1984) Michel de Certeau articulates those tactics of resistance, as “ways of operating” within and against the normalizing and controlling structures of the dominant culture, by attending to the activities of the everyday. De Certeau writes:

A society is thus composed of certain foregrounded practices organizing its normative institutions and of innumerable other practices that remain “minor,” always there but not organizing discourses... It is in this multifarious and silent “reserve” of producers that we should look for “consumer” practices having the double characteristic, pointed out by Foucault, of being able to organize both spaces and languages, whether on a minute or a vast scale. (1984, 48)

Through de Certeau, we note that space is formed and shaped by the performance and practice of it. We the actors, performers, practitioners, and consumers bring the features of space and place into being. Changing how we approach, interact with, visualize, and imagine energy infrastructures might be the minuet steps that lead to an acceleration of both structural change and ontological relationships. It is not just the energy that we consume, but the energy of cultural practices and epistemologies that form the values that underlie our ways of engagement – and the performative energy of this history has created the atmosphere, waste, and power relations of the Capitalocene.

I use this chapter to think about assemblages, in relation to western electric history and the values which were prioritized in such systems. I focus on the human cultivation of electricity as a series of relational practices, the formation of assemblages of power that came into being through a distinctly Western and gendered ontology. In reviewing the historical development of Western electrical knowledge and assemblages, I consider both the role of performance, as a form of disseminating new knowledge, and the tacit and haptic structures of
communication which allowed for new knowledge to be integrated into social practices, as well as trace the valued relations of the object-assemblages which accompanied electrical knowledge. Because western-electrical culture has developed through a narrow ontological framework, predominantly white, Western and male, I then consider the ways that allegorical representations of electricity might be a way to challenge this male-dominated electrical history. I use these finding to propose how queer temporalities both reflect the unstable allegorical representation of electricity and propose a futurity of electrical assemblages that function as queering propositions. In the final section I offer new or other ontological possibilities as I see them by considering creative works that re-feminize and decolonize energy relations and ontologies. I argue that such ecologies of the imaginary draw new lines of power into being by emergent acts of spatial, visual, performative, and speculative assemblage of power.

Are Assemblages Gendered?

Before western science defined the attributes of electricity through physics, economics and utilitarian processes, its features were the subtle magnetics and prehistoric qualities which resided in nature and material phenomena. In a text from 1898 titled the History of Electricity the author notes that electricity first became known to the “civilized world” by way of the women tasked with spinning thread for textiles. Such accounts originated from Syrian and Phoenician women (1550 BCE to 300 BCE) who referred to their amber spindles as “the clutcher” for the way they attracted and grabbed at small objects and light materials as if with “invisible talons.” As the author notes, these are some of the earliest recorded observations of electromagnetic effects, “that due to the keener perception of women” are recorded within “the
intellectual” rise of electricity (1898, 18). Knowledge of energy-as-electricity was helped along by and through materials and processes, as observed in the rubbing of amber (where the Greek root word elektron comes from), to the presence of naturally occurring magnetic properties in rocks and minerals, such as lodestone and magnetite (sharing the same root name as magnetics). These observations gave clues into the working of the world and the desire to observe, to know more intimately, and control electrical energy led to assemblages—the systems of relation between humans, objects, materials, processes and power. While the keener perceptions of women may have afforded the earliest observations of electromagnetics, in the following experiments the female body was present not because she was a keen observer, but because her body was seen as materially different to men’s: the female body was considered to be more conductive and less likely to influence (as in reduce) the flow of electrical current. (The materiality of sex, class and race is a topic I return to in following chapters).

In the early 1700s, the Western story of electricity began with those who called themselves electrical philosophers or the original “electricians”. As scientist and TV presenter Dr. Jim Al-Khalili notes, electricity was the domain of the privileged, a white and upper-class “elite boys club” (Shock and Awe, BBC Four, 2011). Early electrical knowledge was performed as the intellectual’s entertainment in parlors, smoking rooms, and lecture halls. As a site of inquiry, electrical phenomena at once confounded, illuminated and delighted these novice scientists and their upper-class audiences. While the records of these events span whimsical “electric” picnics and dinner parties, to serious lecture hall demonstrations, the development of electricity depended on performative practices to communicate findings and these shaped the perceptions and possibilities of this new energetic agent. As Fred Nadis points
out, “the natural philosopher, no matter how aloof, had to cultivate an audience and “perform” for it in order to gain backing for research” (2005, 24). These performances were not just for entertainment; they were crucial steps in the dissemination of new knowledge: new object assemblages, that appealed to audiences, which in turn influenced the market and lawmakers (25). Functioning as a form of material storytelling, these performances played a key role in the emergent process of constructing a predominant “electrical assemblage.” Making this new knowledge experiential, expressed through visual and sensorial phenomena, privileged certain materials, relationships and world views on which the following inventions were based.

The ontological lineage of contemporary utilities, assemblages, and relations can be traced back to some of these earliest performance events. The embodied relationality of knowledge and gender are to some degree, coexistent, and orient events, inventions and interventions in certain directions. At the same time, this history reveals the slow transition of electrical knowledge from populist scientific displays to market-driven and commercialized events. The history of electrical becomings also reveals how certain ontologies prevailed and were influenced by patriarchal power structures, productivity, and efficiency, which established electrical energy as a utility, as a cheap, easily consumed and often unthought resource.

In tracing this history, I want to make a point of the role of performance in disseminating knowledge—the performance of the lecture hall and exhibition, as well as the gender of the participants who oriented these discoveries and the material relations which formed around them. The critical intervention here is to make apparent that such systems are not cheap, that such energy comes at the expense of the health of us and the Earth—as intertwined coexistent bodies.
In 1700 Francis Hawksbee, head of demonstrations at the Royal Society in London, under the direction of Isaac Newton, builds a mechanized contraption with a glass sphere in which the air has been removed; upon spinning the sphere, a static charge is produced and seen as blue light, termed “plasma glow.” Though this phenomenon had been seen by sailors as a glowing halo that surrounded ship masts during ocean storms, sometimes referred to as St. Elmo’s fire, this was the first time the effect had been produced in a controlled environment. Hawksbee first demonstrates his invention to the Royal Society, the blue glow of his “Electric Machine” illuminating the lecture hall. The event leads scientific philosophers to praise the Royal Society for doing more to “overthrow superstition and especially the belief in witchcraft and sorcery in England ‘than any other of the great civilizing forces’” (Park 1895, 462). By 1705 Hawksbee’s machine for generating static electricity was used in numerous experiments and eventually led to the development of gas-discharge lamps, the premise for mercury vapor and neon lights. It is also worth noting that in a vacuum, things can emerge as performative events: we see both the way that controlled environments and “empty” spaces are used to create something new, such as the illumination of Hawksbee’s static globe and the way that
systems of knowledge create vacuums for other ways of seeing and knowing the world to emerge.

![Image Removed by Author for Reasons of Copyright.]

In 1729 the Englishman Steven Gray realized that electricity could move through some things but not others, and arrived at the understanding that conductors (bodies, liquids, and metals) aided in the flow of electrical energy, while insulators (silk, glass, resin, and wood) restricted the flow. Born into a family of silk dyers, Gray’s discovery may have been informed by the electric sparks which often leaped from the silk materials during their dying. This material event itself was reminiscent of the silk pushed across mirrors and polished surfaces in the salons and secret chambers of mystics, mesmerists and oracles, dating from Mesopotamia onwards. Such material theatrics were made present in Gray’s 1730 “Flying Boy” experiment, a demonstration that consisted of a young boy being suspended by silk ropes, with a static charge then generated near him so that his body acted as a conductor, and he could be observed to levitate fine pieces of gold from his outstretched hand. The Flying Boy experiment is recorded in the scientific archive as a step towards greater material understanding critical for future electrical cultivation. Images of lightning bolts emanating from the hands of magicians,
healers and psychics both found its place in science and legitimized a legacy of illusions and
direction in which an outreached hand could also levitate women, transform birds into
bunnies and control time. Gray’s experiment inspired a series of related, more populist
electrical exhibitions which drew metaphorical connections between electricity and sexuality,
such as Georg Mathias Bose’s 1740 “Beautification” piece in which electricity was used to
make a person glow with the “aura of a saint” and his interactive salon performance “Venus
Electrification,” in which an “attractive female is secretly electrified, and newly arriving
visitors are hit by a strong electric sparks when they touch or kiss her” (Elsenaar and Scha,
2002, 18).  

In 1745 the German nobleman Ewald George von Kleist and the Dutch scientist Pieter
van Musschenbroek, facing the question of how to store electricity for a later experiment
(while also recognizing the market demand for “electric machines”), invent the Leyden Jar.
One man created the design while the other explained how it worked. The Leyden Jar produced
a static charge through an elegant relationship between movement (friction) and atmosphere, a
transference of energy from human-powered movement to a different kind of power. The
charge is stored in a glass sphere – a vacuumed atmosphere, where it then can be discharged on
command by the touching together of oppositely charged metal spheres. The Leyden Jar in its earliest demonstrations required the physical participation of its operators who used their hands to create its charge. While the jar was suspended by “blue silk threads” one set of hands pressed upon a spinning glass globe, while another spun the globe connected to the jar by a brass wire. The invention goes on to facilitate numerous experiments in which electricity can be stored and called upon when needed.

Fig. 17. Benjamin Franklin, 1752, “The Kite Experiment.” (Image from Les Merveilles de la Science, published, 1870).

In 1752 the American Benjamin Franklin, in a highly theatrical experiment, flew a kite into an electric storm and proved that lightning was, in fact, an electrical event by capturing the electrical discharge into a Leyden Jar. Up until this point in time, scientific reason could not confirm that the spark emitted from a frictional charge, seen in the low lighting of salons and lecture halls, was in fact the same substance that flashed with crackling light and power in a storming sky. The potential to control and mimic nature was perhaps never before as great as it was when Franklin proved that the content in the Leyden Jar was the same as the most powerful forms of electricity of the time, lightning—same quality, different quantity. It was now proven that man was within grasp of the power of the gods and had only to learn how to
reproduce it in great scale; the terms artificial and natural electricity emerged to explain the perceived difference. Franklin’s discovery went on to establish that all bodies have an electrical charge, and the exchange of charges can be understood as positive and negative. The friction of atmospheres, such as a stormy sky, creates a negative space in which the positive, energetic charge is expressed as the flash of lightning or the quick spark of man’s making.

![Image Removed by Author for Reasons of Copyright.]

Fig. 18. Alessandro Volta 1801, demonstrating his voltaic pile to Napoleon. (Getty Image archive)

Back in England, in 1773, Henry Cavendish uses mathematical physics to understand gravitational motion, the Earth’s atmosphere, and the material effects of the elements. He also identifies that the sting of a torpedo fish felt very much like an electrical shock from a Leyden Jar. He proves that in fact, these are two different forms of electricity. While the Leyden Jar dispels rapidly the static friction which it holds in the form of a powerful spark, the fish lacks a spark and seems to emit a “slower” shock. Cavendish concludes that the fish’s electricity is being produced by a chemical reaction that can be prolonged and sustained, introducing the idea of chemical electricity and the possibilities of continuous charge. We might imagine this event as a duet between a man and a fish, a dance refined in 1801 by Alessandro Volta who designs and builds a voltaic pile, a replica of sorts of the torpedo fish’s electrical body. Volta, an Italian physicist, makes what is essentially the first battery, though it is western science that
disqualifies the fish itself from occupying this position. We also might note that bio-mimicry and scientific-technological innovations are deeply linked by mimesis of power and process, yet this replication of forms and methods fall short of extending to environmental interdependence and ecologies.

During this time Volta is also involved in a long, drawn out debate with the Italian physicist Luigi Galvani, over the proposition of “animal electrics.” The two scientists had competing theories which required that a significant number of frog legs were shocked to prove or disprove their theories. The performative aspect to establishing who was right resulted in both electric shocks that animated the dead and de-animated the living but in doing so, returned to that intangible space, and desperate need of western science to keep separate and hierarchical the life force of the living from dead materials. Patricia Fara notes that the Volta-Galvani disagreement is founded on a conflicting interpretation within Christianity between body and soul, which had up until the debate of animal electrics, comfortably concluded that bodies and material were distinctly un-related, the animating soul of life vs. dull materials (Fara via Al-Khalili 2011). The debate between Volta and Galvani inspired Mary Shelly’s Frankenstein and predicted the use of electricity in capital punishment. In the end, Volta
disproved animal electrics by affirming that electric impulse was being carried through the conductive body-material of the frog’s leg. His name is still used to quantify electrical charges created by physical reactions, in volts. However, by the 21st century, this conclusion will be challenged by discoveries that link neural processes to electrical signals, more or less confirming animal electrics.

Fig. 20. 1855 Michael Faraday Christmas Lecture at the Royal Institute. (Image by Alexander Blaikley, 1855).

In 1808 Humphrey Davy builds the first “modern” battery, which was put to use exponentially for industrial innovation, the first literal power behind the industrial revolution. Davy was in the position to do so after he first gained his reputation as a chemist when he held demonstrations of the effects of laughing gas at the Royal Institute. His apprentice, Michael Faraday, who also “cement[ed] his reputation by performing and giving popular lectures” (Nadis 2005, 25), understands that electricity and magnetism were related phenomena and develops a series of new applications based on induced electromagnetic current (Rhodes 2018, 187). By the mid-1800s, Faraday’s contributions accelerated the possibilities for generating electricity to arrive at the industrially used dynamo, the telegraph and mass communication. This alone was a spatializing event that was sensed as a closing of time and space; the first time immediate global communication is experienced, making the world a smaller place,
through the immanence of global communication. In Faraday’s own words, “Electricity is often called wonderful, beautiful; but… the beauty of electricity or of any other force is not that the power is mysterious, and unexpected, touching every sense at unawares in turn, but that it is under law, and that the taught intellect can govern it largely” (from 1858 appearing in the Wellcome collection archive). At the same time, Faraday was holding his Friday Evening Discourses, public exhibitions and demonstrations of electromagnetic functions, so that there was still a little bit of wonder left to those laws.

Fig. 21. A reproduction of Maxwell’s method demonstrated, years later by Louis Ducos du Hauron in - *Les Coulers in Photographie* -1869.

In 1865 the Scottish scientist James Clerk Maxwell proves that electricity, magnetism, and light are interrelated forces, and manifestations of the same phenomenon—namely that of the electromagnetic field. His discoveries lead to numerous innovations and pave the way for Einstein’s theories of relativity and quantum mechanics. Maxwell’s work with color makes possible the first color photograph, which he presents at the Royal Institute with the help of photographer Thomas Sutton. Together the two men presented the first color photographic image of a tartan ribbon tied in a bow. The intersecting lines of the ribbon also resemble “the newly minted telegraph lines stretched across the UK in symbiosis with the growing network of railways, a pattern soon followed in the rest of other industrialized nations and their
“colonies” (Gooday 2008, 44). As colonial infrastructure appeared across the Americas, India and Northern Africa, soon to follow would be the images, photographic and illustrated in color of all the objects, utilities, and appliances that could now be bought and used at home. Notions of luxury and wealth extended scientific discovery into capital commerce. Here we see the performative nature of electrical knowledge shift from inventors to marketplace publicity, product advertisement, and utility-funded exhibitions. At the same time, the US investment in the oil industry had reached $200 million, today's equivalent of $4 billion, solidifying a significant partnership between fossil fuels and electric energy (Rhodes 2018, 167).

Fig. 22. Nikola Tesla's laboratory in Colorado Springs circa 1900. (The original unretouched image, (without Tesla), from Century Magazine, June 1900).

In 1876 the American Alexander Graham Bell patents the telephone. In 1880 Thomas Edison creates the incandescent light bulb, which is put to use in 1882 by the New York citizens living on Pearl Street who were the first to receive utilitarian electricity in their homes from a neighborhood power plant. In 1895 Nikola Tesla, with funding from George Westinghouse, designs one of the first AC hydroelectric power plants in the United States, at Niagara Falls, and the “war” of the currents finally comes to an end. Tesla demonstrates that AC current is not only a more effective way to transport electrical energy than the DC approaches used by Edison but also performs the safety of such electrical power by staging a
dramatic and iconic photoshoot of himself seated amongst electrical charges in his Colorado Springs laboratory. At this same laboratory Tesla spent a full year restlessly pursuing the idea of free and wireless energy, an inquiry that did not come to fruition.

Fig. 23. 1892 Thomas Edison float “Electra”, Columbus Day Parade New York. (Image by R.F Outcault, 1892).

Between 1880 and 1900 electricity is presented as a form of luxury that would soon be accessible to all. In the New York Columbus Day parade of 1892, Thomas Edison funds the “Electra” Float, using batteries and three thousand incandescent light bulbs. The float metaphorically fused the “discovery of the Americas” with the triumphant emergence of “a brave new electrical world” (Nadis 2005, 54). The Electric Girl Lighting Company rented out hostesses for parties and events; these “Electric Girls” wore batteries strapped to their bodies and illuminating headdresses as they worked for their wealthy patrons (Nadis 2005, 56). Newly fabricated x-ray technology reduces bodies to bones for both entertainment and medical purposes, and electrocution is used as capital punishment. By the early 1900s the slogan “The Future is Electric” had become part of the cultural zeitgeist. The general public, now assured that electrical utilities could provide safe energy, became “passive” investors in electrical expansion through the market of domesticated electrical goods, from electric toaster ovens and vacuums to radios and televisions, filling homes and landfills in rapid succession with quickly
outdated electronic devices (Nye vis Shin 2018, 5; Gooday 2008).

Marie Curie’s early work with radioactive materials lays the foundation for the atomic age. Nuclear fission, the process that creates atomic power, was made possible through a series of rapid discoveries into the workings of atomic particles by prominent physicists from across Europe and America, including Albert Einstein and Niels Bohr. The Manhattan Project and subsequently the first atomic bomb were developed through the leadership of Robert Oppenheimer. In 1945 the first atomic bomb was tested at the Trinity test site in New Mexico, and that same year, the U.S dropped atomic bombs on Hiroshima and Nagasaki. These events were disseminated through mass media communications and affirmed a new atomic era. Ten years later, Russia built the first nuclear-electric power plant. In 1952 the highly publicized Miller-Urey experiment simulated the conditions of Earth’s early atmosphere, a place where nothing living existed. It was just the acrid air and the bare but mineral-rich and watery Earth elements. Yet when the scientists introduce a spark of electricity—a miniature lightning bolt if you will—and within days amino acids began to develop, the first living biological building blocks for life as we know it emerge. The experiment was interpreted as yet another indication
that electricity and life were deeply connected, both in life granting qualities and life obliterating atomic threats.

Fig. 25. 1979 Jimmy Carter inaugurates solar collectors as the White House. Jimmy Carter Library.

By early 1960 the environmental implications of energy consumption, specifically the impact of coal and atomic energy, begin to coalesce as what would later be termed the “sustainable energy movement.” This movement is accompanied by a growing awareness of ecology in part initiated by Rachel Carson’s *Silent Spring* (1962). Meanwhile wind, as a source of electric energy that dated as far back as 1887, still faced the challenge of moving beyond real-time demand. And although research at Bell Laboratories of solar-powered energy was making progress with photovoltaics, the cost of such materials restricted research to military and space travel inquiries. It was not until the mid-1970s that the “solar age was born” in a rare moment where “alternative” energy and contemporary ideas permeated across fringe intellectuals, university campuses and the roof of the white house. In 1979 then-president Jimmy Carter installs the first solar panels at the presidential headquarters. Photovoltaic, along with wind technologies seemed destined to become more efficient, affordable, and politically supported.
At the same time liberal, ecologically informed and esoteric thinkers start to interrogate the relationships between environment and centralized electric power assemblages dependent on gas, coal, and atomic energy. By 1973 issues of national vulnerability due to US dependency on foreign oil were made apparent by the OPEC oil embargo. The designer, architect and engineer Buckminster Fuller examines global inequality along the lines of energy access, and proposes speculative design solutions as well as develops theories around “the unselfish use of technologies” (Fuller 1981, 112) which gained a cult-like following between the late 1960s and mid ’80s. Fuller’s contributions to viewing Earth as our collective “Mother Ship” went on to influence numerous futurist and sustainable design and aesthetics approaches. In 1982 Amory B. Lovins and L. Hunter Lovins publish Brittle Power, an in-depth analysis of the vulnerability of the United States’ national grid systems and national “Energy Insecurity.” The Lovinses identified the unstable relationship formed through highly centralized technologies, foreign importation of oil and non-sustainable extraction preciouses; they then addressed solutions ranging from government policy to community actions. Amory Lovins co-founds the Rocky Mountain Institute, a center dedicated to sustainable energy production. Today the Rocky Mountain Institute continues to support research into alternative energy policies and technology development in direct response to climate crisis and energy use across the globe.
As sustainable processes developed over the last 30 something years, the greatest challenge which has emerged is storage capacity.²⁴ New possibilities to power electric vehicles and domestic spaces with individually owned solar power have radical implications for national power grids, agencies, and economic relationships based on fossil fuels. Elon Musk’s work with both electric-powered vehicles and battery storage systems is an excellent example of the social imaginary of electricity in the near future. At the same time continued scientific research into biofuels, thermal power, and other sustainable processes represents the contemporary landscape of energy-as-electricity. Which is now confronted by a new challenge: the impact of digital technologies, that is data that streams every day, 24 hours a day via electric and electronic infrastructures. The electricity that such digital data requires is expanding exponentially through data streaming, servers, electronic manufacturing, charging devices and new, emerging processes such as digital currencies (e.g., bitcoin) which require a staggering, yet invisible 22 terawatt-hours (TWh) per year, consuming almost the same amount of electricity as the country of Ireland per year (Alex de Vries 2018).

Fig. 27. Map of Eneropa - Roadmap 2050 by Rem Koolhaas’s OMA, 2010.
This arc of electrical knowledge developed through objects, assemblages, material relations, and exhibitions have facilitated a notion of easy and abundant energy-as-electricity, the source of which is often unthought. Discoveries and inventions were performed along the way by scientists, entrepreneurs, businessmen, and manufacturing advertisements, yet such events failed to attend to the remains of energy production, the ghosts and vortexes of post-manufacturing, post-consumption. The afterlife of energetic materials was invisible, only made sensible through moments of advancing ecological instability. It is the climate crisis that reveals a whole other set of performances, events, and haptic interventions. Like a shadow performance on the back wall of an auditorium, vibrant materials performed their agency while much of the western world was facing in the other direction. In rare occasions speculative and ecologically oriented proposals for the future sometimes focus on the more-than-human collaborations which might radically transform energy relationships, such as Rem Koolhaas’ Eneropa, also known as Roadmap 2050. As a speculative conceptual project Eneropa (the name coming from energy and Europe combined), was intended to promote rethinking energy needs and build sustainable coalitions within the European Union; Eneropa renamed nations states after the types of sustainable energy which they contributed. Commissioned by the European Climate Foundation in 2010, ten years on, the Roadmap records a fading vision of a united European Union and underdeveloped possibilities.

For most of us living in European and American communities, it is not until we experience electrical blackouts that we consider how much we depend on this constant flow of energy; we take electricity for granted. Within 200 years electricity has gone from a naturally occurring phenomenon, observed with curiosity and enchantment to a utility that is consumed easily through invisible infrastructures. The assemblages that make easy flowing utilitarian
Electricity are often unthought, invisible, and yet hugely influential on socio-political formation. Yet the debate around sustainable energy often focuses on technology and economies, not personal interactions and forms of consumption, nor the history which has informed the utilitarianism of electrical energy. Critically, as Karen Barad points out, the “understanding of gender-and-science-in-the-making” as interactive and co-constructive has mostly been ignored by mainstream science (2007, 87). Which raises the question of how the normalization of a gendered electrical history, which ignored the “mutual constitution” of the “social and scientific,” might now be opened up as a space for both analysis and speculation? I want to consider what powers the relationships between western ontologies, material relations and power—drawn out in and through spaces and relational assemblages—and how an understanding of gendered ontologies might inform both the past and the future of electrical knowledge, in which a queering of electrical perceptions might point towards more sustainable, creative and kind worldmaking assemblages.

**Electrical Allegories and Queer Phenomenology**

For clues into how electricity is performed along lines of race and gender, I look to the allegorical representations of electricity produced over the last two centuries. One well-noted feature of electrical allegories is that the gender assigned to electricity is unusually unstable, shifting between male and female representations and at times appearing as androgynous bodies. Scholars have identified connections between socio-cultural settings and general populist perceptions of technology as a reason for this gender fluidity (Gooday 2008; Shanken 2017; Shin 2018). For example, ancient imagery of electricity (in the form of the gods of lightning) often depicted powerful male figures, including “the Norse Thor, Greek Zeus, Slavic
Perun, and Hindu Indra. Similar masculine figures can be found in Asian, African, Meso-American, and Afro-Caribbean traditions” (Shanken 2017, 5). By the late 1800s, during electricity’s “domestication,” a term used for the period of urban development and when electrical utility and new infrastructure was being installed in private homes and institutions, electricity becomes feminized as a means to demonstrate safety and submission (Gooday 2008, Shanken 2017). Market investors eager to demonstrate that electrical energy could be dominated and controlled during this time also included the racialization of electrical energy as not just a female servant but at times an exotic (from elsewhere) servant or “slave” (Gooday 2008; Shanken 2017). In the age of atomic advancement, electrical allegory returns to a male body, the forceful power of atomic energy too much for the female form. Recently with the emergence of Wi-Fi and wireless technology, electricity returned to her female form. While such depictions are nostalgic of the allegories from the early 1800s, where flowing fabrics and a trance like gaze once communicated the mystery of electricity, she is now “physically emancipated from both power source and bulb,” representing the mysterious properties of new wireless technologies (Shanken 2017, 24). These allegories communicate the way that electricity performed in the social imagination, its anthropomorphic forms reflecting the qualitative perceptions in mainstream and cultural aesthetics. Yet, drawing on this allegorical history, and the instability of gendered form, perception, and representation, might we consider electricity as a queer phenomenon, as this archive indicates? I want to consider the ways that a queering of energy-as-electricity might be useful for not only expanding perceptions of electricity’s material and processual relationships, but a critical lens for rethinking energy-rich relations in a time of climate crisis.
In *In a Queer Time and Place* Jack Halberstam states, “Queer time and space are useful frameworks for assessing political and cultural change in the late twentieth and early twenty-first centuries (both what has changed and what must change)” (2005,4). For Halberstam, a component of this change is shaped by the distinct experience of queer peoples who reframe a cultural practice outside of the normal conventions. Queerness as an orienting device affords new practices to form around relationships and values. Halberstam notes how queer temporalities reframe notions of “family, inheritance, and child-rearing” (2); I draw connections between living differently in relation to resources, energy, and time, as shared between queer temporality and ecologically sustainable methodologies. Energy in queer temporalities is not oriented towards “centralized” powers and a dominating rational of (re)productivity, but rather, come to redefine values of energy-rich processes and diverse relations. Queering electricity is a call to making alternative power relationships through assemblages of queer temporalities: assemblages which orient and value processes (the interconnection of humans, more-than-humans and ecologies of worldmaking perceptions); the value of becoming expanding the possibilities of production beyond reproduction (to reproduce what came before). In the context of energy-as-electricity this means a queering through a re-feminizing (to balance the domination of patriarchal epistemologies) and a literal re-valuing (through power geometries that create value out of more than capitaly motivated systems) to form new assemblages.

Sarah Ahmed begins her book, *Queer Phenomenology* (2006) by attending to the notion of orientation and how we know the world around us. Ahmed draws from the lineage of phenomenological thought to expand how an embodied relationship between space, directions, and distance are fundamental processes of orientation; we orient our bodies in space to know...
where we are within a given environment. This is the premise for directions, up-down, right-left, whether referring to directions given while walking in a city, finding one’s bearings in a dark room, or reading a map. It is also a way of orienting other bodies in relation to one another and to the world around us. The sky and the astronomical features of planets and stars were our first tools for knowing the location of the Earth in relation to other celestial bodies, as well as our individual locations and migrations on Earth. 

Ahmed offers a conceptual proposition that orientation also accounts for gender and the ways that gender orients us to the world. “If orientation is a matter of how we reside in space, then sexual orientation might also be a matter of residence; of how we inhabit space as well as “who” or “what” we inhabit space with” (2006, 1). Let us take a moment to recognize that infrastructures and assemblages of electrical production have thus far been based predicated on the scientific discoveries and implemented by the design and industrial imaginations of white men. This is only to say that quite possibly this system is dominated by white male-centric ontologies that are oriented towards a way of being in the world, with its back turned to other ways of thinking and being.

As Ahmed notes, “[t]he direction we take excludes things for us, before we even get there” (2006, 15). In the case of electrical history, assemblages and shared utilitarian practices there is another direction that simply has not been seen, made present, and is yet to emerge because we have yet to turn to face it. Phenomenology as a way of understanding worldmaking through perception and consciousness is a relational-spatial concept that accounts for the unseen and the sensed. Yet how we sense these unseen phenomena have very material consequences, particularly relevant to this moment of the climate crisis. As Ahmed argues, to orient oneself towards a direction can be an intention, such as I will go there, and the chance of arrival is not just predicated on that first act of orientation, but that orientation can also manifest actual
moments of arrival “as if by magic” (2006, 194). The spatial aspect of magic – the notion of encountering the impossible and fantastical has been arguably pushed out by scientific reason and modernist logic, yet magical encounters and arrivals might simply be questions of orientation. Perhaps we will not arrive in an energetically sustainable “magical” future, but we will never know unless we turn and face in its direction.

Desire plays a key role in Ahmed’s proposition: it is the sensing of desires, based on identity and sexuality, that contribute to embodied orientation. On the first page of her book, Ahmed asks, “what difference does it make ‘what’ or ‘who’ we orient towards in the very direction of our desire?” Desire is a direction; to me this desire is closely related to how Audre Lorde uses the term *erotic*, to describe and make present, the deep pleasure and commitment of doing—doing the work, giving into the labor that must be undertaken to move to a new place. Erotic pleasure is not about arrival; it is in the process, the charged tension between things, ideas, bodies, and space. In Lorde’s iconic essay *Uses of the Erotic: The Erotic as Power*, she writes, “the erotic is not a question only of what we do; it is a question of how acutely and fully we can feel in the doing” (Lorde 1978, 54). I believe the erotic also exists in aesthetics; how we do, where we do, in what ways and with what materials, forms an aesthetic quality to actions within the phenomenology of time, place and cultural identity (I explore erotics and desire as social interventions further in Chapter 4). There are both social and spiritual repercussions to fully feeling our actions. Perhaps this is called consciousness, being in the present, self-awareness—but these terms lack the power of the erotic. They are terms that have already passed through a neo-colonial lens and sit comfortably in marketing schema.

A vision of erotic aesthetics as I understand it, is what occurs in art-making, occult and traditional practices, in subcultural movements and spaces that are not sanctioned by institution
or infrastructure. In fact, the friction between the hegemonic and other spaces is often known through an erotic aesthetic, the intentional manifestation of acute feeling that is not centered as a cultural norm. Through this lens, I want to summon the erotic presence around electricity, an element that is not normally considered erotic through our quotidian consumption and production of it, but which has historically been associated with attraction, love, desire, power, and presence. How is it that the cultural enactments of utilitarian energy are so far away from an embodied desiring, yet they facilitate a social performance of desire which revolves around material wealth? How do we bring body-sensing back into relation with energy and can energy-as-electricity be the circuitry of such connections? As energy scholar and historian Hiroki Shin notes, “the increasingly multidisciplinary research of energy is the general departure from technological and economic determinism in favor of an acknowledgment of culture’s greater significance as a factor in the shaping of modern energy society” (2018, 13).

Electricity is a way to trace the material, spatial, and cultural aesthetics of energy relations, as aesthetic interventions that contribute to and connect to rethinking electricity. A queering of energy relations opens up possibilities for new temporalities and new forms of desiring to exist within energy practices. Because our bodies are highly sophisticated sensing tools, desire is a technology for sensing and orienting towards what is not yet or yet to be.

“Technology does not simply refer to objects that we use to extend capacities for actions. Technology (or techne) becomes instead the process of “bringing forth” or as Heidegger states, ‘to make something appear, within what is present’” (Ahmed 2006, 46). We might see the orientation of assemblages as colonial, supremacist, and patriarchal, which is why alternative energy processes are also decolonizing propositions. They intervene in the power of power, and this begins with performative – socially im-bodied actions. As Ahmed states,
If consciousness is about how we perceive the world “around” us, then consciousness is also embodied, sensed and situated. This thesis does not simply function as a general thesis but can also help show us how bodies are directed in some ways and not others, as a way of inhabiting or dwelling in the world. (2006, 27)

A queering of electricity is a way of relating to energy assemblages differently, shifting perceptions of how we “dwell in the world,” and the power assemblage with which we align ourselves. If we desire alternative energy relations, then we must orient towards other partnerships and this orientation must be accompanied by performances, exhibitions, and desire-driven embodiment that become spatial, from the quotidian to spectacle-esque. And which embrace Queer temporalities.

Creative, poetic and aesthetic assemblages imagined by artists have a long lineage of attending to the other aspect of energy – not the utilitarian uses of electricity but the unseen and sensed alterations, affects and possibility that energy might have as an atmosphere or unseen dimension. Obvious examples of such artists include Stelarc and Arthur Elsenaar whose work during the 1980-’90s with “Transcutaneous Electrical Nerve Stimulation” put their bodies in direct contact with electrical stimuli (Elsenaar and Scha, 2002, 23). Or cyborg artists such as Moon Ribas and Neil Harbisson who use contemporary electronic implants to sense the world differently through neural feedback. More symbolically, energetic objects might include the work of Joseph Beuys’s fat and felt Fat Battery (1963) and earthwork installations such as Walter de Maria’s Lighting Fields (1977), along with a vast archive of artists who combine art and science to explore other technical mediations which alter how we see and know the world.26 All are emblematic of artist assemblages that deal with notions of energy and transformation. However, I want to focus on somewhat less obvious sites and ways of
inquiring into the electrical. I want to hone in on actuants of a different nature, made present through alternative and embodied assemblages. I want to ask, as a form of Queer and speculative aesthetics, what might feminist ontologies and artist imaginings do for rethinking the “real” assemblages and infrastructures of our quotidian experience, particularly with respect to those that standardize aggressive capital agendas, maximum industrial output and extreme waste?

In the following section, I draw connections between female artists’ image and event-making, speculative design and tacit knowledge, as sensing tools for technological possibilities at a time when energy dependency, in the form of electricity, is the greatest generator of fossil fuel waste and pollution. I use Remedios Varo’s paintings from the mid-1930–1960s as a springboard to think about sustainability and ecological design from an embodied, fem-magic and deep-time perspective, and I draw from other female artists whose work explores technologies and energy, such as Alice Aycock, Tania Candiani, Cassie Meador and Hito Steyerl. An analysis of these artists’ works allows me to explore the ways that feminist imaginings function as an ontological orientation that shifts power away from contemporary infrastructures, to decolonize and re-feminize electrical possibilities as alternative ways of engaging with and sensing assemblages. I view these works as dramaturgical blueprints for the practice component of Performing the Electrical. Assemblages function as a layering of material and embodied relations and expand what has traditionally been termed the “material theatre” (Carlson 1989; Knowles 2004) to account for the materiality of worldmaking as both a physical, imaginative and performative collaboration.
Power Potential: Assemblages for Sensing

Figs. 28 and 29. Remedios Varo’s *Creación de las Aves* (1957); *Microbial Home* designed by Clive van Heerden and Jack Mama (2010).

In *Creación de las Aves* (see Figure 24) visual artist Remedios Varo imagined an assemblage that works something like this: first the funnel end collects the night atmosphere. Stars and dark space are then distilled through a series of vessels and tubes to create the pigment, which is used to paint the outline of the bird. Then through a glass lens the starlight is refracted, and as the light pours onto the page, the bird comes to life. Like many of Varo’s paintings from the mid 1930–1960s *Creación de las Aves* depicts an assemblage that operates through energetic vortices, distilled phenomena and human-ish operators. What these assemblages ultimately produce is not always clear but the way they function, the processes that they perform, and the elements involved, position them in direct relation to the environments in which they appear; in a sense, they are fantastical prototypes for sustainable design. While Varo’s spaces often read as architectural, semi-closed rooms are permeated by the outside world while the events of the inside bleed out. They are essentially symbiotic and ecological exchanges between materials, assemblages and operators. Together they perform process, or function that transmutes, transforms and recycles the natural world into other
natural and elemental substances; the moon eats the stars, characters move by wheels supported by long hair, handlebar mustaches are steering devices while clothing contains turbines that power passenger and assemblage. These mechanized contraptions are bound to the spaces in which they appear—characters and machine are making their spaces as much as they are performing in and responding to them. Varo’s paintings propose the importance of materials and objects in the making of these worlds. As Natalya Lusty notes:

In many of Varo’s images, the human subject appears surprisingly indebted to the extraordinary forces of nature and the marvelous mutability of everyday objects, whilst also exploring the unconscious forces driving experience and imagination (2011, 57).

Lusty’s observation hones in on a fundamental aspect of Varo’s work: that forces drive processes and for Varo, these forces are not produced by the assemblages; rather, the assemblages seem to harness, tap into, delicately collect, and bring forth that which is often unseen or is atmospheric and uses these forces to create anew.

How might feminist ontologies and artist imaginings help us in rethinking the “real” assemblages and infrastructures of our quotidian experiences that have standardized aggressive capital agendas, maximum industrial output and extreme waste? In this section I draw connections between five female artists’ images and event-making, and read them as speculative design, tacit knowledge, and sensing tools for technological possibilities in a time when energy dependency, in the form of electricity, is the greatest generator of fossil fuel waste and pollution (according to the Institute of Energy Research, 2016). I explore this specific function of energy and power, as a feminist intervention to open up future possibility and interactions between bodies and assemblages (living and non-living).
Feminist geographers Julie Graham and Katherine Gibson, sharing the pen-name J.K. Gibson-Graham, propose that the “feminist political imaginary” is a way of living and belonging in the world differently and that this imaginary can be put to use in addressing the physical, spatial and material relations of assemblages (2011, 1). In rethinking these relations, Gibson-Graham articulate a strategy both for social change and for actively addressing climate crisis and our current ecological precarity. Gibson-Graham suggest that rethinking our relations with assemblages provides a platform for “experimenting with new practices for living and being together” (2011, 5). Such approaches include sensing the unseen, attuning to living and non-living process, creating sustainable and supportive networks for growth and diversified approaches. In this section I use female imaginings of assemblages, produced as artworks (not as objects of practical application) to explore what might be called a feminist ontology of energy in order to draw connections between energy and power, energy and sustainability. As a kind of provocation Gibson-Graham recall the words of ecofeminist Val Plumwood:

If our species does not survive the ecological crisis, it will probably be due to our failure to imagine and work out new ways to live with the earth, to rework ourselves and our high energy, high consumption, and hyper-instrumental societies adaptively ...

We will go onward in a different mode of humanity or not at all. (Plumwood via Gibson-Graham, 2011, 1)

In reading female artist imaginings for clues of other ways to relate to, and engage with, assemblages and energy, I explore what rises to the surface as a female ontology, one that desires embodied and tacit interactions and partnership with the world. And I propose lines of connection between selected artists, their imagined relations with the material and ethereal
world as sources of energy, and emerging technologies of energy production and sustainable practices.

First, a few things to consider: the ideas presented here involve technology and sustainability, two practices that have not always fit well together. Not only has technological “advancement” generated a huge amount of waste on Earth as outdated technology now overflow landfills, but the demands for new devices and the power they require in production and operation has further increased our growing dependency on energy sources (Zielinski 2006). The capital-generating practices surrounding technology and sustainability has produced a form of neocolonial “environmentalism” in which natural habitats and traditional lands are threatened by extraction techniques and pollutants termed “sustainable.” The related rhetoric is based on small scale mitigation efforts, safety procedures and carbon off-setting gestures, which do not address the destructive acts themselves (Escobar 1996). This section hones in on the embodied, aesthetic and poetic possibilities of assemblages as a way to think differently about technology and sustainability. As a preliminary act of breaking from this history, it is useful to remember that the girth of technology spans not just the machines, mechanisms and tools that come to mediate humans and the world but also include: traditional technologies of sensing environments and working with nature (Nelson 2008); technologies of love, as an approach for encountering and building relations between human and non-human bodies (Sandoval 2000); and a technology of the imagination—the ability to visualize and explore possibilities in the mind’s eye and to see connections that have yet to materialize. These technologies orient us to the world in certain ways, to turn and face in the directions we hope to go (Ahmed 2006).
It is undeniable that much of what has manifested in way of utilitarian assemblages such as freeways, planes, refrigerators, electrical and sewage infrastructure, and so forth, has been developed by men and from a male ontological perspective. Epistemologies and ontologies are gendered, and as ways of knowing and systems of knowledge much of what has been passed down to us has been filtered through male-centric power structures that “misrecognize their own knowledge as all knowledge” (Cresswell 2013, 156). However, an archive of imagined assemblages produced by selected female artists taps into alternative systems that reveal a female eco-ontology of engaging with technologies differently.

Fundamental to this is the question of power, and the way power materializes through what is valued. Female ontology exposes a different value system: one that destabilizes not only what powers (fossil fuel, large scale infrastructures, maximum production), but which reconfigures the material and spatial correlations between power and knowledge, to create new systems of exchange. This has both political and ecological implications.

Ecologies of the Imaginary

Remedios Varo, Alice Aycock, Tania Candiani, Cassie Meador and Hito Steyerl are all female artists who imagine assemblages in their creative work. Together these artists span more than 80 years of production, from 1930 to the present, forming an archive of assemblage imaginings. While Varo painted her assemblages in delicate brush strokes and with fantastical narratives, Aycock and Candiani make their assemblages as three-dimensional structures and mechanized contraptions, and Cassie Meador and Hito Steyerl extend the assemblage through embodied relations. Together these artists reflect thematic interests that might be described as anachronistic technologies, sensing the unseen and communicating through materials. Their
poetic imaginings form a phenomenological language in which materiality is imbued with its own meaning, vitality, and agency.

The term “anachronistic” is often used in regard to elements and technologies that do not fit with a given time period. However, these artists often incorporate elements of the old and the new into their assemblages, and in doing so challenge the idea that time and efficiency are inherently correlated in a meaningful way. Rather than communicating some kind of shortcoming in technological possibility, these anachronistic elements communicate a desire for embodied interactions as a way of sensing the process of energy or material exchange. In Varo’s imaginings, for example, systems function with mechanical elements. They often depend on some form of kinetic energy, the source of which is often atmospheric, and in doing so, combine old technologies with new, emergent ones:

While there is invariably a certain whimsicality informing her representation of scientific and metaphysical ideas, a preoccupation with larger themes concerning the relationship between older forms of knowledge such as alchemy and the innovations of the new science (with its radical questioning of space and time) suggests her avid interest in the dialectic of old and new (Lusty 2011, 56).

For Varo, an engagement with scientific innovations, such as the emergence of quantum physics, extends the possibilities of sensing, interacting and inhabiting a space in between the old and new; her images depict a relation to materials and functions that are cyclical and sustained through natural phenomena. Varo’s objects, tools and assemblages are anachronistic, but they also act as provocations, suggesting other ways to move through time and space, scientifically and magically.
Similarly, the early sculptures, installations and machine-works of Alice Aycock (1970–1980s) also explore functions that combine old technologies with new ones. She creates assemblages that reside somewhere between industrial processes and nascent technologies. Within Aycock’s work, the theme of energy can be understood both as a response to her proximity to questions and concerns of nuclear energy (her father worked in the energy sector) and as an engagement with the theory of open systems—a popular concept in the early 1970s fundamental to advancements in computer and electronic technologies. In the words of Christine Filippone, “Aycock embraced system theory as a metaphor for art making because it permitted her to forge connections between seemingly disparate ideas” (2009, 125). At the time, open systems were not often recognized as having strong connections to ecological movements, yet Aycock’s work often produced systems that had an implicitly ecological nature to them, especially in the role that alternative, often-sustainable energy processes played in her work. For example, *On the Eve of the Industrial Revolution, a City Engaged in the Production of False Miracles* (1978) is a series of assemblages that refer back to medieval technologies in which cogs, pulley systems and mills are proposed to both power and produce contemporary scientific phenomena. The series *The Large Scale Dis/Integration of Micro Electronic Memories* (1980–1981) is an ever-changing maze-like structure that is designed around the newly discovered microelectronic computer chip. “The labyrinth as an open phenomenological system offered many possible avenues for discovery as well as a decided emphasis on the body” (Filippone 2009, 162). The sculpture renders the circuitry physical and tactile and draws connections between the electromagnetic movement of data and the body.

In her series *How to Catch and Manufacture Ghosts* (1979–1981), the work evolved with slight variations but continued to maintain a kind of energy production process. In one
iteration, a series of gears connected to a tracking device hangs above a wooden platform, upon which sits a series of objects: a birdcage, a glass jar, and a number of lemons joined by conductive metals to create an organic battery that seems to power the assemblage. In another version of the same work, large spheres or orbs hang in the center of the platform. The function of these objects is referred to in the title of the work and further described by the artist: “the large, whirling orb, in the center, emits the energy that animates the universe, while the ribbon-like arc of galvanized metal, to the right, is the ghost catcher that harnesses that vital force” (quoted in Filippone 2009, 166). In these works, three types of energy are present: chemical reaction, kinetic, and energy transference through decomposition. The lemon-battery produces energy through an organic chemical reaction. The generative force of the universal can be understood as movement or kinetic energy. And the ghost-capturing aspect might be considered a process of decomposition and energy transference, as a ghost is the vital force that remains after the body no longer lives. While sensing the unseen is almost always present in energy processes, Aycock intuitively connected the relationship between old technologies, open systems and cyclical processes of energy production.

Along these lines, artist Tania Candiani explores structures and systems with cyclical features that hone in on the relationship between sound, language and writing as differing systems of knowledge and knowledge exchange. Yet for Candiani the material systems that form around new knowledge are always rooted in the language in which they reside, specifically the tensions between colonial and indigenous technologies. Focusing on the different powers that emerge through the translation process, Candiani draws connections between original technologies and their transformation or appropriation into ways of knowing, as scientific, geographic and gendered texts. Her objects might be seen as tacit critiques and
material interrogations of normative knowledge-keeping by acting as translation mechanisms that expose the meaning (or power) embedded in modes of expression and interpretation. Yet, Candiani remains optimistic both about her role as an artist in creating new meaning, and about the ways in which technologies interface to provide new information:

I am interested in a deep exploration of the moment of invention, understanding it as one episode of an extraordinary story, which has been evolving in language, approaches, philosophical intentions, meanings. I am additionally interested in how visions of scientific and technological progress carry with them implicit ideas about public purposes, collective futures, and the common good; and how these ideas are in constant evolution not just in technological processes, but in conceptual meanings.

(Adelle 2016)

Candiani’s statement reflects an ecological understanding of technology, systems of knowledge and the co-constructive nature that they carry in space, place and community.

In the installation *Máquina Telar or Loom Machine* (2011–2012) Candiani created a machine object out of fragmented technologies, a combination of both contemporary electronics and obsolete ones, which come together to perform a sonic encounter with materials. She repurposes obsolete punch-card guides once critical to mechanized looms, to transform them into the material agents that trigger and control the electronic sounds. In doing so, the fabric weaving is replaced by the textured sound created by light passing through the punch card holes. By mismatching these modes of technology Candiani employs a form of translation both materially and conceptually. The text ‘handmade’ appears around the mechanical processes, raising the question: where does handmade begin and end? At what stage of laboring does the human hand cease to exist and when does it become mechanical?
Candiani’s work functions, therefore, as an interesting parallel to the Cartesian philosophical system which divided nature and man into separate categories. And in doing so, challenges us to consider: where does one category truly end and the other begin? As Candiani notes, she is interested in the history of knowledge production and her assemblages become a part of that process in repurposing and reclaiming technologies.

In 2015 Candiani was one of four Mexican artists to present at the Venice Biennale in a project titled *Possessing Nature*, in which she re-created a pumping system, reminiscent of the one used by Hernán Cortés to drain the canals of the Aztec city Tenochtitlan as a military act of conquest. However, Candiani’s assemblage acts as a speculative device for enacting what she calls “reverse colonialism,” through the symbolic act of moving water into the gallery space of the Biennale (La Frenais 2015). At the same time, the project draws connections between the colonization of Mexico City, the effect of colonial capitalism and climate crisis. While Candiani’s work doesn’t focus on energy directly, it reveals a critical connection between knowledge, power and technology. Candiani’s pumping system is an act of translation: the assemblage deciphers systems of knowledge as effects on the earth and leverages the imagination in order to see through and cut across systems, to make new meaning, and to connect acts of cultural assimilation with environmental destruction.

In considering the assemblages made by Varo, Aycock and Candiani, and by analyzing the themes of anachronistic technologies, sensing the unseen and communicating through materials, we begin to orientate towards what might be considered a female eco-ontology, one that takes as its starting point our participation with assemblages. As Jane Bennett writes in her insightful social, political and ecological investigation into vital materialism, “Perhaps the ethical responsibility of an individual human now resides in one’s response to the assemblages
in which one finds oneself participating” (2010, 37). Bennett is calling for an awareness of the ways in which our bodies participate in systems, and she is also suggesting that performing and responding differently to these systems, assemblages and structures of power has the potential to open-up, destabilize and re-structure how these systems may work in the future.

The aesthetics of anachronistic technologies have often been used by science fiction and post-apocalyptic narratives to demonstrate that some form of disaster or abnormality has caused communities to revert to turbines, hand pumps, mills, etc. Anachronistic functions are easily read as something askew in time and space, where the old and new function together out of necessity, not intentionality. But perhaps we should interrogate where this assumption comes from, and its embeddedness in the logic of normative notions of progress, and male-dominated notions of linear and rational time. Alternatively, might the incorporation of old and new technologies be a form of intentional design, a method of circular and sustainable practices that encourage embodiment and tactile encounters as a way of sensing scale, of desiring to know the world differently? When Bruno Latour asks: “Is there a way to bridge the distance between the scale of the phenomena we hear about [environmental destruction and global warming] and the tiny Umwelt inside which we witness” (2011, 2), might the assemblages imagined by these artists be a way of reckoning with scale, as embodied-sensing tools? What if we consider this an ontological feature of feminist systems, one that begins to resonate with the familiar terms of composting, recycling, repurposing, as well as harnessing the atmospheres of wind, gravity, sunlight and tidal movements? At first glance, this may not seem like a radical comparison, nor one that get us any closer to actually having access to assemblages which perform these transformational acts in meaningful or substantial ways. However, what does change, by feeling deeply the desire to interact with energy in the ways
proposed by these artists, is that it increases the value of such processes. These are not fantastical or conceptual propositions; they are speculative designs for living in the world differently.

**Imagined Assemblages as Speculative Design**

What if Varo, Aycock and Candiani’s assemblages were considered prototypes for sustainable design? What type of new assemblages might emerge? Take for example the Philips Design Probe’s *Microbial Home* (see Figure 29) designed by Clive van Heerden and Jack Mama, as a lifestyle prototype in Eindhoven, Netherlands. As a living space, the Microbial Home functions through a sustainable circular logic and employs features that we might also consider anachronistic technologies, sensing the unseen and communicating through materials. As the designers describe it in their project video:

The Microbial Home is a proposal for an integrated cyclical ecosystem where each function’s output is another’s input. In this project the home has been viewed as a biological machine to filter, process and recycle what we conventionally think of as waste – sewage, effluent, garbage, waste water. Creating a cyclical eco-system (http://www.vhmdesignfutures.com/project/87).

The *Microbial Home* contains a number of interdependent assemblages such as: a lighting system that runs off of the energy of decomposition (the kitchen Bio-digester compost) and captured methane gas (from human waste); a recycling machine that uses mycelium to break down biodegradable plastics that then go into the bio- digester; an evaporative larder that would replace the use of electrical refrigeration and Freon type chemistry to keep food cool; as
well as innovative ways to produce food within this system (edible fungi and water filtration); and techniques that use bioluminescent bacteria for ambient lighting.

While it is hard to say whether the Microbial Home will remain a bespoke and speculative space, the concepts of cyclical systems and a mixing of old and new technologies are foundational. It is a living space that is powered from process-based functions that harness the energy (senses the unseen) of natural processes of decomposition, off gassing, and evaporation. These systems are thus not much different than the ones imagined by Varo, Aycock and Candiani. And comparing the artists’ work to this speculative prototype suggests how a female eco-ontology might find its way into our daily interactions with assemblages. If making this comparison does nothing more than connect a lineage or an archive of desire and ontological imagining, in doing so we are afforded the possibility of living differently in the world, and that is powerful. It diversifies what we want out of assemblages. And in capitalist terms, it creates a market of unmet desires, and this is an incentive that sets in motion multiple responses, possibilities, and alternative paths forward (Gibson-Graham 1993). To begin to sense the very real ways that energy sources can be rethought and to imagine the way it might feel to live in and with such assemblages is a political act, and one that has far reaching implications. It destabilizes the assumption that our dependency on normative energy is too difficult to redirect—an assumption built into normative assemblages and their power relations.

How then do we begin to connect anachronistic technologies, sensing the unseen and embodiment with material assemblages? Electricity generation as an open system is a helpful site for considering how a female eco-ontology might reorient assemblages around energy consumption and power relations. On the one hand, electricity itself has no material form or byproduct, it is formed simply through atmospheres, friction, heat, and chemical reaction.
However, the processes used to produce large-scale electricity sources can have serious material and ecological implications. As Martin Medina points out: “Electricity generation, for instance, often requires extraction activities (oil and gas fired plants), mining (coal fired plants), and the construction of dams, sometimes very large ones that destroy natural habitats (hydroelectric plants) or pose problems in disposing of the resulting waste (nuclear power plants)” (2007, 87). While sustainable small-scale electrical production devices such as solar and wind turbines still require materials to be built, they do not produce waste in the form of off-gassing, emissions or byproduct. As Medina also points out, however, there is a great amount of energy hidden in unvalued “waste,” whether it is human waste as a source of decomposition and energy transference, or reusable materials that decrease energy production needs. Yet, the rhetoric of energy as large in quantity, scale and capital value restricts the development of these processes. Changing this rhetoric, destabilizing normalizing infrastructures by diversifying energy sources, begins with a desire to engage with processes, scale and embodied interaction (including in the form of behavior) in different ways. As Siegfried Zielinski writes in Deep Time of the Media (2006), one thing is clear: change will occur, and, what we do have control of, as consumers and interlockers with assemblages is, “the ability to influence how long ideas and concepts retain their radiance and luminescence” (2). I would argue that many of the normative sources of energy were never luminous to begin with.

What the female artist imagination does that is so useful for thinking about engagements with technological spaces is it makes sensing the unseen, embodied interaction and interdependence critical aspects to the assemblage, whether that be sensing the electrical potential in sunlight, photosynthesis, friction and moment or sensing the toxicity and distant
pollutants of other processes. As Robert Hobbs states while thinking of Alice Aycock’s machines and the female ontological assemblage, is that they create a “fissure in a closed universe that provides glimpses of heretofore unimagined possibilities” (Hobbs 2005, 2). As I relate to these artist assemblages, I desire to interact with them physically, I desire their means of production in a way that I do not desire to interact with what I might call normative assemblage. The allure of the female eco-ontological assemblage is both aesthetic and embodied, an attraction for a circular nature of production achieved through symbiosis with environments and a harnessing of inherent energies. The anachronistic aspect of these technologies inviting me to know them through interaction with cranks, turbines and kinetic energy production and their scale is accessible and conceivable; it re-orientates me to processes required to produce ecological and sustainable energy sources. As Bruno Latour points out, “all assemblages need intermediaries” (2011, 5). The intermediaries of the female assemblage integrate body and mechanized function and expand the possibilities of the intermediary as ghosts, vortices, vibrant materials and their translation into energy and new systems of power as a powerful resituating of values and relations. Part of the allure in the female ontology of assemblages are the ways in which their function “invites us towards another level of reality” (Harman 2005, 135). But this invitation is not always utopian, and here we circle back to the dark connections between technologies, sustainability and power, the intermediary of materials and power, to ask: who or what labors for us?

The value of process and labor is addressed in the work of both the American dancer and choreographer Cassie Meador and the German video artist and academic, Hito Steyerl, each of whom create works that function as extreme counterpoints to the same question: “what labors within the process of production and consumption?” Both artists deploy dance and light
as metaphors that allow them to performatively engage this inquiry. In 2013 Cassie Meador began the project *How to Lose a Mountain*, for which Meador walked the 500 miles that separated her home from its electrical energy supply. Meador’s project used the body to attempt to draw some kind of proportional relationship between the materials and the energy she consumes from her home, in the form of electricity. By walking the distance that her electricity travels she traces not only the path between home and generating station, but along the way she passes the mountain-top removal site where the coal is extracted, that powers her electrical supply. As a maker, she produces the tacit knowledge about what it feels like to travel distance, like a material to be consumed, which is reenacted in a final dance performance about the experience. While the energy she exerts, as an artist, cannot in any tangible kind of way be reintroduced, compensated for, or subsidized, the electricity that she has used, and the work that generates it, draws a line of connection between body and consumption and energy as labor and power (it is perhaps useful to note these are the same powers found in collective protest, in pilgrimage and in practice). Meador situates her body as that which consumes in relation to the materials used to sustain her body as it lives in her home. At the same time, she labors as both a walker and a dancer as a way to proportionally understand and to know the tacit relations between body, energy, and power.

As a kind of inversion to Meador’s project, Hito Steyerl’s immersive video work *Factory of the Sun* (2015) centers on a surreal story of workers, whose movement—in the form of forced dance—is collected via a futurist version of motion capture technology and used to power an artificial sun. Steyerl’s imagined assemblage is a dystopian and purely digital one. While *Factory of the Sun* is not asking a direct question about sustainability, but more pointedly responding to the questions of oppression in an increasingly digital era, the project
nevertheless functions through the relationship of body energy and solar energy, and effects to produce an artificial sun via the labor of dancers. Steyerl describes her process of devising the project as initially being influenced by the coming together of seemingly unconnected relations between, light, data and speed. She also became fascinated by a Donna Haraway quote: “Our best machines are made of sunlight; they are all light and clean because they are nothing but signals, electromagnetic waves, a section of a spectrum.” And it is precisely their invisibility that makes these machines so dangerous in Haraway’s estimation, for they are “…as hard to see politically as they are materially” (Haraway [1984] 2004, 7). Haraway’s statement implicates sensing the unseen as a critical tool. This logic asks that the unseen be a part of the assemblage, energetically, socially and politically. This requires a different ontological lens, one that feminist artists and their imagined assemblages have labored to create.

Returning to an analysis of Steyerl’s piece, what is particularly interesting to me is the connection Steyerl makes as a metanarrative between energy as light and labor. In the video work, the pleasure of dance is coopted by industrial, if not corporate desperation to maintain a sun-like feature that I imagine has been lost through advanced capitalist and industrial effect. This “dance labor camp” as Steyerl calls it, becomes a spatial imagining in which the object/subject commodity manifests as “condensed, concealed chunks of energy” (Steyerl 2016). The characters in the film whose labor is transferred into light and energy, we note, is uncannily similar to Steyerl’s role as a video artist, whose labor also results in packets of electrons and moving light image.

In the conceptual space between Meador’s and Steyerl’s projects we find two women trying to make connection between divergent ideas in an attempt to get at something new. The eventfulness of their works act like tacit invitations to draw correlations between bodies,
energy, light and power. In locating the ecological undertones of these pieces, I propose that what is at stake is recognizing that there are different processes to creating energy and power and that process is labor-full. How do we orient towards the labor (human and nonhuman) that it will take to create critical and ecological change? The allure of Varo, Aycock, and Candiani’s assemblage is that they do what I alone cannot, and yet their composition of relations, i.e. how they do their processes, draws me in. I desire their interconnection and I long to be a part of their production, to labor with them.

Through the imaginations of these selected female artists we are able to locate the elements and tacit desires that invite us to interact with the world differently. Themes of interconnection and ecological systems emerge from their art, whether it is Varo’s ecology of fantastical process or the workings of imagined machines envisioned by Aycock and Candiani, or the embodied practice of Meador and the digital dystopia of energy dependency of Steyerl. In each of these pieces we begin to locate a line of inquiry in which energy and power are imagined differently, reformatted to fit the desires and orientations of what might be considered a female eco-ontology. The systems, assemblages and technologies present in these artistic works resonate with ecological and political implications. More crucially, however, they establish approaches and ways of relating with processes—creative, material, and transformative—that point in the direction of speculative and sustainable design. All five of these artists are oriented towards systems that harness energy and which produce power through relational processes. To ask where your energy comes from is to imagine yourself bound to every phase of its consumption. Plants eat light, for example. Our consumption of energy too might be improved by viewing all that we consume as a process of eating, ingesting and becoming part of the energy we consume. I long for assemblages that connect rather than
distance me from the input-output and material partnerships, and in doing so allow me to value more fully their material relations. As Isabelle Stengers, a leading voice in speculative design and ecology writes:

An ecology of practices does not have any ambition to describe practices ‘as they are’; it resists the master word of a progress that would justify their destruction. It aims at the construction of new ‘practical identities’ for practices, that is, new possibilities for them to be present, or in other words to connect. It thus does not approach practices as they are—physics as we know it, for instance—but as they may become (2005, 186).

As ontological orientations, artist-imagined assemblages shift power away from contemporary infrastructures, to decolonize and re-feminize energy possibilities by suggesting other ways of engaging and sensing diverse technological and sustainable possibilities and approaches. These imaginings function in an expanded field of energy sources, in which ghosts, planetary revolution, vortices, light, and sound, power assemblages sustainably and through imagined ecologies of other possibilities. Therefore, rather than reading these works simply as fantastical and material storytelling, we should recognize the ways in which they establish a set of values, ontological desires and approaches to enact energetic agents, differently. Such perception of energy attend to a male-dominated history by re-feminizing and decolonizing the oncological orientations on which normalized assemblages of power rest; ecologies of the imaginary destabilize and make queer temporalities in which new energy relations may emerge.

In 2017 The Wellcome Trust curated the exhibit “Electricity: The Spark of Life.” The show presented an extensive view of electricity including scientific and metaphysical historical materials and contemporary commissions. The official exhibition publication was a playful self-help type book that used language of electricity and magnetics to describe human interactions, playing on notions of “attractive” personalities and a “magnetic” presence as qualities that lead to success and happiness. While the displays of the exhibitions attended to the scientific and artistic interoperations, the brochure was a clever way of positioning the historical and metanarrative of other ways of perceiving energy as it related to human interrelations.
The concept of “animal electrics” will fade in and out over time; while being generally discredited by Volta, modern science will find that electricity is an aspect to the nervous system. Similarly, Franz Mesmer’s notion of “animal magnetics” will reappear as magnetic imaging within health practices, a concept I explore further in chapter 4.

https://wellcomecollection.org/articles/thunderbolts-and-lightning

Curie establishes that a gram of radium (an amount smaller than a penny) contains more energy than 100 tons of coal (Dr. Jim Al-Khalili, BBC Documentary 2018, Atom1 ep 2).

The first known windmill to generate electricity was built by the Scottish physicist, James Blyth to generate electric light for his holiday cottage – illumination that only occurred when it was windy (Rhodes 2018, 326).

At the inaugural event of the solar panel installation Carter gave a speech in which he said, “In the year 2000 this solar water heater behind me, which is being dedicated today, will still be here supplying cheap, efficient energy…. A generation from now, this solar heater can either be a curiosity, a museum piece, an example of a road not taken or it can be just a small part of one of the greatest and most exciting adventures ever undertaken by the American people.” The panels were removed during the Reagan administration, and one is now a display item in the lobby of the NRG Systems headquarters. (https://www.treehugger.com/solar-technology/whatever-happened-jimmy-carters-solar-panels-sequel.html). This cultural moment is documented by the work of artist Roman Keller and Christina Hemauer (their most recent project was an installation titled United Alternative Energies, presented in 2011 at Kunsthal Århus, Denmark).

My family visited the Rocky Mountain Institute in 1982. We spent a week living out of our VW bus and participated in workshops and seminars for solar and soft energy approaches. Our meals were cooked by solar cookers and our showers made hot by solar heaters. When we left, my father asked Armory Lovins to sign our copy of Brittle Power (1982) which I have today.

It is worth noting that one of Paul Bogard’s arguments in The End of Night (2013) is that the invention of street lighting and light pollution caused by electrified street lighting made people less orientated to their natural cycles. Humans not only lost a relationship with the night sky and celestial orientations but with the darkness of the night.


The Microbial Home was a collaboration between Philips Design Probes, an initiative to develop new lifestyle technologies with sustainable impact and independent designers Clive van Heerden and Jack Mama, who together founded the design firm vHM Design Futures in 2011. https://www.90yearsofdesign.philips.com/article/67.
CHAPTER 3

Figs. 30 and 31. Scenes from MC6 where I trace how mobility, power and batteries work together to subjugate people and environments. I channel the ghosts of three historical sites, including: the Algerian Revolution with Frantz Fanon’s writing on battery powered radios; a worker’s strike at a battery factory in May 1968 Paris; Hitler’s speech at a dynamo factory; and a future site of lithium ion battery production and events which may or may not happen based on how we practice battery technology. Photo credit: Cáit NiSiomon
Fig. 32. Making a battery during MC6 to power an electric Armonium. Handmade batteries are a way for me to meditate on energy and environmental racism while also generating sustainable and speculative energy processes that do things like recycle waste and collect energy from decomposing biomatter. Because batteries play such a large role in this project, I wanted to explore not just how they could be made, but what I wished they were. I was thinking of anachronistic aesthetics as political and social interventions. I chose to work with clay for many reasons. As mud, clay-earth is included in many creation stories. Clay is the ultimate recycled material. It creates a physical encounter. As porcelain, clay extends into modern design, similar to glass, as a desirable ancient material. Making batteries allowed me to physically relate to materials while developing technical skills of circuiting, wiring, and chemistry.

Photo credit: Geneva Foster Gluck
Figs. 33 – 36. Clockwise from top left: installation in performance space (MC6) of handmade voltaic pile batteries and images of battery material extraction and waste; batteries made during the live performance which provided electricity for stage effects; ambient light made from bio-batteries; detail of text inside batteries; photosynthesis (speculative). Photo credit: Geneva Foster Gluck
There are a few things I want to share with you: I keep a tin of old batteries in the bookshelf near my bedroom. When I open the tin, the scent of tangy metal and crisp acid plume out — an invisible mushroom cloud of leaching chemistry. I’m not sure this is a good thing to keep: the things that are made apparent to me through my sense of smell cannot be kind as they penetrate my lungs and the pores of my skin. I keep the tin of batteries because to rid myself of them is really only to move them out of my awareness: their toxic materials will still exist somewhere else. I want to understand the smell of these old batteries and express what their smell tells me as intricate olfactory information, as stories of extreme corrosion of metals and minerals still reacting to one another, transforming chemistry, weak energy transference and decomposition, subtle ongoing reactions gone to waste, potential un-achieved, unearthed elements, pits and factories. I think about what is inside these petite cylinders of chemical energy, the human and more-than-human labor which they required to arrive in my presence, and, the profit, which they made for so few individuals. I’m not sure how I used their vital juices, but I regret their fleeting relevance.

In June 2017 I read an article published a week or so after Donald Trump’s inauguration. The article, which appeared on NPR’s home page, was written by Marc Bamuthi
Joseph, Artist and then Director of Performing Arts at the Yerba Buena Centre in San Francisco, CA. In the article titled, “My Art is Not a Bridge – It’s a Battery,” Joseph compared art spaces and batteries, and the ways both generate power and mobilize cultural values. Joseph wrote, “How do we expect cultural institutions to move into leadership if we’re not willing to center inspiration in our cultural discourse? It behooves us to think of arts institutions with greater intentionality, to consider them not as repositories of pre-fabricated culture, but as the living infrastructure necessary to mobilize the public imagination” (Joseph 2017). Joseph’s vision of arts and art venues as sources of energy for social change, energized spaces that function like a battery, struck me as an opportunity to think open both arts spaces and batteries, and the social energy of bodies, identities and subjective sensing as political energies of mobilization. While Joseph’s focus was on arts spaces as living infrastructures which respond and support contemporary cultural movements, inherent within Joseph’s article was the relationship between race, class, gender and power, and it was written in opposition to the Trump administration’s supremacist policies. And so, when Joseph ended his elegant statement affirming the critical role of art and arts infrastructure with the provocation, “Can we design Freedom?” I could not let go of the sensation that batteries, domination, and creative culture intersected in numerous ways and that this was a provocation to critically engage with mobility, identity and power, as well as defining batteries in more ontologically pluralistic ways. What might happen to power systems, such as those that undergird the Trump administration, if we think of how power, design and freedom intersect in alternative batteries—seeds as batteries, bodies as batteries, ideas as batteries, cultural movements as batteries, batteries as metaphorical and practical interventions? I wanted to draw lines of connection (power geometries) between social and environmental justice and the ways in
which people are made subjects of energy—electricity—power making as well as wasting. At the same time, I wanted to understand how I personally was a link in the practice of domination and how to find the agency to unlink myself through embodied actions and speculative imaginations.

And so, I began to imagine batteries in my creative work as miniature biospheres of energy, mobile venues powered by the sun, bio batteries powered by photosynthesis, decomposition batteries, performance batteries. I began to build handmade batteries, potato and salt batteries, a series of ceramic batteries inspired by the Bagdad or Parthian Battery, an object that is sometimes referred to as the first battery, dating back to between 250 BC and AD 224. I used these batteries in Magnetic Chamber performances and explored how devising around materials and narratives could also be the construction of a battery—on multiple registers, metaphorically and practically. That summer I camped outside of Hoover Dam, the iconic site of hydroelectric energy, a beautiful desert landscape occupied by stale water and cockroaches (the unbalanced ecosystem of dammed water in the desert?) I drove past Crescent Dune Solar Reserve in Nevada, the only operating utility-scale molten salt power tower on the planet. Its iridescent solar panels in concentric circles around the central salt tower, a mirage in the desert. Not far away I passed the nuclear test sites and uranium waste storage of Nevada's Yucca Mountain. I arrived in the northwest, where almost every street corner had a battery store, shops that provided all types of batteries for survivalists, environmentalists, sovereign doomsday preparators. The whiteness of these spaces, as power accumulators, was impossible to deny. As performing scenographies, the displacement of native peoples in pursuit of utilitarian energy was a theme throughout these places. The opportunities to utilize indigenous technologies of land relations and perceptions of energy were obscured by
aggressive energiescapes; and the history of racism as a tool for accumulating wealth in relations to energy-labor power always just below the surface. I am not sure that my white body laboring to make insufficient batteries communicates or intersects in this history; rather my acts are symbolic labor to tend to toxic electronic and energy-rich waste that effects people of color disproportionately. My batteries are prop/objects to perceive energy-as-electricity differently in relation to the materiality of identity and energy. Through both studio and daily tasks, I asked: What if our batteries were like gardens? We had to attend to them, care for them, grow them in order to extract their energy? What if “eating” home grown energy was like eating a tomato from your garden? You may not be able to survive from it, but you understand how it works—the relationship between materials and processes, like soil, water and sun. Keeping a garden at home is a luxury not afforded to all. It requires space, time and resources such as seeds, water, and soil, simple resources which can be evasive. But to grow a plant is a transformative experience that I believe leads one to appreciate how much labor goes into food, as well as how to care for more-than-human creatures. Plants are solar food chain, decomposition, and soil energies. Sources of energy within cyclical processes as well, as vibrant off-gassing and afterlives. If growing food can make us more aware of the labor involved in feeding the world, can the same be true for electricity? What happens to our understanding of “eating” electrical energy when we labor to produce it? How can growing energy be an aspect of designing freedom?

- MC studio and site-writing.
To say that electricity is racist is not true in any sense encompassed by common understandings of the word. As a process, electricity is beyond emotional, ideological, or subjective perceptions. Yet, how electricity is produced, the institutions, histories, and power geometries that compose utilitarian energy systems, can often be linked to systems of discrimination, control, and dominance (Annecke 2002; Fakier 2018; Hornborg 2013; Lennon 2016). Racism, along with sexism and classism, creates unequal divisions of labor value and spatial value. Such systems of subjugation have provided justification for colonial occupation, the commandeering of resources, and have organized labor and wealth into different and unequal categories, from the time of feudal systems, to the birth of industrialization and beyond. Such energy-rich partnerships often contribute to the materiality of identity and spatiality; in this way energy-rich partnerships, including the seemingly nomadic battery, are placemaking and this is a scenographic proposition that is both ecologically oriented and temporally relevant. By working in an expanded field of scenography (if not also ecoscenography) I aim to challenge the market-driven illusion that batteries as a mobile power source are un-tethered to place, physically and historically.

Such power positions can often be traced back to shared investment in energy production, be it through the labor of enslaved peoples, the notions of private property which grant access to land resources to the wealthy, and/or social (sexist/racist) divisions which allow human labor to have different values. The discrimination formed through energy histories (the labor of materials, animals, and peoples) and energy-as-electricity (as a contemporary harnessing of energy and technologies) are entangled with the discrimination of peoples and a racializing of space which includes environmental racism. For example,
Alf Hornborg argues that technology, specifically modern fossil fuel-powered technology, has displaced slavery, so that it still exists, but technology allows for slave-like labor to occur out of sight, through disparate value systems situated far away and “elsewhere,” often facilitated by the racializing of bodies and cultures, deeming them inferior or behind the time of inevitable modernization. Hornborg explains that the rationale of “technological progress” as viewed by market dynamics is deeply invested in maintaining disproportionate, unequal, and cheap, actually almost free, labor. As he notes, this is a continuation of ancient Greek and Roman practice, which established a system of “delegating work to other beings who are more or less degraded to things” (2013, 48). Hornborg goes on to explain this relationship in terms of modernization and industrialization:

    technological progress has been the privilege of affluent elites, and the very existence of new technologies has relied on the appropriation of resources from increasingly impoverished periphery. The investments in steam technology in the nineteenth-century Britain, for instance, were indissolubly connected to the Atlantic slave trade and cotton plantations in the American South. They relied on continuous unequal exchange of embodied labor and land between the industrial core and its colonial periphery. (2013, 49)

Hornborg characterizes this as an asymmetric flow of energy, one which came into being by and through the subjugation of people. Asymmetric energy systems are present, yet not always visible in the production and distribution of electric energy and electronic technologies, especially in a globalized world. For example, western interventions into “developing countries” often occurs as a power dynamic that Wendy Annecke rightly describes as “[t]he rich get richer and the poor get renewables” (2002). Here, Anneck
identifies the unequal distribution or lack of energy democracy that plays out as global energy policies provide sustainable options for poor countries while avoiding the topic of lowering the consumption of wealthy nation-places. At the same time “waste” from wealthy countries often finds its way to poorer and peripheral spaces. The push and pull of energy production and consumption in a globalized world is a critical question for environmental stability: where materials come from, who has access to them and what occurs after their use. For example, the afterlife of oil, plastic, and CO2 gasses often manifests as discrimination in the form of environmental racism, and the “dark ecology of toxic waste generated through digital expansion” (Morton via Lavery and Finburgh 2015), as the often unthought material infrastructure of algorithms and data speed which come to impact all life forms. Electronics not only consume electrical energy to function, but their making and falling apart are energy-rich events that impact vulnerable peoples and ecologies globally. Electronic environmental racism accumulates through colonial histories, as well as contact with toxins and climate catastrophe experienced disproportionately by people of color.

To say that electricity is racist is to account for ways that normalized energy relations compound racism and discrimination through colonial imaginings and environmental racism (Anneck 2002, Coleman 2017, Fakier 2018). This chapter aims to make visible and sensible the ways that energy-as-electricity assemblages bolster inequality in and through the subjugating of space. Such subjugation occurs as environmental racism and a materiality formed through racism, sexism, and classism (Moten 2017). I use this chapter to think with Frantz Fanon and the transformation of technology, which occurs through decolonizing practices, social performances, and critical consciousness. I also pursue this topic through the battery, an apparatus of energy-as-electricity that is mobile,
discrete, more democratic than centralized infrastructures, and yet it functions as a kind of mediator between power assemblages.

As a future-site of energy utility, batteries will provide new opportunities to store energies that have previously only been available in real-time (daylight hours or windy times), potentially transforming sustainable practices. Predictions for super batteries are often termed the missing links in achieving greater energy diversity yet anticipating how these new technologies will affect people and places is a critical preemptive practice. Media design scholars Anthony Dunne and Fiona Raby propose the term “public engagement prop” to describe speculative projects and objects with an interactive nature that may or may not do what they propose but which instigate critical thinking through their engagement. The term prop-object denotes an artifice, a kind of mimesis to signify an action that is not actually achieved. As Dunne and Raby state, such objects “measure reality against ideals, not the other way around” (2013, 12). Because the battery is poised to radically transform the future of energy relations, attending to it as an emergent prefigurative prop-object is useful for making more desirable futures for all. Dunne and Raby attend to artist crafted prop-objects that generate pluralistic and critical views of energy, sustainability, and progress, often considering the bodies of humans as energy potential and bio-batteries. Yet, such works step gingerly over the racialization of bodies and spaces that all too often provide materials and energies to unequal utilitarian power systems. Such works also highlight the complicated relationship between materials, design, labor, and domination, and at a certain level take individual and cultural determination for granted. My use of the batteries as prop-objects attempts to address subjugation and discrimination of energy through notions of human labor, environmental racism and the potential of more-than-
human collaborations as social and ethical partnerships. I do this by imagining participatory actions of energy production, by making and caring for handmade batteries. Like gardens, these prop-objects “grow” energy that is small, delicate, and collaborative, so that my body and materials form energetic movements together. Often these batteries are unsuccessful, generating very small amounts of energy. However, in the process of their becoming, my understanding of the scales of energy and process relations (materials, movements and reactions) became more sensible. It is my aim that as prop-objects in performative events, these batteries might expand a tactile understanding of energy and power.

When Michel de Certeau notes that, “The more a power grows, the less it can allow itself to mobilize” (1984, 37) he is talking about power which dominates and controls such as state and institutional power structures. We might also imagine normalized assemblages of electrical power as an example of large immobile power. Such structuring of electrical power has prioritized fossil fuel, industrial relations, and ever-expanding mass consumption by and through cheap energy and expanding markets. Centralized national grids are often state-run and designed to privilege fossil fuel and nuclear sources (Bakke 2016). Centralized electrical power has historically been used by and for political aims, and expanded through promises of reliability and cost-effectiveness, and in some instances, restricting access as a form of socio-political control (Fakier 2018; Trentmann 2018). Often when grids are privately owned, they reflect capitalist agendas of maximum profit and output. These are immobile both through infrastructure and market relations, and prefer centralizing power (into wealth) through cheap material relations. Recent events in Puerto Rico\(^3\) and in California serve as strong examples of how centralized non-mobile infrastructures can easily become vulnerable; through racialized government response (as seen in Puerto Rico) and the
consequences of privatized and capital driven infrastructure (as seen with PG&E’s response to fire risks and inopportune electrical shut-downs in California). Both California and Puerto Rico demonstrate the ways in which the climate crisis will impact access to electrical energy via national grid systems.

If de Certeau reminds us that power—large, centralized, and institutional power—“is bound by its very visibility” (1989, 37), we must also remember that in the case of electrical power, there is also a considerable lack of visibility. In fact, making energy production and consumption visible is one of the main challenges for arriving at more sustainable energy futures (Annecke 2002). In the western world, consumption of energy-as-electricity is hidden behind infrastructure and material relations, which occur far away, out of sight, and often at the cost of “others”—those defined by geographic exteriority or “impoverished periphery” (Hornborg 2013, 49). Our digital and electronic technologies, the speed of data and algorithms of convenience are rarely thought back to the material assemblages of power plants and fossil fuel extraction. The very illusion of immateriality of electronic culture, as opposed to transportation and industrial production, allows for the invisibility of electrical energy to persist, contributing to the precariousness of people and environments. Batteries extend this invisibility through their elusive immateriality as they provide electrical energy without physically being connected to the grid.

While batteries present radically transformative possibilities, they are by no means removed from the history of electrical infrastructures and control. Batteries, along with notions of mobility (social, geographic, economic), often lead to a sense of freedom that is illusory. To be free of obvious centralized powers does not mean one is not bolstering other (or the same) forces through different relationships. For example, such is often the case with
current electric vehicles, as most batteries are still charged via coal-powered national grids (Bakke 2016, xiv). At the same time battery power requires its own material relations. While divorcing transportation from fossil fuel dependency, large scale battery production, within normative structures of capitalist growth, which fail to center environmental justice as a primary value, might solve one problem while creating others. For example Paul Brown, a founding editor of Climate News Network and former environmental correspondent of The Guardian newspaper, writing about the future of battery technology states that, “The fastest-expanding industrial sector on the planet is now electricity storage—a battery boom which heralds an end to the need for fossil fuels” (2019). Brown goes on to articulate that this boom will occur by “finding the easiest and most economic” means of production. Such a statement is a warning sign of certain neoliberal perceptions of sustainability embedded in free-market trade. It implies that what is valued are the “easiest and most economic” procedures, and nothing about environmental justice as a guiding value for clean energy policy. Such statements are the exemplar of a continuation of colonialist logic in which mobilized natural resources, materials, and manufacturing are good for everyone—an assumption that is ideologically problematic from a postcolonial and climate crisis standpoint.

As a site of inquiry batteries provide a platform for prefigurative thinking. Looking at how new relationships form through new battery technologies will reflect both what is valued and the ways these technologies are practiced in social systems. In anticipating a battery revolution that will extend the viability of sustainable real time energy production into stored energy, how do we also anticipate and push against unequal power dynamics and discrimination? When Sara Ahmed expresses the desire to “consider racism as an ongoing
and unfinished history, which orients bodies in specific directions, affecting how they ‘take up’ space” (2006, 111), I wonder— how I might avoid always perpetuating the supremacist power geometries of racism though my relationship to energy-as-electricity? I find the battery to be a specifically interesting form of energy technology—by its sheer presence in my daily engagement, it mobilizes and extends electricity away from infrastructure and its dominant appearance in future social imagings. I use *Performing the Electrical* to explore how these connections become visible, and what I might learn, communicate and anticipate if I trace the partnerships of batteries, racism and mobility back through time.

Energy and environmental scholar Myles Lennon writes, “By reimagining energy, unleashing it from its colonial context, we can begin to disentangle the systems through which we change matter from the systems through which certain lives are made to not matter” (2017, 19). I use the battery as a way to visualize and interact with energy relations as they manifest through social divisions drawn along lines of class, race and gender. Such divisions result in power relations between peoples and nations, manifesting as market driven discrimination and environmental racism (Fakier 2008). In the following section, I trace the power geometries that are formed through selected archival footage which relates to batteries in a variety of ways. My intention with the following sites is to perform a scenographic place orientation (Hann 2018) around batteries, mobility, and energy-as-electricity in order to consider how we might decolonize energy-rich technologies and look at the implications this has on identities and ecologies. In doing so, I draw lines of connection between Europe, the Americas, empires and colonized lands, bodies and more-than-human trans-corporal relations, and between utopian battery futures and continued Capitalocene extinctions. I attend to these concepts by using sites which exist as media
archives (electromagnetic and digital materials) to better understand batteries as place making utilities. Also used as projections with my practice, I wanted to implicate myself in environmental and social racism by connecting myself to factory workers, laborers, revolutionaries, habitat loss, extinctions and simple basic energy needs. In a play of scale and temporality I use these spatial and media sites—scenographies of power—to connect colonial expansion and capitalist occupations of energy with political fractions and social transformation. I intend to address the conflict of technologies, aesthetics, and material ecological relations as they connect back to colonialism, fascism, and failed revolutions. I want to do this by drawing a sequence of connections in our mind’s eye—to feel together and with these events and materials as connections, through time and space.

**Scenographies of Power: Batteries as Speculative Objects, Spaces, and Performances**

**Hitler at the Dynamo Factory: Fascism, Electricity and Water**

Excerpt from Performance Voice-over:

*In 1933 Hitler gave a speech at the Siemens Dynamo Factory while standing on top of a turbine, the same technology used in hydroelectric dams; a technology which mobilized European investors of electrical industry into the Americas and other colonially occupied lands. The use of water to generate electricity displaced native peoples, unearthed toxic chemistries and made European investors into rich men. When Hitler spoke to the workers of the Siemens Dynamo Factory, he argued the reasons why they were entitled to prosperity, why they should fear the establishment, and how they could make Germany great again. At the same time in England the fascist party used a lightning bolt as the symbol of white nationalism. These are power appropriations, symbolic acts to manifest destinies.*

*Power Geometries—Water, Land, and Labor*
On November 10, 1933, Adolf Hitler gave a speech at the Siemens Dynamo Factory in Berlin. The footage shows Hitler speaking to a crowd of workers from atop a large circular stage, set with a microphone, and edged with festive ribbons—the stage is in fact a large dynamo, one of the many dynamos made at the factory. The speech, which was the final one in his election appeal, is not recorded as one of Hitler’s more important or controversial public events, yet what interests me is the staging—a scenography in which electronics production and fascist political power came together and resonate into future spaces and places. Specifically, the movement of the dynamo from Europe to the hydroelectric dams of the Americas, and the ways in which controlling water for electricity, has deep ties to neo-fascist policy.

In an act of symbolic staging, the leader of the Reich accumulates power as he rallies his followers, promises his allegiance to them and a vibrant Germany economy, from atop a mechanism which itself makes power. While the factory looms as the unseen darkness surrounding the speaker’s podium, it is also the space of essential employment for the working-class people of Berlin, whose dependency on a paycheck both interpellates them into political rhetoric and makes them reliant on cheap electrical production. Labor, economy, profit, policy, and electricity are all deeply linked aspects of a modern web of power—not just literal industrial and political power but the ideological power which will obscure the relations between neighbors, friends, and coworkers, and which will bring the German people to turn on one another.

In Everyday Sectarianism in Urban Lebanon (2016), Joanne Nucho asks, “what are the ways in which overlapping jurisdictions negotiated between various actors to produce what we have come to understand as sectarian spaces and publics?” (2016,4). While
Nucho’s research addresses Lebanon’s relationship with state power, her line of questioning focuses on infrastructure, including electrical infrastructure as a resource controlled by the state. Nucho maps sectarian divisions, along the lines of utilitarian resources and the ability to maintain livelihoods. This approach could apply to other locations in which a workforce, social and political divisions, and access to energy-rich resources coevolve. Nucho’s tracing of sectarianism as a process of social power relations and utilitarian control in Lebanon form a similar geometry to what is currently occurring in the USA around notions of race, class, and the right to work—at the expense of environmental stability. We might understand divisions of republican and democrat, pro-Green New Deal versus climate deniers as factions of citizenship in which access to resources underlines such views. Similarly, we might note the way that technologies and new industrial advancements along with state sponsorship work to grow political powers through energy-rich Trumpian politics (based on coal, fossil fuels, and relaxed environmental standards). Such are the connections between industry, political theatre, military might, and the need for a paycheck, forms of indoctrination, which history shows to be powerful tools for accumulating support, rallying populations, and controlling people who are hungry, hurting and demoralized.

In 1930s Germany, the Siemens factory was central to both providing jobs to poor urban neighborhoods and to developing the technology of the dynamo. The Siemens company, like so many to emerge from the industrial revolution not only laid some claim to the invention of technology as well as its manufacturing but capitalized on social volatility both locally and globally. For example, while Siemen’s involvement in Nazi politics is well documented, less well known are the ways in which the company benefited from the “modernization” of the Americas, representing how white supremacy was present in the
systems that would bring electrical energy to the Americas, via foreign owned (white European) utilities.

By the 1890s the Siemens & Halske (S&H) company had opened the Technical Bureau in Mexico City under the name S&H Despacho Técnico México and Compañía Mexicana De Electricidad. Under Siemens management, the companies proceeded to develop numerous enterprises, as is described on the official Siemens historical website which states:

… the agency acquired its first major orders, including one for the construction of Mexico’s first steam power plant, Nonoalco. In connection with this project, a separate company—Compañía Mexicana de Electricidad S.A.—was set up in the nation’s capital in 1897. The power plant project was also the German engineering industry’s first major order in Latin America. That same year, the regional office installed the entire electric lighting system for Mexico City. Beginning in 1903, Siemens was involved in the construction of the country’s largest hydropower plant, which is located on the Necaxa River.


The damming of Mexico’s rivers by foreign-owned companies underscores the ways that electricity, as a modernizing force, benefited European investors, infrastructures, and future practices at the expense of local and indigenous peoples. We might trace similar events across the Americas as notions of progress and modernity framed electric energy as beneficial to all, when in fact, it negatively and disproportionately affected native communities and ecologies.
Dynamos and dams\textsuperscript{34} are not necessarily mobile technologies in the ways that batteries are, yet they expose a different type of mobility. The expansion of electrical energy in the Americas was not merely as modernization and incorporation of technical advancement; it was, in many instances, the mobilization of fascist and racist infrastructures that capitalized on their legacy of white elitism. From this perspective, mobile electrical technologies are quintessential to modernity and coloniality, two sides of the same coin as Walter Mignolo refers to it. Dynamos and dams also perform a mobilization of energy by controlling water. In the American Southwest and Mexico’s Northwest, issues of water control are critical as the Sonoran Desert becomes more arid due to global warming. In the course of dynamo technology and its application in hydroelectric dams, we can observe both mobilization of western ontologies and ideologies, as well as ecological disruption. So much that the two are indistinguishable from both one another and to the social disruption which is buttressed by supremacist power. As noted on the website of “Ecologies of Migrant Care” organized by the Hemispheric Institute for Performance and Politics, one of the causes and repercussions of the mass migration of Central Americans refugees is their displacement from traditional lands and livelihoods by globalization and the need for land resources. Additionally, once people have left, their absence opens the door for privatization and “other concessions granted to large mining ventures [and] hydroelectric dams.” Through the contemporary displacement of people for technological and energetic production, we can trace back, through dynamo technology, the ways in which people are interpellated into systems at the cost of other people.

Expulsion, as a technology of governance, creates exploitable bodies and lives, silences activism, political opposition, and critical voices, and empowers rule by
dissuasion and terror in order to service a new cycle of accumulation by dispossession. (https://migration.hemi.press/expulsion-resistance/)

This passage echoes the words of Hornborg that appear earlier in this chapter, and also make the point between central and peripheral, accumulation and dispossession, production and destruction; which further highlights how expulsion from traditional land is in effect a forced mobility.

At the same time that Hitler stood upon the dynamo in Berlin, not by coincidence, in the UK the British Union of Fascists flew banners depicting a lightning bolt as their emblem of white supremacy. This is a creepy side to electricity, the appropriation of signs of power, of nature and prehistoric phenomena of power, all convoluted into new power-making. Throughout ancient cosmologies, the power of lightning and thunder are deeply associated with the power of water, the approach of rain and food energy. As the water protector movement states, “Water is Life.” While water and lightning bolts are cosmologically linked, energy-as-electricity is also profoundly related to water, water shortages, and contaminations. Because water is a necessary component in almost all industrial processes, energy production and electronic manufacturing, access to water has been, and will continue to be, a site of power. How we collectively perceive and interact with energy systems and their ideological underpinnings determines relationships between land, water and suprexic worldmaking. Hitler on the dynamo and the history of the Siemens corporation exist as a site, documented in light particles, of the many collaborations between science, technologies, and power—the mobilization of ideas that contaminate.
Battery Powered Radios of Revolution

Excerpt from Performance Voice-over:

In 1959 Franz Fanon, a black Martinique activist, described the role of the radio technologies in Algeria’s fight for independence from French rule. He explained that in a dying colonialism networks of communication are critical for revolutionary change. His vision rings true for both historic colonial occupation and contemporary events like the Arab Spring where socially accessible media played a critical role. Yet Fanon also notes that battery powered radios were critical as state electrics were used to control people—power outage to the people. This was the beginning of a battery black market. For Fanon the mobile energy was unfinished business. Today electronic waste dominates lands, occupies places, and bodies as toxic possessions sensed and experienced by those who are outside of power.

Power Geometries – There is no “away”– no “other”

In A Dying Colonialism (1959), Fanon identifies the tension between technology, coloniality, and communication by considering the role the radio played during the Algerian War of independence from French colonial rule (1954-1962). During the course of the revolution, the radio became an integral form of connectivity as the technology provided a fundamental resource for communication and cohesion amongst the Algerian people. Which in turn, contributed to successful independence from French colonial rule (one that dominated and discriminated on grounds of race, religion and a rhetoric of tradition versus modernity). Fanon’s analysis of the battery-operated radios of Algeria’s revolution exposes how the desire for independence and social self-determination transformed the radio technology from a tool of the colonizer into an instrument of the people. Using the example of the radio, as a sound-information-communication scape, I want to make the comparison between radios and cell phones, between current social media platforms and the Hertzian spaces of radio broadcast in the early part of the twentieth century. The batteries in our
phones, like those of the radios, provide a mobility, an untethered link to information that requires greater interrogation into the illusion of their nomadics. We must ask: what is being mobilized through the electrified ether and how can the materiality of digital communication be decolonized?

As Fanon explains, the radio was initially perceived as a tool of Algeria’s French colonizers; it was a technology that occupied radio waves and sound spaces with French-European language and cultural values. Despite the local broadcast being called Radio Alger, it served more as an “echo” of French Nationalism with Paris as its center (1959, 69). Before the revolution, not many Algerians owned a radio, not because they couldn’t afford them or appreciate the technical capability, but rather, the technology offered them no relatable service. Radio broadcasts seemed to reaffirm a European centrality, where the broadcasts were viewed as an extension of French colonialism. The foreign technology transmitted into the home, shows, stories, and other audio material that were often at odds with cultural traditions and narratives that were offensive to Islamic family and cultural values. It was not until 1956 when Voice of Free Algeria began to appear on the airwaves that the radio shifted from a tool of occupation to a tool for social transformation.

Organized by Arab speaking Algerians who resided both within and outside of Algeria, The Voice of Free Algeria united the Algerian diaspora through the radio transmission, and allowed them to speak collectively, in solidarity and from multiple perspectives. In doing so, the broadcasting challenged French propaganda, which attempted to isolate occupied Algeria from events taking place in the rest of the world. In order to hear the broadcast, pamphlets were secretly distributed announcing the broadcasting schedule and wavelengths, which needed to change often as to not to be detected or “ jammed” by the
French military. As Fanon notes, the French army was “highly trained … in modern wars, past masters in the practice of “sound-wave warfare” (1959, 85). Despite the obstacles of jammed transmission, the radio’s social value and function transformed almost overnight. The rapid shift in the technologies’ social role also exposed other vulnerabilities of the technology—which required access to radio waves and electric energy to power the receivers. As Fanon writes:

In less than twenty days the entire stock of radio sets was bought up. In the souks trade in used receivers began. Algerians who had served their apprenticeship with European radio-electricians opened small shops. Moreover, the dealers had to meet new needs. The absence of electrification in immense regions in Algeria naturally created special problems for consumers. For this reason, battery-operated receivers, from 1956 on, were in great demand on Algerian territory (1959, 83)

Even with a radio receiver in hand (radios were also eventually banned from importation), Algerians needed two more things to experience *Voice of Algeria*: access to radio waves (electromagnetic spaces) and mobile energy supply (batteries). Controlling the radio waves and access to electrical energy was a critical aspect of socially controlling and dominating the Algerian people by the French occupation. I will return to Fanon’s writing on Algeria in the next section and use Fanon’s reasoning to speak to the decolonization of technologies through embodied practices and social performances. In closing, Algeria’s revolution reminds us of the ways in which warfare and militarization, were not limited to the aggressive force of guns and physical violence, but a violence that was enacted by controlling information, communication, knowledge, and access to energy.
The Wonder Factory: A Battery Maker

Excerpt from Performance Voice-over:

*In Paris sometime in May 1968, a woman stands outside of The Wonder Factory, she is a battery maker on strike. She demands that the factory provide safer working conditions, she is not speaking of politics, she is speaking about how it feels, smells, and burns to work in the factory. She feels the toxicity, the power of chemistry and value of profit at the expense of skin and lung. She is a laborer who desires healthier atmospheres, she is a ghost of a failed revolution.*

*Power Geometries – when selfcare is Earth care.*

The footage of the Pile Wonder or the Wonder Factory, filmed during France’s May 1968 student and worker uprising, shows a young woman in protest outside of the factory gates. While the majority of the other workers file dutifully back into the factory, having accepted the terms to end their strike, one worker refuses to return to the factory. She is a young woman, known only as Jocelyne, and she continues to voice her demands. Half shouting and half crying, she repeats, “No, I’m not going back. I’ll never set foot there again! Go and see for yourself what a shit-hole it is … what filth we work in…” (translation from archival footage re-released as the *Reprise* by Hervé Le Rox 1996). The figure of Jocelyne in the footage from the Wonder Factory is unique in a few ways: she is the only female in a crowd of men, she is young in relation to the other workers, she presents herself as well kept and stylish, the white of her shirt and headband are bright in contrast to the sea of gray and black around her, she obviously cares for herself and her presentation despite being in the midst of a factory strike. Her individual appearance parallels her individual stance as she alone does not accept the terms of ending the strike. She will not return to the factory and holds her ground, which is grounded in the space of in-between and untethering,
she is neither a loyal worker nor an independent student (like those filming the strike). She is what Rosi Braidotti would call the female nomad (Braidotti 2011), she belongs to no singular place or group, not the factory nor the union which undermines her demand for better working conditions, nor the students of the revolution who are financially free to walk away from University classes. While being denied full entrance to systems and institutions, her loyalty is to the moment and to a space she imagines arriving.

That this event takes place outside of, but within the visual and spatial framing of a battery factory is symbolic and poetic, and yet also communicates a truth inherent to almost all spatiotemporal relationships that occurs between those who desire different systems of power and utilitarian energy production. Social mobility and the illusion of mobility are interpellated (to use the Althusserian term) into systems of power by the way those systems function. The illusion of independence, indicated by the battery and its accumulation of relations is both the site for revolutionary imaging and Wonder-full illusion—the invisible tethers which captivate us, hypnotize us even, into relations.

Rosi Braidotti considers the positionality of the female/feminist nomad in relation to globalization, defined by the movement of peoples, materials, and information always dependent on the factory and the worker as energetic actants. “Given this new historical trend towards “trans”-national mobility, it is crucial for critical theorists and cultural critics to rethink their situations and their practices within this scheme” (2011, 23). For Braidotti, what this state of mobility brings about is a “crisis of values,” which in terms of the feminist nomad is “the opening up of new possibilities” (23). While Jocelyne stands in the ideological atmosphere of youth reimagining their futures, her objections are not voiced as ideological statements. Rather she is arguing her stance based on her corporeal experience.
of working in the “filth” of the battery factory. By emphasizing the body and its sensing, she rejects the rational, reasoning, and essentialism of the scenario. Within Braidotti’s vision of the feminist nomad, “The body refers to the materialist but also vitalist groundings of human subjectivity and to the specifically human capacity to be both grounded and to flow and thus to transcend the variables—class, race, sex, gender, age, disability—that structure us” (25). Here I return to one of my core questions—what would it mean for electricity to be both decolonized and re-feminized? To return something of meaning and power to the material relations of work as ritual, production and consumption.

I want to draw a line that connects the figure of Jocelyne to the people of Algeria some 20 years before and to the power of the institution and the factory, which benefited from French occupation. As a foreign-owned institution, it is connected to a web of energy relations, workers and dominated peoples. The interpellation of mobile energy binds Jocelyne to the factory and the factory to colonial capitalism in Algeria. Sarah Ahmed articulates the relationship between institutions and interpellation, while her analysis centers around identifying “whiteness” within institutions, which functions as a kind of normative baseline. In using the following passage, I want to consider the way that participation in institutions leverages mobility by way of exclusion. This can occur as racism, sexism, and other normative systems of domination and control:

[I]nstitutions become given as an effect of the repetition of decisions made over time, which shape the surface of institutional spaces. Institutions involve lines, which are the accumulation of past decisions about “how” to allocate resources, as well as “who” to recruit. Recruitment functions as a technology for the reproduction of whiteness. (Ahmed 2006, 133)
Jocelyne is a white, French woman; her institutional “interpellation” into a white institution functions to bolster the relations of that institution, and her recruitment is founded in both her whiteness and her lack of financial stability. I believe this power dynamic is similar to the contemporary discourse on coal mining, fracking, and other forms of extraction economies. Institutions hail individuals and create systems where even outsiders are brought in (as a term of institutional dependency) this liminality functions as a vacuum, an atmosphere without traction, where phenomena occur in insolation, and in which the illusion of mobility resides. In the case of the Wonder Factory, the production of the battery and the power of the factory, in relation to politics and economics, restricts the mobility of social change. At some level, scenographically at least, we understand the spatial performance of this event to be about power and mobility on multiple registers. We can draw lines of connection between technologies and batteries exported to Algeria and the institutions that continued to prosper through colonial and capital domination. Pitting the white working class against other cultures, peoples, and the environment has been a very lucrative cultural performance for both white people who benefit from their racial privileges and for corporations and institutions who benefit from cheap labor and land-based materials via racialized justifications. It is not hard to imagine that Jocelyne, as a worker in the dirty Wonder Factory, benefits from the batteries that are sold in Algeria at the time of her protest, as would previous workers some 20 years before. It is not difficult to link the maker of technology with the systems, both positive and negative that are perpetuated through them.

According to the historian Fred Nadis, there are historically two forms of electrical knowledge. One is the knowledge that comes from the making of electrical instruments and
devices, and the second is the knowledge that comes from theoretical questions, the answer to which will inform the tools that will eventually be needed (2005, 24). What Jocelyne’s maker knowledge tells us is that the chemistry of batteries is dirty and that the factory doesn’t care for the protection of her health or those around her. She does not articulate this as an ecological concern, she is simply concerned for her wellbeing and imagines another way of working. “The imagination is not utopian, but rather transformative and inspirational. It expresses an active commitment to the construction of social horizons of hope” (Braidotti 2011, 14). Jocelyne imagines a different way of life and this allows her to keep her footing as the last striking worker. It is her desire for change, and her ability to feel both the toxicity of the space around her and its potential to function differently, that her actions and liminality become expressions of hope.

Lithium Yellow and Flamingo Pink

Excerpt from Performance Voice-over:

Into the future; anti-mountains and lithium ion batteries. The world’s largest source of lithium is concentrated in lakes of salt in central and south America, watery places which are also home to most of Earth’s flamingo populations. This is a story told in colors and frequencies. Lithium is a salt-like mineral that, when mined and processed, corrodes into a beautiful yellow, a strong chemical, almost a neon acrid tangy color, its energy-storing capability somehow communicated by its color. There is also a connection between this place of salty shrimp, and the pink feathers of flamingos. A different type of chemistry in which the fleshy insides of cotton-candy-colored krill transmute into the fine feathers of the pink birds, now threatened by habitat loss. So that the yellow frequency of future batteries and the pink of ancient birds are now pitted against one another by the demands of electrical energy storage, and the batteries that will power utopian dreams. Not too long-ago lithium’s primary use was in the treatment of depression—now we treat our discontent with disposable electronic remedies powered by all sizes of batteries.

What is a battery?
Body batteries, seed batteries, place batteries, idea batteries, imagination batteries

Power Geometries—future extinctions
Flamingo pink and lithium yellow connected, perhaps canceling the other out, power geometries formed through batteries—a story told in colors and electromagnetic frequencies. Color saturation, electronic light-color, the aesthetics and richness of image so hard to trace back to their many other bodies as the materiality of media. The lithium fields, lakes, and mines are also where the world’s largest population of flamingos live. These are the Chilean flamingos of the Atacama Desert who have lived in the region for countless millennia. Chile is also home to the most lithium salt flats anywhere else in the world. And so, the yellow frequency of future batteries and the pink of ancient birds are now pitted against one another by the demands of electrical energy storage, the batteries that will power the mobile dreams of privileged humans. Electric cars and mobile energy supplies are good for reducing CO$_2$ emissions; mining the lithium they need to run on is bad for flamingos. But, is it also “bad” in other ways? Here we might return to the notion of guilty knowledge (addressed in Chapter 1). For me the guilt is not necessarily that we rely on batteries, or that our technologies will inadvertently hurt some while at the same time improving a quality of life for others, but that, the domination and speed of development is so very focused on and deeply connected to, a value system which does not attend to ecologies. I am speaking not only of environmental ecologies but also of deep futures, of cyclical and sustainable development. How do we balance energy needs and a desire for a healthy Earth? How do we transform technologies that function within a colonial logic to make space, economies, and values of other systems of electrical and ecological possibilities?

Not too long ago, lithium extraction was a “minor business,” functioning primarily for medical treatment of depression. I want to present the journeys of this mineral: from the
chemistry of internal and external happiness; from physiology to consumer and market affordability, financial prosperity and economic progress; and the social performances of behaviors and aesthetics. The internal and external atmospheres of pleasure are not so easy to separate anymore. Because materials like lithium transform in value and purpose, how do we apply this transformative nature to how energy-rich material relationships will evolve in the future? How do we value the connections between us and the more-than-human world, to imagine a future not of extinction, but one in which we feel good through our energetic and material relationships?

Transforming and Decolonizing Technologies

Returning to *A Dying Colonialism* (1959), here Fanon considers the decolonizing events of the Algerian Revolution, as seen through the perception and social performances of radio technologies. In this account, batteries afforded radio communication to function beyond the structured and controlled space of city centers and the electrical grid. Communication and information were, therefore, less easily controlled, less predictable, and deterritorialized. The battery allowed for a nomadic and independent accessing of information, functioning similarly to the way that cell phones and social media do now. At the same time, batteries were a desired object, social prop, actant, and apparatus that drew lines of interdependence between material, labor, and production spaces. With historiographic vision, I read the battery as unfinished business in the social transformation of Algeria and in Fanon’s understanding of radio technology. I want to draw another set of power geometries that form as dark-ecology through the normative production of batteries. Throughout the African continent, batteries cause serious health risks and environmental
contamination due to their material needs and extraction for cellular technologies and the unregulated waste of cell phone batteries. As a speculative provocation, what would a technological transformation, as described by Fanon and the radio, look and feel like were batteries not imported through global commerce? What if they were packets of energy chemistry charged by and through the daily social life of the Algerian people? How would the battery function differently through material and social relations? In order to think about the revolution and nomadic energies afforded by battery technology, we must first explore Fanon’s account of the performative and embodied actions that facilitated the technological transformation of a colonial technology to that of a communal technology.

Fanon notes that when the broadcast of *Voice of Free Algeria* was jammed or silenced due to military surveillance, a network of embodied transmission emerged in which word of mouth transmission stood in for the vanished broadcast. Traveling between individuals, buildings, windows, public and private spaces, cafes, streets, and whispered conversations, the information was passed on and performed by a network of live voices and bodies (1959, 78). In places where regional dialects meant that not all the information of the broadcast was fully understood, people still gathered around their radios to collectively and physically enact their commitment to Algerian independence. Fanon acknowledges that this, an interpretive discourse between what was actually heard and what was understood, implicated and passed along by intermediary voices, was a process of authoring a new national identity independent of French colonialism. This process functioned as a kind of performative and participatory storytelling that helped materialize new national ideals in the minds of the people; by performing and practicing the technology’s role in social embodied space anew.
Using Fanon’s writing on the radio’s social transformation in Algeria as an example of how technologies change in their social use and perceptions, I locate a kind of blueprint for rethinking and performing new technologies of energy production and consumption, particularly through Fanon’s description of embodied participation in supplementing the radio broadcast by and through people. Such events are similar to the ways that the people’s microphone of the Occupy Wall Street movement functioned as an undetectable, non-aggressive form of community protest. As Yates McKee points out in Strike Art (2016), both the Occupy movement and the Black Lives Matter movement shared activist features of embodied and visual-aural encounters as atmospheric interventions. I see a methodology of sonic embodiment and repetition shared between Fanon’s notion of decolonizing technology, Occupy Wall Street, and Black Lives Matter. I am also reminded of the sculptural prop-object made by Anishinaabe artist Rebecca Belmore (1991), who created a megaphone and voice amplifying object in order to speak directly to the land and Earth as an eco-political intervention. Were it that our phones and cellular tools were no longer colonial technologies leveraging the cheapest forms of extraction and production against the health of “other” people, we too would speak differently to the Earth through and by our use of communication technologies. We would be, in essence, communicating a different story to the Earth and one another—a truer revolution of globalized communication.

Occupying the spatiality of sound is made possible through the materiality of sound and language, both in meaning-making and the qualitative difference between languages, so that language is not only historical and translatable but also capable of producing symbolic soundscapes. This materiality of sound is a concept that links spatial practices with radical aesthetics and sonic interventions (Moten 2003). Sound is also atmospheric, used to evo
emotions beyond language; it is an orienting device aesthetically and spatially. When the World Peoples Conference on Climate Change and the Rights of Mother Earth held in Cochabamba, Bolivia (2010) called out for a “decolonizing of the atmosphere” they did so from the positionality as indigenous peoples animating other systems of knowledge to communicate their worldview through soundscapes that counters western rhetoric (McKee 2016, 197). Here, we might understand more clearly the way that sound and communication contribute to atmospheres of pollution and transformation. Sound also occurs differently among humans and other species to form layers of reality, of what is heard and what is not. When Fanon concludes his thoughts on transforming technologies, he states that, “After the war a disparity between the people and what is intended to speak for them will no longer be possible” (1959, 97). My hope is that this statement can be true as it extends not just through language and freedom from colonialism, but through the way we collectively speak as consumers, as participants in processes of control and domination via technology and energy. My desire is for a collective voice that calls for a decolonized atmosphere.

Transforming material relationships and transforming technologies occurs through both ideological and performative reorientations, as we saw with the transformation of radio technologies in 1950s Algeria. The next step would be integrating new and alternative forms of mobile energy, taking what the battery allowed then, and pushing notions of separation from concentrated power structures through new sustainable and cyclical possibilities. At the same time, for those of us who have an easy and unthought relationship with centralized, efficient power, the space made through sonic and embodied sensing can serve as a reminder, a sensor for knowing the energy systems, the places, and spaces to which we are bound, energetically. Myles Lennon proposes that Black Lives Matter (BLM), as a
movement and methodology, forms an intersectional relationship with the future of energy development. Lennon argues that,

renewable energy technologies and the anti-racist metaphysics of the Black Lives Matter movement have operated as a material-discursive node enabling these coterminous shifts, simultaneously infusing activist spaces with a technoscientific outlook and attuning energy experts to ethical matters beyond society’s “energy needs” (2017, 19).

Through the lens of BLM, Lennon envisions a place where “people have the power to transform matter beyond the scope of top-down energy policies” (Lennon 2017, 20). Energy democracy requires shifting our perceptions of energy and the structural relationships of technology which form through energy use. This is achieved through social performances and experiential encounters. In his poignant assessment of decolonizing energy, Lennon recounts an experience of Saidiya Hartman, an African American female scholar who spent time in Ghana attending to the legacy of slavery and her ancestral relations to place. While Lennon’s use of Hartman’s experience underscores the connection between legacies of slavery and electrical distribution, I am interested in how Hartman’s revelations come about by way of a tacit and haptic experience; how the relationship between her body and a battery-powered flashlight in the particular space of Ghana led to a shift in perception. Hartman writes, “I... feared [my flashlight] was the equivalent of the pith helmet worn by colonial administrators. Illuminating the world seemed like an act of violence, when everyone else was willing to fare in darkness” (Hartman via Lennon, 26). Hartman, no stranger to the many forms of institutional discrimination, was not taken by the role the technology of the flashlight or the battery played in her reconceptualization, rather, she feels
her relationship and dependency on the instrument in relation to those around her. “My flashlight was a defense not against dark, dark Africa but against my own compromised sight…” (Hartman via Lennon, 26). This “illumination” occurring in relation to space, atmosphere, and the energies around her contribute to seeing the world and her place in it, differently. Lennon concisely articulates,

In her efforts to confront the legacy of an energy system that had enslaved her ancestors and de-mattered black lives, those lives came to matter only when the failures of modern electricity demanded a new engagement with materiality. Importantly, this did not entail a full-fledged abnegation of modern forms of energy. To the contrary, she depended on her flashlight to illuminate that which she previously had not seen. Indeed, transgressive encounters with matter do not necessitate Luddism. (2017, 26)

Extending Lennon’s thinking through Fanon’s account of transforming the technology of the colonizer into a technology used for and by the people of Algeria, offers a connection in viewing how technology can respond to and be shaped by social, ideological and embodied re-enactments (a topic I return to in Chapter 4). Such transformation occurs through perceptions, relationships, and embodied experiences communicated as new and other social performances.

Returning to the battery as a metaphor, utility, and future prop-object of the sustainability movement, I make batteries alongside archival events linked to one another through mobile energy production and use. “The focus on practices also allows production to be named historically so as to situate it with respect to existing political mobilization” (Randy Martin via Moten 2017, 35). Questioning how we practice battery technology, rather
than focusing on what the technologies afford us, productively highlights how technologies evolve through their use. If we desire energy storage that is sustainably sourced, recyclable, and accessible to all peoples, to be used in diverse systems of energy production, we must use them in such ways, and sometimes, this use becomes speculative. If, as energy historian Harold Wilhite says, “Things are the bearers of predispositions for consumption” (2013, 66), I use making batteries as a way to explore how mobile-energy (in the form of battery technologies) reflects the ideological spaces from which they came. Even as they call, or to use Althusser’s term, hail people and materials in as subjects of asymmetric energy flow, and systems of supremacist worldmaking.

As spatial performances, sites of battery production and consumption allow me to frame the battery as an object of performance, a prop, a co-performer (an actant), and an atmosphere-maker (ecologically and phenomenologically), in sites of worldmaking that reflect how the world is made in place. By attending to batteries and mobility through a series of spatially interconnected events, I aim to make visible the discriminatory power relations and their embodied performance as social practices. Anticipating that batteries are the future of sustainable energy, Performing the Electrical examines how we collectively, with our bodies, our human and more-than-human senses orient them (batteries) towards decolonized futures.

28 I borrow the term afterlife from Heather Davis and her writing on plastic, 2017.
29 I use the word sexism to include any form of gender discrimination; sexism is not binary discrimination between men and women but applies to all peoples who are discriminated against because of their gender orientation/performativity.
30 Dunne and Raby write about some noteworthy projects which have taken up the utilitarian nature of batteries as speculative prop-objects. Examples include Flypaper Robotic Clock (2009) designed by the artist collaboration Auger-Loizeau which proposes to use the bodies of captured flies as microbial fuel cells to power the timepiece. Auger-Loizeau also developed a project titled Afterlife (2009) in which people, after death, are made into the chemistry necessary to produce an “afterlife” battery, which extends their agency into the life of the battery. Not only does the use of the battery take on new significance, as it is animated by a
loved one’s remains, such batteries propose an intimacy of energy consumption not normally felt. In The Golden Institute (2009), digital artist Sasha Pohflepp proposes a fictional government institute that promotes sustainable energy in which batteries allow for an economy of energy harvesting and exchange, a utopian vision explored through video and architectural miniatures. In the dystopian project SlaveCity–Cradel to Cradele (2005 - 2008) made by the design collective Atler Van Lieshout, the work frames human bodies as sources of biofuel for small energy-suitability community, so that one’s social value determines how one contributes or becomes energy for the community – as either decomposing matter or caretakers of the system. The project manifests as a collection of schemas and installations where body energies are reduced solely to their utilitarian value. As a counterpoint to these works I think of the work of Uche James-Iroha, a Nigerian artist who in 2014 made a series of photographs commenting on Nigeria’s relationship to electricity and Wole Soyinka who in 2017 initiated a lecture and mobilization project titled “Light up, light in: Interrogating the nexus between electricity and basic education in Nigeria.” Iroha and Soyinka’s work also make present the impact of batteries on place, specifically the e-waste and toxicity caused by battery production and waste in Africa.

31 After Hurricane Maria (2017), the US government was notably slow in responding to the needs of Puerto Rican citizens. Puerto Ricans found themselves as though stateless, untethered yet bound into government power through infrastructural and institutional dependency, most apparent in the electrical infrastructure. At the same time, grass-roots response to Hurricane Maria in Puerto Rico illustrate how communities invested (when possible) in small-mobile energy systems rather than waiting for government initiatives and national infrastructures to repair their damaged grid. When, for example, Elon Musk (and other clean energy providers such as the San Francisco based company Sunrun) donated solar battery storage systems to aid Puerto Rico in its energy needs, the essence of the proposal was to detour the dysfunctional national grid infrastructure by way of solar-generated and battery stored electricity. In many ways, the aid of these private organizations represented a potentially profound shift in energy relations, had the technologies been able to sufficiently assist Puerto Rico in the aftermath of the hurricane. The response illustrated a kind of utopian vision for sustainable energy made possible by battery storage where centralized infrastructures and fossil fuel-based energy were bypassed by small localized solar-battery technology. Yet, what played out in the months following Hurricane Maria, was neither a success story for sustainable energy nor the repair of the island’s electricity infrastructure. Repair of the infrastructure has not occurred even two years after the storm. Puerto Rico also serves as an example for sustainable energy skeptics to support an argument that these approaches are unreliable, unstable, and deeply flawed. As climate journalist Alexander C. Kaufman noted in an article published in the Huffington Post in 2019, such arguments point to Puerto Rico and the unmaintained “solar graveyards” as an example of clean energy inefficiency. While it is true that a number of solar panels and storage systems are in a state of disrepair, Kaufman points out that government restrictions, non-collaborative policies, and regulations hampered the effective integration of these energy alternatives (Kaufman 2019). At the same time, Tesla and others who donated alternative energy technologies are blamed for not providing sufficient staffing and training to manage their upkeep. Puerto Rican communities who genuinely want to integrate clean energy are now faced with the additional challenge of having to repair the reputation of sustainable energy on the island. Events in Puerto Rico (as well as other places in which sustainable energy arrives in the form of social aid) illustrate two aspects of transforming electrical technology. First, that community engagement and people practicing, maintaining, and caring for technology are critical for making new approaches stick in place (Coleman 2017, 9). Second, technology alone cannot solve a problem; the effectiveness of these systems requires community participation. When this is not the case, the efficiency of innovation is mitigated by a lack of upkeep and a workforce dedicated to their maintenance. (The technologies were like planted gardens with no one to attend to watering or weeding). Additionally burdensome, the responsibility to manage a possibly transformative scenario fell upon people who were both historically and presently fighting for their basic human rights. This is a power dynamic which occurs where people in the midst of disaster and trauma are expected to maintain and care for new sustainable initiatives while those not in trauma sit back and observe. I believe such power dynamics compound discrimination and clean energy skepticism while displacing responsibility. Without the governing social and financial resources needed to maintain these technologies, they failed, at least in the eyes of their critics. With a government that is critical of sustainable energy “efficiency” and productive capacity to “fulfill” energy needs, is it possible that the events in Puerto Rico benefitted centralized power? A benefit that occurs through the perception that solar and battery storage are not robust enough to serve “their” needs, how could they possibly fulfill “our” needs? Puerto Rico provides an
opportunity to see the subtle ways in which privileged peoples, often white, look towards people of color to bear the burden of change. It is people of color, the working class, politically marginalized communities and places that are expected to test out sustainable, alternative approaches, restricting their “freedoms” at the benefit of the powerful and the comfortable. This is historically an unfair dynamic that perpetuates racism and environmental destabilization through access, if not perceptions of energy, of which electricity is only the most recent manifestation.

32 I have for much of my life worked in an approach that I might simply describe as poor theater (Grotowski 1968), not necessarily out of choice but from circumstance. A friend of mine jokes that when I turned up to a hip underground performance space in London with a bunch of old sheets sewn together to use as a projection screen, he thought I was either a little crazy or a little clever but poor. Because of course to make beautiful things out of not valuable things is quite wonderful. At the same time, such an approach seems to dictate a kind of aesthetic. This past summer, while I was at a Prague Quadrennial presentation on ecoscenography an audience member insightfully raised the question, how do you avoid the aesthetic of ecological? The scavenger, flimsy, thrift store approach cannot be the only way? And it is not; this is the challenge we take on as an erotic endeavor, bound into the creative and social desires. A problematic not just of creative projects but of living in a time where having it all seems more affordable than keeping one thing forever. Aesthetically this is a fine line on which to balance, raising the question of social performance, of desired aesthetics, livelihood, and success in the world around us, as makers, employees, and in general. I want to up the stakes to these questions of ecoscenography to propose that these same questions manifest as power geometry in other scales, through other histories. These sites are why we should care about the relationship between the world we make around ourselves in our homes, neighborhoods, workplaces because they connect to other places and through time in ways we might not be inclined to sense. Ecoscenography in an expanded field, is perhaps simply ethical consumption, attending to energy-rich materials and waste as though they have consequence, which they do, on the health of the Earth and one another — attending to the props we use in both creative practices and daily life.

33 I understand scenographies of power as spatial events that take on two forms. They are sometimes nodal points of globalized power geometries, sites such as border walls, industrial factories, military sites, oil fields, national grids, or politicized architectures (Hannah 2015). But scenographies of power also manifest as tactical interventions. In these cases, their power comes from movement and transformation of people, places, and spaces, often at, or in conversation with, power geometry sites. Nick Kay, an art historian who focuses on site-specific practices, argues that site-specificity can be understood in terms of process. It is the process of relating location “with object, image or event, its positioning in relation to political, aesthetic, geographical, institutional or other discourses, all inform what ‘it’ can be said to be” (2000, 1).

34 Pursuing energy through aggressive land-based procedures have historically and disproportionately affected indigenous peoples and communities of color. Nuclear power plants produce toxic waste that must be stored and managed with degrees of success. Abandoned mining sites of coal and conductive metals for electronics leads to water contamination. Water plays a critical role in all of this, both its use as a cooling device for nuclear power plants and the large quantities that are required and affected by industrial sectors, which are the nexus of electricity and water consumption (Medina 2007, 87). For these reasons, I consider rethinking our use of electricity as a sister movement, if you will, to the Water is Life, water protectors, and Standing Rock Movements. There is no form of electrical generation that does not require water at some stage of its production, whether as a coolant for nuclear power plants or in the making of solar panels. But how it is used, both quantitatively and qualitatively, can most definitely be reduced by sustainable practice. Water is not just bound into contemporary forms of electricity generation; it is cosmologically and energetically bound to electricity, from lighting and monsoons to the manifestation or weather patterns like rain, rivers, and oceans. Water is a conductive material needed for all life.

Fig. 38. Video stills from a Mesmeric Ritual at a Power plant. These images are an attempt to frame the human figure as an expression of energy, temporality, and information. In movement, the figure is not quite there, recorded differently than the fully formed and singular human body that is so easily perceived as such, in error. Images of my body in movement, thematic throughout this work, are in conversation with media materialism, which attends to the ways in which technologies make visible and sensible the unseen world. I use the concept to explore the ephemerality of the body but also how it might function like media in time and space. There is nothing else to say, just the feeling of disappearing, of losing form, of being not singular but of energy, heat and decomposition. Video Link: http://www.genevafostergluck.com/work#/magnetic-chamber/.

Photo credit, Cáit NiSiomon,
Fig. 39. MC6 was a 30 min. mesmeric ritual-performance powered by handmade and rechargeable batteries. In *Performing the Electrical*, mesmeric rituals are designed as site interventions as well as durational events that can be presented in a theatre or gallery venue. Each ritual functions as an evocative and knowledge sharing encounter. Presented at Tool Shed Artist studios and the CYCLIC afterparty, an event co-hosted by BIOSPHERE 2 and the Tucson Museum of Contemporary Art (organized by the artist Cassils with performances by Ron Athey and Fanaa), Tucson, AZ.

Photo credit, Cáit NiSiomon.
Figs. 40 – 46. Scenes from MC6 clockwise from top. Friction dance; light from a hand crank; young people in land/scraper sound costumes; a lime battery made with the audience; handmade plant battery; prop-object; handmade voltaic pile battery that powers sound effects. Photo credit, Cáit NiSiomon.
In 1779, Franz Anton Mesmer proposed that harnessing the invisible streams of magnetic fluid was the basis of a revolutionary new medicine he called Mesmerism. Dressed in a lilac suit and playing the armonica (a friction instrument, in which wet fingers vibrated on ancient minerals), Mesmer conducted healing rituals through the electrified ether. With hands outstretched, he unblocked and realigned energetic relations between bodies as electromagnetic healing.

As a form of health care, mesmerism has been disregarded, termed a pseudoscience and esoteric spiritualism, but ... What if we reframe mesmeric healing as an environmental intervention, a performative intentionality to heal the Earth through energetic relations? What if the production and consumption of energy-as-electricity is understood as acts of caring (or not caring) for one another and the Earth? Past mesmeric rituals often included the sensing of ghosts, the afterlife of past energetic relationships. In a new performative framing of mesmerism, we summon ghosts that haunt us as warming gasses, toxins, and waste, and we make visible the energetic lines that tether these ghosts into our everyday lives. The specters of colonial electrics haunt us through wall sockets and digital data, electromagnetic black mirrors, and perpetual updates.

This is a mesmeric ritual, to read the Earth heart, to wake from a mass hypnosis, to ask who or what controls our minds? To rupture the practice of electricity as utility, industry, and easily consumed process, to perceive the afterlife of energy-materials as the poltergeists that move us closer to extinction, and to close the entrance of their hauntings, to make energy-as-electricity sacred again.

I believe in lightning bugs, phosphorescent, electric eels, ultraviolet scorpions, electromagnetic plant communication, below the dirt pink spore communication; my love for you makes my electromagnetic chamber ache. This is a mesmeric ritual to read the Earth mind and her electromagnetic principles. To bind electricity back to nature and harness the invisible streams of magnetic fluids passing between human and more-than-human bodies—Mother Magnet Earth, Sun charger, Moon insulator. Electricity is a language between us. It is a labor of our love.

We will now wake from a trance.

- Working text from Magnetic Chamber series.
IMAGINATION AND SPECULATIVE SPACE-MAKING: MESMERIC ACTS TO RE-ENCHANT ELECTRICITY

In 2009 the scientific journal *Elements* dedicated an issue to the topic of “Magnetics and Mesmerism.” In the introduction David Vaughan, a professor in Theoretical Geography from Manchester University, is careful to establish the links between magnetism and mesmerism presented within the accredited journal. Vaughan notes that the study of magnetics, observable as gravity, celestial rotation, and the attraction between materials was most likely the first “invisible” force to be investigated by humans. Vaughan credits the 18th-century physician Anton Mesmer with being one of the first Europeans to link magnetism and human health. Although Vaughan is quick to note that Mesmer’s understanding of “animal magnetism” and his approach to “harnessing invisible streams of magnetic fluid,” by which Mesmer employed his new theory of magnetic healing, is deeply flawed (2009, 1), Mesmer predicted the role of magnetism in advanced healthcare. For example, Vaughan cites the development of nuclear magnetic resonance spectroscopy (MRI scans) which enable imaging of both internal human organs as well as hidden geological phenomena, as technologies which would have been perceived by Mesmer’s patients as “miraculous magnetism” (1). Vaughan’s hesitation to link Mesmer to the hard science of medicine and geology, indicates the slippery slope that electromagnetics occupies in our imaginations and the spaces between rational science and metaphysics.

Perceptions of electromagnetic sensing occupy multiple cultural spaces: the culture of science as fact vs. fiction, the spiritual dimension of magic and the occult, the invisible forces of entertainment and illusion, and the metaphysics of polarities—
attraction and repulsion. Electromagnetics also reveal the hard to grasp scales of time, such as the creation of the universe, prehistoric phenomena, human and more-than-human stories recorded in radiation and other lingering energies that are made readable by technologies. Such electromagnetic “evidence” confirms and challenges cultural beliefs. As Vaughan indicates, sometimes discredited cultural perspectives come to be foundational to new knowledge and to knowing the world more intimately. In these moments, the fictional, irrational, and discredited come to find truth in their reframing, often affirmed through the revealing qualities of technologies. As Vaughan writes,

The role played by magnetism in many branches of science—not least in the geosciences—has been extraordinarily important. It was the magnetic record held in the rocks of the ocean floor that provided the key evidence for seafloor spreading and continental drift, and it was the subsequent use of paleomagnetic data to reconstruct the movement of the rocks of the Earth’s crust that led to the development of plate tectonics… the magnetism of minerals, rocks and biomineral materials continues to produce surprises that challenge existing theories. (2009, 1)

Agreeing with Vaughan, electromagnetics allows us to know the Earth, human, and more-than-human bodies more intimately. We also use magnetic frequencies to know each other more intimately globally, through the electromagnetic spectrum of mass communication, digital information, and social media. The electromagnetic field, frequencies, and spectrum, once understood as ether, continue to connect the living and nonliving world, not as magic or superstition but as frequencies of digital interconnection with ever-increasing energetic demands. These demands manifest as vast warehouses
filled with heat-generating and electric consuming data servers. The electromagnetic “ether” is a tool for intimate global connection, yet in terms of health such connections, the process in which they occur and the ways in which they are performed as social practices and rituals, are not in themselves healthy. In fact, globalized information and digital, electronic connectivity are unEarthing us and many other species by and through the energy-rich relationships on which such processes depend and then bolster. As we continue to expand our electrical needs through our increased use of digital storage, faster processing, and data speed, we increase the need for energy in the form of electricity. As long as the electricity which provides 24-hour data streaming is run from non-renewable energy sources and consumed with unthought implications (perpetuating the illusion that data is a non-material process, as in clouds of data), the less sustainable human and digital futures become. The Earth simply cannot meet these demands if we continue to produce, consume, and dispose of electronics as we have been doing. This is the coloniality of technology which lacks cyclical awareness and value-ing. At the same time the cultural performatives of energy consumption that are perpetuated by a new tech-consumerism of social media often have negative impacts on how we feel about ourselves and our place in the world. In mesmeric terms, we have created blockages in our electromagnetic relationships that are unhealthy, and this in turn contributes both to an illness of Earth and her occupants.\(^{36}\)

As a way of thinking about energy-as-electricity I want to draw connections between health and electromagnetics, not metaphysically but socially, as the ways in which we communicate and know one another and the Earth more intimately. Electromagnetic frequencies and atmospheres also provide socially and ecologically
sensorial ways of perceiving process and phenomena with healing potential. As Graeme Gooday argues in *Domesticating Electricity*, health and electricity have a long and complicated relationship. Gooday notes that as efforts were being made in the late 1800s to bring electrical utilities into homes, “the ‘healthful’ reputation of the electric light was not a natural, self-evident fact, but a partisan claim that had to be fought for vigorously—indeed ‘constructed’—by its proponents” (2008, 92). With historiographic and thought experiment liberties, I want to reframe historic concerns about the healthiness of electricity, not as the public’s ill-informed and superstitious misgivings, but as intuitive sensing of the ways in which the utilitarianism of electricity, founded on fossil fuels and disposability, would affect the health of the Earth and the quality of healthy ecologies between peoples and nature. The fear and mistrust of electricity in the 1800s were, in fact, not wrong; considering that electrical energy, amplified processes of engagement facilitating mass production, mass industrialization, refrigeration, electronics (which require mass energy, mass mining and results in mass waste), as well as wireless communication which plays a critical role in globalization and global health, or the lack of it, I argue that there are good reasons for suspicion. Let me be clear it is not electricity itself—it is the relationship of its production and use that is the issue; it is the curious choices we continue to support as passive consumers. Such understandings, perceptions, and consciousness are part of what is communicated through digital media, globalized electronic networks, and surveillance tools of militarization. How and what we perform through invisible frequencies, Hertzian spaces, and electromagnetic technologies matters (materially and socially).
Ritualized interactions and performativities shape energy consumption. As Leo Coleman states, “technological objects are taken up, and their political meaning and social implications transformed in the course of social rituals or collective performances;” energy-as-electricity in states of becoming are crafted by “moral orders in and through technological politics” (2017,13). Drawing such a connection asks the driving question of the project: how can electric, electronic, and electromagnetic phenomena and assemblages be transformed and re-performed to form more desirable futures? Throughout this dissertation I have argued for interactive and tacit encounter, for decolonizing and re-feminizing perceptions of energy. Here I want to explore the ways that ritual, reenactment, and enchantment, framed as mesmeric interventions, provide another valance to transforming energy practices. How energy is perceived and performed through technologies of communication, data and tech-consumerism are, in fact, social rituals. As energy scholar Stephanie Rupp points out, people consider energy to be many things, and it is all of these things at once. Yet, energy-as-electricity often evades pluralistic complexities and is easily thought of merely as a utility. As Rupp states,

Energy is an intangible force that comes in so many forms. A power source, an aura, a physical drive. Energy can power our homes, cars, and possessions, as well as our physical and spiritual bodies. Energy is motivation, it’s strength, and courage. It can be drawn from our world, like solar and wind, or from an object like a battery or talisman. (Rupp 2013, 87-88)

By perceiving energy-as-electricity more pluralistically we might find ways into reframing our social performances with technologies. While electromagnetic forces
between celestial bodies, which once arranged moons, planets, and stars and set the stage for the theatrum mundi of Earth in deep time, continue to exert their cosmic push and pull on Earth, electromagnetic functions influence and arrange the relationships between peoples, cultures, and nations. They are similar space-making forces and processes but at different scales and effects. Through our globalized world of digital interconnection, like mesmeric communication, we influence one another through frequencies and invisible colors. Such communication through the electromagnetic ether might function as a kind of mind control or hypnosis symptomatic of disembodied and disenchanted perceptions of invisible electrical energies. At the same time new and other social rituals might provide performative ways to wake from our ecologically destructive trance.

In this chapter, I extend the discussion of my studio practice, in which I came to think of Magnetic Chambers (my PaR working process) as mesmeric rituals. Here I use written research to flesh out the ways these events function as ritual and the discursive qualities of ritual, magic, and occult within mainstream knowledge. I consider how electrical production can become ritual again, as a way to see and know the energetic world of ghosts and spirits including that which haunts as greenhouse gasses, toxins and colonial inequality. At the same time, I propose how new performatives of energy might create more kind and healthful hauntings for the future through the lines of connection we draw in the material and atmospheric world. I begin by exploring the features of mesmeric performance from historical practices, populist perceptions, and contemporary incarnations. I then relate this history to our contemporary use of electromagnetics through the world’s Information-Communications-Technologies and the ways this relationship contributes to the unseen specters of global warming and climate crisis. I
then return to the performative site of mesmeric ritual and healing techniques to consider the features of speculative mesmeric performance as a way to know how the Earth feels and the ways that such rituals work ecologically and socially through intersectional desires. I draw on kinesthetic imagination, aesthetics of desire, and speculative design in order to propose new mesmeric rituals to wake from the trance of digital hypnosis, and algorithms that don’t feel.

Speculative mesmerism is not only a way to see or sense invisible energies, but to interrogate the ways that mind control functions within the electromagnetic spectrum and to consider how we might send new, other messages and desires within ontologically pluralistic frequencies. To Perform the Electrical is to conjure forth the material and electromagnetic partnerships of living and nonliving matters, to read the Earth mind and wake us from the old, outdated states of colonial and technological mind control.

**Reframing Mesmerism as Poetic / Aesthetic / Kinesthetic Activism**

Mesmerism was first practiced in the early 1770s by the Austrian physician Dr. Franz Anton Mesmer. By the 1800s, mesmerism had become a popular concept that traveled from Europe to the Americas and would come to be considered the precursor for modern-day psychology (Nadis 2005, 87). During this time, the term blanketed a number of different interactions between the patient, practitioner, and the energetic world of invisible magnetic currents. In 1779 Mesmer published *The Discovery of Animal Magnetism*, a treatise in which Mesmer laid out his theory that magnetic energy was a kind of electrified and invisible fluid that permeated between bodies. Controlling the flow of magnetic energy through hypnosis and degrees of mind control allowed for trans-
corporeal communications and affectations with health benefits, healing both the physical and mental bodies. Mesmer believed that if the flow between the energetic world and an individual’s body become blocked, that “illness would result” (Simon 2004,16). During his early years of practice in Vienna, many of Mesmer’s patients sought treatment for both emotional and physical ailments. These early treatments included placing magnets on the patient’s body as well as group treatments in which a sizeable magnetic object, known as a “baquet,” was placed in the center of a room, and patients would make contact with the object by way of conductive materials while Mesmer used his own energy to charge and distribute the magnetic “fluid” which was generated during the sessions.

By the time Mesmer arrived in Paris in the late 1770s, it was to treat a large following of wealthy and elite patients. No longer dependent on magnetic objects to direct his healing energies, Mesmer practiced this theory of animal magnetic healing as a highly crafted aesthetic experience. His healing sessions took place in elegant parlors, with carefully selected lighting and incense to enhance the atmosphere. Mesmer himself took on a more dramatic performative approach; he dressed in an elaborate lilac suit and used his bare hands to extend his magnetic energy to the far corners of the room (as though his hands were radiating electrical energy, reminiscent of the iconic image of the magician-healer with lightning bolts emanating from his hands, and of Gray’s Flying Boy experiment mentioned in Chapter 2). Eventually, Mesmer’s treatment moved from group sessions back to private therapies, where he could focus his attention on wealthy and, most often, female clients. Behind closed doors, Mesmer’s treatments are recorded as notably sexual. He would place his patients’ knees and feet between his own and, facing
one another in close proximity, Mesmer would run his hands along the patient’s body, attending to the areas which needed healing. The intensity of these treatments often resulted in a “Magnetic Sleep,” a kind of fainting or giving over to the healing energies, unhampered by the conscious mind. His patients would wake with a mixture of feelings that were also notably sensual. Mesmer’s techniques capitalized on and were later scrutinized under the popular perception that electrical energies and sexuality were deeply connected (Simon 2004,18).

While Mesmer’s practice was viewed by the established scientific and medical institutions with a mix of skepticism and often outright condemnation, his following remained strong until 1784 when King Louis XVI ordered an evaluation of his treatment methods. At the time, the king’s wife, Marie Antoinette, was a patient of Mesmer, a relationship that both raised Mesmer’s popularity and the king’s concerns. The commission, led by Benjamin Franklin, who had been asked to oversee the process, found that there was no evidence for Mesmer’s treatment and that it was “destitute of foundation” (Fernandez 2019). Yet the commission did also concede that there was, on some level, an effective element to Mesmer’s treatments. Whether based on what we would call a placebo effect or what the observers at the time referred to as “a sense of uplifting enchantment” the commission agreed that elements of the treatment’s intensity, experience, and performance were transformative for Mesmer’s patients. The commission acknowledged the power of the experience which Mesmer crafted, the components being his performative qualities, the atmosphere he cultivated, and the unstated but palpable sensuality of his treatments, whether intended or not, that resulted in the sense of relief, revitalization, renewed energy, and generally better health. The
treatments functioned as an effective experience. The tacit and haptic encounters and the focused perceptions of interconnection resulted in effective benefits to an individual’s health and wellbeing.

In reviewing the history of Mesmerism, Fred Kaplan articulates that the central premises of Mesmer’s philosophy were an essential interconnectedness between all things. He referred to a “mutual influence between the Heavenly bodies, the Earth, and Animate Bodies which exists [as] universally distributed and continuous fluid . . . of an incomparably rarefied nature” (Kaplan via Parssinen 1977, 88). In mesmeric methodology, all things are connected through this energetic fluid and “the properties of matter and the organic body depend upon this operation” of interdependence. According to Mesmer, the ability to work with, manipulate and control this phenomenon ensures that “the art of healing will thus reach its final stage of perfection” (ibid). In Kaplan’s summary of Mesmeric principles, I locate an ontological premise that is not dissimilar to contemporary notions of interdependence. While mesmerism uses magnetics as a metaphorical system of relations, the idea that all things influence one another is central to many systems of knowledge as well as a cornerstone to a contemporary understanding of ecologies. Mesmerism can be viewed as a spatial imagining and performative modality that functions in or like a higher alternate dimension, in which all things are connected.

While Mesmer did not articulate or put into practice scientifically sound propositions, his conceptualization of magnetics as a healing potential worked as a speculative proposal for a way of sensing, relating and communicating between bodies, living and nonliving.37 I propose that mesmerism is a speculative and conceptual performative framing that not only reveals things about the human and more-than-human
bodies but the interconnected health of Earth and all beings through invisible electromagnetic frequencies. This is not necessarily a metaphysical proposition; I am not speaking about putting magnets to bodies or the influence of technologies and their radioactivity. What I want to do is explore the connections that occur in how we perceive and perform electromagnetic technologies and how these performances affect the Earth and each of us. Through the dual processes of magnetics and electricity mesmerism pertains both to energy and health.

Mesmeric performance occurred both as populist forms of entertainment and as collaborations with new technologies. From the late 1800s well into the 1900s mesmerism bled into the practices of hypnosis, channeling ghosts and entertainment. It was made visual through stage illusion and other pseudoscientific exhibitions by way of new electromagnetic technologies, sleight of hand, or theatrical misdirection. Similar energetic principles entered into schools of spiritual thought, which centered on the shared properties of an animating force as life’s electrical energy, a view most likely influenced by Volta’s works with “animal electrics” so that science and metaphysics formed the cornerstones of religious schools known as Spiritualism and Vitalism. In Dark Light (2004), Linda Simon identifies the ways in which new electromagnetic energies, spiritualism, and vitalism provided a platform to think about the power of energetic animation and its implications. She traces the variety of populist cultural responses. She identifies the literary responses noting Poe’s extensive writing on electrical ether and “Mesmeric Revelation” (1884-5) and Walt Whitman’s shared interest in the movement, expressed in his I Sing the Body Electric (1885) poem. For these artists and the public who responded to their work, mesmerism and hypnosis did not just provide a connection
to the realm of the supernatural, but also was a path to “self-knowledge” and “medical therapy.” As Ralph Waldo Emerson suggested, the value of such inquiry was “not as science, but as criticism of the Church & Schools of the day; for they show what men want in religion & philosophy which has not been hitherto furnished” (Emerson via Simon 2004, 174). Populist dramas and plays also addressed electromagnetic properties, including Elizabeth Ichabod’s *Animal Magnetics* that first premiered at Covent Garden in April 1788, and Mary Shelley’s *Frankenstein* (1818) which was inspired by the work of Galvani’s electrical reanimation experiments. By the 1930s metaphysical properties of electrified energy were subsumed by electrified industrialization, including Eugene O’Neill’s *The Dynamo* and Elmer Rice’s *The Adding Machine*, both written in the 1920s and depicting the combined terror and awe of electrified machines. These themes were still relevant well into the 1930s, as we saw with Gertrude Stein’s experimental work *Doctor Faustus Lights the Lights* (1938) in which the insatiable intellect Dr. Faust sells his soul to the devil in exchange for electric “illumination.” The majority of these works use a kind of speculative narration to explore and emotionally sense possibilities and outcomes of this new electrical technology. As Fred Nadis articulates in *Wonder Shows* (2005), concepts of electrical energy shared between science, magic, and religion remained a subtle undertone in evangelist healing and metaphysical aesthetics well into the twentieth century. Electrical processes and spiritual healing as performative expressions evolved alongside electronic technologies and innovations.

Manipulating animal magnetics was first a practice of imagination, which became a shared experience that in turn, acted as speculative performance for yet-to-exist technologies of healthcare. The use of electronics as vehicles to sense the unseen world
functioned historically as both portals to imagine other energetic relations and as speculative tools for communicating with other dimensions. From spiritualist healers using radio and television to extend their healing powers to techniques of “scrying” through electromagnetic interference to communicate with ghosts, electronic technologies have a long history of working to access unseen worlds (Nadis 2005; White 2018; Dunne and Raby 2005). For example, electrical healing via the talents of “sensitives” were a thriving performative endeavor filling not just the lecture halls and pseudoscientific journals but also séance rooms, parlor gatherings, traveling shows, theatres, and eventually occupying the screens and airwaves of electronic devices. As mesmeric performatives fuse with new technologies, we witness a subtle transformation, a reversal of sorts in which the public becomes hypnotized by technologies rather than perceiving them as hypnotizing tools. As the practice of mesmerism (perceiving the unseen connections between health and electromagnetic energy) slowly faded out of cultural popularity, utilitarian interactions with electrical energy became more dominant. At the same time, unthought, invisible, and environmentally destructive relationships between digital communication, energy, and waste grew exponentially through cultural performances and practices. How might we rethink the disenchantment of electricity and the unbridled expansion of electronic media, as somehow related to the ecological precarity which forms around energy consumption and electromagnetic? How might we transform outdated mesmeric rituals into contemporary practices of socio-political-ecological interventions? I suggest that in this critical time of climate crisis mesmeric rituals are a way to ground ourselves. Perhaps we may sense more clearly the many ways that mind control occurs in the form of digital platforms, social networks, hacked data,
foreign-influenced algorithms, the very material “clouds” of data, and toxic electronic
decomposition; all of which are symptomatic of disembodied and disenchanted
perceptions of invisible electrical energies that capitalizes on cheap, easy flowing
electrical energy in order to control, direct and shape the thoughts, feelings, and
behaviors of those who engage with them.

Performing the Electrical works historiographically to re-frame mesmerism as the
connections formed through energy relations as acts of healing. Mesmeric sensing is a
way to understand energy relations and thus becomes a performative intervention to
counter the mind control (perception) of easy flowing and abundant electrical energy.
Working aesthetically and evocatively through anachronistic technologies of batteries
and material relationships, mesmeric rituals are a way to communicate kinesthetically our
connections though unseen energyscapes. As speculative interventions, mesmeric rituals
not only aid in thinking more pluralistically about energy but are ways of engaging in
relationships with the unseen and the power of action in cultural spaces.

Occult Imagination and Electromagnetic Healing

The “domestication of electricity,” as Graeme Gooday refers to it, did not happen
easily or as an inevitable process of modernity. Instead, bringing electricity into the home
and thus creating a market for home appliances and electronics was a highly cultivated
effort on behalf of both technocratic management and entrepreneurial investors. As
Gooday explains, the uncertainty of the “nature of electricity” led authorities and experts
to adopt “strategies” of alternative narratives so that the public’s focus was shifted away
from what electricity is, toward what it could do in the future. These narratives often
focused on “futurism and luxury as substitutes or diversions from their problematic absence of certain knowledge” (Gooday 2008, 3). At the same time, the marketing efforts of wealthy businessmen such as Thomas Edison worked hard to persuade the public to adopt the new technology. Years Later, Edison’s own secretary referred to the team’s marketing campaign as “propaganda” promoting the benefits of electricity over gas (Gooday 2008, 163). Gooday argues that the hard-won success of electrical infrastructure should be interrogated in order to distance electricity from a narrative of inevitability. This point is incredibly relevant: that the developments of a progressive modernity are not inscribed in an inevitable future. Instead, they are shaped, cultivated, molded, and distorted by and through their performance in social discourse, whether for political or market aims. People engage, practice, and perform modernity (or technology, wealth, spirituality, etc.) as social rituals and according to culturally accepted norms. The domestication of electricity inserted electrical infrastructure into the home and the domain of female homemakers. As mesmerism faded from the popular cultural landscape, it was replaced by domestic, utilitarian, and modern rituals. This occurred as a transformation of physical, tacit and embodied knowledge, an ontological shift which depended on the loss of electricity’s magical aura in order for it to become a commercialized and utilitarian product. What accompanied the loss of a spiritual relationship with energy was a radical increase in our consumption and dependence on it as a utility. Electricity would now only, rationally, be accessed through technologies.

*Performing the Electrical* re-imagines mesmerism as an occult practice and as a political, social, and ecological desiring to know energy-as-electricity differently. Emerging from creative and embodied practice, such rituals bypass rational logic and
economic incentives to feel and sense the vibrant materials and more-than-human agents of electrical phenomena while presencing these events beyond the utilitarian. As a way to embrace the enchanting process that produces electrical phenomena, these rituals express gratitude, reciprocity, ethical, and spiritual values. Adrian J. Ivakhiv, a scholar in environmental studies, argues that para-scientific perspectives provide multiple lenses for viewing the relationships, perceptions, and practices which flow between categorical sites of knowledge and the “social imaginary:”

Epistemologically, they tell us about the nature of knowledge and about the changing boundaries between different kinds of knowledge practices. Politically, their study can tell us about changing configurations of trust and suspicion, transparency and paranoia, within a reconfiguring global ecumene. Finally, their study can inform us about changing notions of the sacred and the secular, about the globalization of religion, and, in the case of Earth energies, about the role of Earth, nature, power and energy as tropes within changing religious, national, and global imaginaries (Ivakhiv 2018, 136).

Mesmerism is a unique site within energy studies because it records a performative space where people, including those who have historically been restricted from participating in technological development, such as women and people of color, have agency and authorship to imagine relationships with electricity outside of a capitalist and utilitarian realm. This is a subject positionality that now makes women and people of color key players in transforming the energy sector via both grassroots initiatives and reframed techno-capital priorities (Annecke 2002; Medina 2007, 2014, Lennon 2017). While mesmerism of the past did not distinguish between the magnetics of objects and bodies, it
affirmed the presence of electromagnetics in all things and as an aspect of Earthly health. Again, as Ivakhiv states, occult practices that perceive connections with the energetic world might function through a kind of imagination but that, “Imagination, then is productive, motivating, and formative (that is, form-generating); it is not the opposite of objectivity, truth, and reality, but is constituent in the production of these categories and their opposites” (2018, 137). Ritual has always been a form of object-oriented ontology: materials are not merely representational or symbolic, but they are imbued with agency. Similarly, creative practices make spatial, material, and embodied manifestations that reside outside of capitalist logic and values.

How electricity has been and continues to be performed in our imaginations and in our deeper, spiritual, and metaphysical perceptions is a way of reading our human relations to matter and energy, time and process. Additionally, it reveals the desires left unfulfilled by normalized economically driven events. Occult conceptualization of electrical energies, ethers, and atmospheres is a practice, one which allows us to feel matters differently. Tuning into notions of healing, I use mesmerism as a practice and social performance to work towards an “ethics of mattering” as Karen Barad terms it (2007, 391). To sense our interdependency on electrical energy, as a matter of health, is to communicate with Earth and one another differently; as we tap into, cable, coat, and network her electromagnetic skins and mimic her biological electromagnetic processes.

Mesmerism in the 1800s was a populist system of knowledge formed distinctly through its performative iterations around themes of hypnosis, mind-reading, sensing ghosts, and embodied energies. Its popular success was not only diffused by printed works of literature but through the repertoires of mesmeric practitioners who cultivated
tacit and evocative encounters. Such events capitalized on maintaining a counter-spatial phenomenon, the other side of rational science and utilitarian technologies. It is important to note that the populist performance of mesmerism occurred at the same time as the introduction of electricity as a home utility. Such occult practices maintained a space for an emotional connection to electric energy. They allowed spaces for sensing and expressing the enchanting energetic connections of the unseen world, which was rapidly disappearing with modernization (Parssinen 1977, 88). Immersion within experience is the embodied presence and the immediacy of live encounters together. It is where improvisational and chance encounters manifest. Such events add critical information to what is rational, reasonable, and explainable, as part of the lived experience that science cannot touch. The *experiencing* of possibility, the ways in which tacit and haptic engagements transform how we see the world is critical to rethinking energy dependency. Sensing atmospheres and aesthetics with our bodies penetrates the “blind spot” of science, the aspect of knowledge which forms through and is the *experience* (Frank, Gleiser, Thompson 2019). We might locate the ways in which energies, ghosts, and invisible spaces (as higher dimensions and powers) participate in forming aesthetic atmospheres that are experienced by the body via perceptive kinesthetic and poetic imaginations. As Isabelle Stengers states in *An Ecology of Practices*, the social imagination and speculative thinking are “tools” for transformation, that occur not just in recognition of situations but in thinking through them experientially, in order to change them. Stengers writes,

> What is at stake here is ‘giving to the situation the power to make us think’, knowing that this power is always a virtual one, that it has to be actualised. The
relevant tools, tools for thinking, are then the ones that address and actualise this power of the situation, that make it a matter of particular concern, in other words, make us think and not recognise. (2005,185)

Stenger’s affirmation is that experience is a form of “testing” both what “is” and what can be. As such, experience hinges on the active participation of thinking. But actualizing events in creative and ritualistic aesthetics and poetics provides the opportunity not simply to say things but feel and communicate desire. Ritual and creative practices make spatial and material statements that provide examples, instructions, and inspiration to think more deeply about how, as Barad articulates, “All bodies, including but not limited to human bodies, come to matter through the world’s interactive interactivity—its performativity” (392). Mesmeric rituals trace these energetic relationships, which begin and end with each of us—how we individually, collectively and ideologically contribute and how we rupture our participation energetically. Such ritual cannot be performed without interrogating neoliberal statements of caring for others, which forces us to instigate our own social participation into lines of domination formed by and through energy relations. When Matthew Goulish from Goat Island states, “a tear is an intellectual event” (2007), he is both quoting William Blake and articulating that the body is a sensing device that communicates knowledge in acts that are beyond language. Speculative performances of energy that form aesthetic, poetic, metaphorical, and sensory experiences between bodies (all Earthly bodies) function as communicative channels. Occult practices, like creative-artistic ones, bypass the rationale of capitalist-modernity that marks notions of reality, those many of us have accepted as features of
everyday life, to expose other more sensual realities and relationships. These are the sensing tools to enact radical transformation.

**Toxic Hauntology: Inverting Who and How to See Ghosts**

Derrida’s proposition for the term “hauntology” (*Spectres de Marx*, 1993) encourages us to think, speak and listen to the specters of past events as they affect current events. Such a proposition also identifies that which is unseen, but sensible, not fully formed as rational or within linguistic articulation, but an agent, nonetheless. Attending to hauntings within a larger notion of cyclical time-scapes as worldmaking events reveals the “secrets” of the phenomenological world (which political and social relations are a part of) and draws into question the effectiveness of binary notions of presence and absence, real and the imagined (Ivakhiv 2018, 130). Hauntology can be a critical tool for assessing the contradictions hidden within notions of modernity and progress, those driving forces of efficiency, productivity, and surplus which have come back to haunt us as the afterlife of energetic materials and climate crises (Tsing 2017). The ghosts of energy are the specters of fossilized minerals that now haunt us as warming gasses, toxic atmospheres, and ecological devastation. We are also haunted by the supremacist partnerships that seek cheap labor of human bodies and Earth materials. Attending to these ghosts and ghosting effects is part of a critical response to climate crises as well as to the social rituals which co-construct policy, technology, performatives, and ideological orientations. Performing new mesmeric rituals is a space making proposition for more diverse futures, a kind of anti-trance for unthought energy consumption, and a transformative provocation.38
I return now to the ways in which race, sex and class have differing material values in social performances. The success of spiritualism and mesmerist performances at the turn of the century has been attributed to the ways in which it appealed to a popular discourse of new scientific theory (Lehman 2009; Parssinen 1977). Yet, these performances also form a counternarrative to the white and patriarchal power structures which separated scientific, technological, and institutional processes and accessibility along the lines of identity. In *Victorian Women and the Theatre of Trance* (2009), Amy Lehman writes about the role female performers and practitioners played in the populist performances, séances, and the intrigue of mesmeric rituals. While not as historically known as their male counterparts, female mediums, spiritualists and mesmerists, who were viewed as the more sensitive of the two sexes, were able to both make a living and maintain a space where the unseen forces had a place in the quickly modernizing world. In these scenarios, the information gleaned by communicating with ghosts, through electromagnetic frequencies and human magnetics, conveyed a desire of both performer and audience/patient to perceive the world through different currencies. For example, Lehman writes that the “emotional truth of the experience was more important than its credibility” (2009, 168). Women mediums also accessed their conductive powers for otherworldly communication through their sexuality, both as a form of misdirection and as an atavistic source of electromagnetic energy. Lehman argues that the social and emotional isolation that women experienced during the 1800s had been translated into imagination. Yet Lehman also notes that mesmeric rituals were more than a coping mechanism for social isolation, they were a long term “source of solace” for individuals and for a collective consciousness denied agency in creating the world they lived in.
(2009,177). For some of the same reasons that women were so successful as spiritual mediums, people of color also found leverage in social, cultural, and racist perceptions of the time. By performing their perceived “vulnerability” to the electromagnetic forces, people of color put stereotypes labeling them as exotic, closer to nature and in possession of pre-modern superstitions to work in their favor (in terms of sustainable livelihoods) by becoming conduits for supernatural and mesmeric phenomena. The same features which prohibited women and people of color from fully engaging in political and technological development, gave them perceived access to the unseen but sensed energetic world.39

I want to linger here for a moment to consider the ways that sexual and racial identities, used by dominant institutions and normative cultural spaces to discriminate, was, in turn, an aspect to, or an inversion of power, that allowed for seeing into other dimensions and reading the energetic world. From the perspective of white European culture, people of color, women, and trans bodies were viewed as more susceptible to the influences of the unseen world because they were closer to nature, more sexual, and less rational (Nadis, 2005, Lehman 2009).

In the paper “On the Haunting of Performance Studies,” Benjamin D. Powell and Tracy Stephenson Shaffer use hauntology as a way to better understand performative acts within epistemological framings. They argue that Derrida’s notion of différance and his proposition of hauntology work synchronistically to reframe notions of “value,” content, form, knowledge, and truth.” They state that

if one adopts haunting one will be forced into a radical rethinking of how scholars and performers articulate experience(s). Haunting requires that concepts such as presence, ontology, performativity and identity be rethought in a way that allows
for difference to emerge…Haunting is an epistemological concerned with the treatment of the other as an ethics of difference. (2009, 10)

I want to propose that contemporary social rituals that are intentionally oriented as activism and radical interventions prioritize the perspective of people who have been historically denied a place at the table in crafting technology, policy, and economic processes. Such positions destabilize energy relations and institutions of inequality. *Performing the Electrical* proposes a framework for inverting the racist history of supremacist energy relations by making visible the ghosts that haunt us through alternative performances and pluralistic-sensual manifolds. As Joseph Roach writes in *Cities of The Dead*, “Genealogies of performance attend not only to ‘the body,’ as Foucault suggests, but also to bodies—to the reciprocal reflection they make on one another’s surfaces as they foreground their capacities for interaction” (1996, 25). While Roach refers to the plurality of bodies to enact cultural memory, the concept of multiple bodies can also be applied to the agencies of materials and more-than-human bodies as they reflect and infuse into one another. We are not individual subjects of perception but accumulations of materials, events, and other living agents. Roach proposes the concept of kinesthetic imagination as a way to understand iterative performances and the systems of knowledge that are hidden within them. I want to propose contemporary reenactments of ecological mesmerism as a performative way of relating to energy dependency. As art theorist Robert Blackson states, “Reenactment is distinctive in that it invites transformation through memory, theory, and history to generate unique and resonating results…once undertaken, it need not follow the path provided by historical evidence” (2007, 29). And as Roach argues, we feel things through remembering and that retracing
material and embodied actions and relations communicate knowledge kinesthetically. As ritualistic acts of healing, mesmerism functions as a performative and cultural imagining to reveal other and different ways to care for one another and the Earth through electrified partialities. It is a way to reframe our perceptions and relations to energy, our dependence on it, and the way past processes haunt and continue to affect us. Because electricity itself does not reveal the effects of how it is made, we need other ways to access, sense, process, relate to, and value the many ways in which energy-as-electricity can form. Our kinesthetic imagination allows us to sense these ghosts and enact our desire to interact with electrical powers by cultivating the evocative and sensuous possibilities of charged atmospheres and aesthetics, of light, color, sound, and movement.

Similarly, the sexuality perceived, inscribed, and cultivated by mesmeric performances reiterates the deep and long-standing association between energy, electricity, and sexuality (Lehman 2009; McConkey & Perry 2002; Parssinen 1977). As a performative archive, I think about the power of reenactments that transform power dynamics. While reenactments are haunted in themselves, they transform past events into future possibilities. Women, people of color, trans bodies, and other physically marginalized people were seen to be sensitive to mesmerism by way of inferiority to the rational and often male logic. Inverting this role leverages sensitivities as generative insight and ways of knowing that hold the values, experiences, and possibilities not afforded in normative culture. Reframing mesmerism as a performative methodology is to think more deeply about energy as ethical encounters with and through energy, electricity, and electronics, such performatives take mesmeric healing to a new register of interconnection. In doing so, such forms of engagement through the electrified ether and
energetic networks also extend the notion of sexuality as an energetic force, an erotic way to relate, perceive, or frame everyday interactions. These performatives highlight the way we feel, the radical aesthetics and poetics of our interactions as we move through a world produced by and through our desires to know and heal the Earth.

Let us return to Audre Lorde’s iconic essay *Uses of the Erotic: The Erotic as Power*, (previously discussed in Chapter 2) and to the quote “the erotic is not a question only of what we do; it is a question of how acutely and fully we can feel in the doing” (1978). By creating an erotic encounter with elemental materials related to electrical production, I am asking how the erotic aesthetic can (re)position electricity as a sacred material and phenomenological event. In doing so, I believe a deeper understanding of energy, electricity, and its erotic aesthetic power might have significant implications for shifting both our daily interaction with energy consumption and reestablishing a value system inspired by the erotic aesthetics of energy production. As Lorde states, the erotic “provides energy for change” (1984, 53) and the change which is needed at this moment is to form connections between energy as a utility and energy as performative states of being in the world. As Lorde writes, “[t]he dichotomy between the spiritual and the political is also false, resulting from an incomplete attention to our erotic knowledge” (56). To desire other ways and to enact them in small intimate gestures and practices is a tactic for bringing the political and the spiritual together. Performing desire as political interventions opens up space, transforms it energetically: much in the way that transformers in utilitarian energy production function, to step up or down amperages, or the power of currents, so too does perceiving and embodying energy relations differently,
not solely as utilitarian processes but as assemblages of systems of knowledge, the energetics of worldmaking.

As a way to reframe relationships with energy consumption, erotic desire is not about volume and efficiency, rather it is the tension and restraint, that creates ways of relating which highlight process, experience, and desire. This is a radical departure from past energetic perceptions that link sexuality and energy. Those resided in a male-centric, simplistic sexual binary and pre-ecological (western) consciousness. While metaphysical thinkers such as Wilhelm Reich used the orgasm as the premise for “orgone” and universal energy, a Lordean erotics re-feminizes, de-colonizes, and makes queer energy relations. It is grounded (as in connected to the Earth) by difference as a relational process. Erotic enchantment of electromagnetic energies might be a practice that combines digital communication and a desire to feel the world differently, to feel together through the electrified ether. Not just a sensing among humans to feel the Earth but how the Earth feels us. In asking how the Earth feels, Dana Luciano notes that a “critical move away from the human demands an anthropocentric rethinking of the sensory, a revision of the divisions among the senses and modern sensory hierarchies” (Luciano in interview with Roudeau 2015, 2).

How the Earth feels all things through the electromagnetic spectrum, is the eventfulness of visible and invisible colors—the multiple frequencies of sound and silent communication, of material matters and physiological mattering, as the reorganization of value systems, aesthetics, and an orientation towards invisible spaces. Seeing, sensing, and communicating with ghosts is a radical act of connectivity, a way to perform with energy as electric in an erotic, intersectional, and pluralistic way. As Roach states, the
kinesthetic imagination “inhabits the realm of the virtual. Its truth is the truth of simulation, of fantasy, or of daydream, but its effect on human actions may have material consequences of the most tangible sort and of the widest scope” (1996, 27). Our kinesthetic imaginations are also what allows us to feel the Earth as energetically linked. To feel, sense, and heal the ways that we produce and consume electro-energies is both a social imaginary response-ability (Haraway 2016). Such an awareness of electromagnetics is both a networking process and relational intervention but also a way to feel the Earth and to sense the ghosts that haunt us globally in this particular moment of the Capitalocene.

36 The Mills report (2013) provides data that helps put this in perspective. As a co-sponsored report by the National Mining Association and the American Coalition for Clean Coal Electricity fund, The information economy is a blue-whale economy with its energy uses mostly out of sight. Based on a mid-range estimate, the world’s Information-Communications-Technologies (ICT) ecosystem uses about 1,500 TWh of electricity annually, equal to all the electric generation of Japan and Germany combined -- as much electricity as was used for global illumination in 1985. The ICT ecosystem now approaches 10% of world electricity generation. Or in other energy terms – the zettabyte era already uses about 50% more energy than global aviation. Reduced to personal terms, although charging up a single tablet or smart phone requires a negligible amount of electricity, using ether to watch an hour of video weekly consumes annually more electricity in the remote networks than two new refrigerators use in a year. And as the world continues to electrify, migrating towards one refrigerator per household, it also evolves towards several smartphones and equivalent per person (Mills 2013, 1).

Along with the Mills Report, more recent predictions, such as those coming from the Shift Project and the United Nations Global Outlook Report affirm that increased growth of an “electricity-centric digital era” means that social practices must change. With coal as the world’s most significant source of electricity, such rapid and uneconomical practices are simply unsustainable if we value staying within the 1.5 degree climate increase set out by the Paris Climate Agreement. Yet, when we think of digital futures there is a sense of inevitability which does not include alterations to how energy is produced, the effects of material extraction, nor the necessity of limiting how much energy is used if we are all to have access to digital futures

37 It is also perhaps helpful to note that well into the mid-1880s, the concept of electricity was directly associated with magnetism. Electricity came from magnetism, often termed “magneto-electricity;” it was not until the adjective “electrical” went into the popular zeitgeist that electricity was conceptually separated from magnetics (Gooday 2008, 49).

38 In electrical engineering, a transformer alters currents, used to “step up or step down” voltages and works with principles of magnetic induction to set something in motion. I call attention to this as it records the similarities between social performances and energy-as-electricity.

39 Within the realm of higher dimensions and alternative energetic relations, the question and possibility of alternative social orders, power structures, and relational possibilities took on radical implications. However, the utopian premise of alternative and interconnected energetic dimensions was not cohesive in their spiritual imaginings. White spiritualist men found it “difficult to not privilege white men in the future
they imagined” (White 2018, 89). White female mediums often channeled the spirits of exotic others. For example, in America the frequent appearance of Native American spirits in white women’s seances, can be attributed to both a racialized perception of the magically imbued exotic others, as well as a performative act of confronting settler guilt. The unsettling treatment of native peoples and an empathetic subconscious manifest as haunting and the unresolved social and political relations between settlers and indigenous peoples (Lehman 2009, 127). Meanwhile, black spiritualism proposed alternative dimensions as a space for understanding and conceptualizing alternative social conventions, ontological premises, and relational ethics. As W.E.B. Du Bois described it, such higher dimensions afforded a “vantage point of blackness” as a necessary component to achieving the values and intentions of America as the new country of moral and spiritual liberty which it proposed to be (White 2018, 94).

40 Luciano is currently working on a book titled How the Earth Feels, which is unpublished at the time of writing this dissertation.
Figs. 47 – 49 Clockwise: Land/scrapers at the Grand Theatre, performance for video; Video Link: https://vimeo.com/381589631; video stills of being nonsingular; owls roosting in the Grand Theatre; duet with a plant. Created as research for reimagining the role of performance and venue that brings together the human and more-than-human actors in order to expand perceptions of energy and storytelling. Photo credit: Geneva Foster Gluck. Video links: https://vimeo.com/381590488, https://vimeo.com/381590645
Now Showing at The Grand

While the Grand Theatre is currently closed to human visitors, this doesn’t mean that other species are not enjoying the open-air theatre space. In this moment of the Grand’s life we want to acknowledge the current artists who reside within the walls and protected eco-climate of Grand. The performers to this show are the plants, pollinators and foragers, from honeybees to hummingbirds, insects and bats, who fly over the tall walls in search for food. While the Grand is closed to humans it is still a venue for entertainment and enjoyment for other species.

Many of the plants growing and performing at the Grand (in the way plants do, as they respond to sunlight, temperature, water, photosynthesis and pollination) can be called opportunist, pioneers or weeds. They get these names because they take advantage of disturbed soil and unstable ecosystems. In some cases, this is detrimental to the soil and in other instances it helps build up nutrients and prime the soil for a more fertile future.

As we work towards revitalizing the Grand, we want to consider how the open-air nature of the space might be an opportunity to think about the plant, animals, and ecosystems which we might cultivate for the next “season of performances”. What might we plant inside the Grand to encourage, invite and help support the needs of our desert pollinators? How unique would it be to cultivate a Desert Theatre Garden in the Grand while we have no roof? How might planting native species such as agaves and yuccas be a new way into exploring stories of migration, community and interdependence that has existed in this space both before the Grand was built and well into the future of the Grand as a community venue?

- Text written for fundraising publicity for BAC and the Grand Theater, January 2019
PLACE ORIENTATIONS

At the beginning of this research project I proposed a series of questions regarding electricity and how *Performing the Electrical* (a practice-based research project) might reframe perceptions of energy-as-electricity with beneficial ecological a/effects. In the following section, I return to these questions in order to flesh out mesmeric rituals, a primary provocation of my dissertation, and what they do as social and ecological interventions, as a way to reflect back on some of the principal themes of the overall project. Mesmeric rituals are a way of framing perceptions, performances, and practices of energy-as-electricity differently and with greater awareness of globalized interconnections. This project has been informed by my ongoing relationships with a specific site, the Grand Theatre, an abandoned venue that sits several miles from the Mexico/America border in Douglas, Arizona. Therefore, I use this site to aid in illustrating how my provocations transform space through reimagining energetic relationships, and how such processes might function as methodologies for more kind and health-full spatial event-making. As Rachel Hann writes in *Beyond Scenography*,

the crafting of place orientation situates scenography as a process of material acclimatization that occurs *in time* – a process that can be immediate or durational, intellectual or intuitive. A scenography of place orientation encompasses personal and social decisions, as well as the conditioning affects of physical environments that channel and direct action (2018, 19).

At the same time, mobile energy and colonial, sexist, and racist policies have a deep lineage of collaborative place-making. These power scenographies include such places as factories, energy generation plants, hydroelectric dams, mines, and laboratories, as well
as the places which form to reflect these cultural values—theatres, galleries, and museums. These sites have historically provided the setting (scenography) for political theatre; speeches, rallies, protests, and propagandist imagery; events that perform power, instill values, and mobilize people/idea power. How then can redesigning such power scenographies afford new ideas to take place—become spatial and experiential?

Grounded in a performance studies approach, the following questions and my review of how they are addressed in my research speaks both to performance as a way of knowing and as worldmaking collaborations between human and more-than-human agents with social implications.

The Grand Theatre was built in 1919 to provide entertainment to the workers of the local smelting and mining corporation and served communities from the sister cities of Douglas, Arizona and Agua Prieta, Mexico. Today the Grand Theatre is a shell of its former self, with no roof, no electricity, and in need of structural repair. It is what artists Ivan Puig and Andrés Padilla Domene term a “modern ruin” (2011), a phenomenon in which ruination occurs not because of time, but by way of shifting values and unstable economics of globalized exchange. During this project, I have been working in dialogue with the site of the Grand Theatre as a creative collaborator and board member of Border Arts Corridor (BAC), a binational arts organization located in the US/Mexico borderlands. In 2018 BAC acquired stewardship of the Grand Theatre. While BAC’s vision is to repurpose the theatre as an open-air creation space and community venue, questions of how to serve the community and the role of an “ecologically attuned and decolonized creation space” loom large in our minds. For me, the interconnected and energetic principles of mesmeric rituals help guide my vision for reanimating the Grand.
By perceiving energy as the interrelated partnerships fostered at this site—such as labor, materials, technologies, creativity, sustainability, as well as histories of colonialism and fascist domination of peoples—the partnerships that are forged in the Grand’s reanimation intentionally draw new lines of power through decolonizing and re-feminized practices. Rebuilding and repurposing the Grand is an invitation to think of craftsmanship, art, and design synthesizing with sustainable technologies and interventional performances. While the sources of capital needed to realize such a project pose other ethical questions, we are approaching the project through community and regional development that grows from the center outwards. In the following section, I not only recap the driving questions of Performing the Electrical but use the Grand Theatre as a site to illustrate how mesmeric attunements function in place.

Performing the Electrical began with the question: What might happen to global energy dependency if electricity is viewed not as an industrial process but as an enchanting elemental phenomenon? And, if not all knowledge resides in language then how can the tacit aspects of energy dependency be communicated through performance-making? What emerged in response to this provocation was a form of ritualized event-making, which I call the mesmeric ritual, that blurs perceived divisions between the spiritual, scientific, political, sensual, environmental, technological, living and non-living. Such blurring occurred through material, aesthetic, and atmospheric storytelling, abstract narratives, and assemblages that emerge through more-than-human performances. Working with vibrant materials such as metals, salt, algae, fruit, vegetables, and skin to produce electrical phenomena such as light and sound effects expressed the hidden and subtle electrics of materials. At the same time, by observing
electricity production in such humble and delicate processes, questions of scale emerged, troubling the large-scale and aggressive forms of modern electrics. In my practice, I perform making energy as friction, chemistry, and electromagnetics, effects which the audience also participates in. These encounters invite the audience to perceive energy directly and differently. Kinesthetic experiences were accompanied by text and soundscapes that made present the social, political, and environmental implications of thinking of energy in more holistic ways. As a scaling effect, bridging the incomprehensibly large climate crisis with everyday practices, these encounters were enchanting as they interrogated normative, utilitarian, and technological processes of energy production through delicate and sensed encounters. While these encounters were similar to the scientific expositions that one might encounter in grade school, the context, aesthetics, and atmosphere of these encounters implicated histories, identity, and systems of knowledge. Energy-as-electricity was visible and sensible as energetic phenomena as well as a cosmology story—natural and scientific, technological and magical, political and social—and most importantly a process that has always been worldmaking and atmosphere forming. The tacit and haptic information conveyed in enchanting encounters with energy is a necessary component for thinking more fully about energy dependency, the climate crisis, and transforming how we perceive energetic relationships.

As a scaling proposition, what would it mean to reanimate the Grand Theatre as a venue for creative, ecological, and socially engaged exchange, informed by the interactive and experiential features of Performing the Electrical? How might thinking of energy as mesmeric interventions draw lines of decolonizing and re-feminizing power geometries into being? With the electrical infrastructure removed from the building
sometime after its closure in 1958 (the value of the copper more easily accessed than the value of a functioning venue), there is an invitation to consider how illumination, sound, and power might function in this space differently; not just as utilitarian processes with ecological implications but also as social, political, and creative potential. Located in the borderlands, the Grand geographically resides in an in-between space. We might consider this physical betweenness to be ideal for reframing energy as that which moves between; as the trans-corporeal features of utility, science, technology, magic, and nature.

While the border wall manifests through a rhetoric of nationalism and division (and an extreme amount of energy resources wasted on conflict-fear rhetoric), the borderlands reflect the flow, exchange, and interdependence of place, as the ecology of place comprises itself through time; from communities that predate the border to the animals, water, and air that forever move between and through borderlines, walls and perceived national(ist) separations. While my research establishes a connection between modern perceptions of energy and the subjugation of people and ecologies by and through colonialism, fascism, racism, and classism, the site of the Grand becomes a radical provocation for actively contesting these histories, by practicing new and other ways of energy-rich social exchange. Additionally, in a region where technology is often practiced as surveillance domination and control, the site of the Grand actively performs kinder, more just and generative possibilities where art, technology and ecology intersect. As a modern ruin, the Grand inherently calls into question the notion of modernity as an ever-evolving positive proposition. Leveraging these qualities as the foundation for a bi-national creation space dedicated to creative, sustainable inquiry while providing a
community space to reevaluate the role that energy will play in future space making and space keeping, is a mesmeric ritual.

Ritualistic encounters become activist interventions. As information, their effects communicate through tacit and haptic encounters, as atmospheres that express worldmaking in normally unthought ways. Mesmeric approaches as a methodology for place-making and place-keeping at the Grand open up space for other possibilities in energy-as-electricity relations, which, at the same time, function as socially transformative propositions that can be understood as decolonizing, reframing energetic relations as emergent power geometries formed through sustainable community practices and creative initiatives. Here mesmeric rituals would become community learning and skills sharing of sustainable energy production, growing energy in the form of community gardens and bioenergy (from composting as soil production, to energy-rich waste management, with direct implications on ecological sustainability, water management). Developing sustainable and energy-rich processes as creative inquires, speculative desires and future relationships that require care and interaction, in the way that solar panels, wind turbines, and composting energy production do, allows for energy-as-electricity to be sensed in kinesthetic and intuitive ways. Such interactions expand awareness around energy, material relationships, scale, and side effects to form critical environmental and ecological connections. But, exploring such topics and generating new knowledge through creative, artistic, design, and embodied expression not only expresses information beyond language but challenges hierarchies of knowledge.

Site, materials, and re-enchanting electricity led to my second motivating question of this research: How do histories of scientific knowledge, religion, empire-building, and
capitalism affect how electricity was perceived, and commodified? And, in reconsidering these histories, can I locate ontologically transformative and generative possibilities for new electrical relationships? Mesmeric rituals are oriented towards making present the often-invisible space of history. They make sensible the ways in which systems of knowledge direct and develop through preexisting lines of power, and also, the way that power has been used historically to disrupt other, often older, or preexisting practices that do not align with modernist visions. The Grand Theatre helps illustrate the interconnection and tension between value and energy, histories and futures. To begin with, the Grand Theatre emerged through and prospered from the profits of copper mining and smelting. As materials with international demand, copper was first needed to meet the demands of the new telegraph communication technologies. Later, profits boomed as WWI created an insatiable need for copper components to ammunition, artillery, and communication. The venue reflected the extreme wealth produced by historically lucrative partnerships forged between extraction and warfare, as colonial and empire-building technologies. By the time Arizona mines were no longer competitive with foreign production, the land and water of the area were deeply contaminated, and the community faced little economic diversity outside of mining. While local communities continued to use the Grand as a place for social gatherings, the building was sold to an East Coast investor, who stripped the interior and left the building for abandoned.

Having come full circle, the site once again resembles landscape and archeology, open to the elements and without modern infrastructure. As a provocation for mesmeric rituals in place, the Grand makes these histories apparent while at the same time calling for speculative visions for other ways of relating to materials, spaces, labor, and
sociopolitical power. What might emerge if, rather than rewiring the venue for grid electrics, we invested in solar panels, created light installations while growing a garden, and practiced gardening techniques of composting and sustainable food production in the venue? What types of anarchistic and indigenous technologies might emerge as intentional interventions into colonial technologies? And how might these expand economic as social partnerships in new ways? What would a creation space in the borderlands do if it was oriented towards making energy as acts of caring for one another and the Earth? As the human and more-than-human partnerships forged through energy-rich processes of decomposition, chemistries, movement, and interrelation, how can histories and futures become catalysts for transforming what is valued, as decolonizing and re-feminizing propositions?

In asking *who or what haunts us*, my practice often returned to assemblages of power, performed and material, forged through systems of knowledge as ways of perceiving the world and thus worldmaking. The Grand, the border region, and even the funding of such an undertaking, call into question the materiality of power as that which is sensible but often invisible and intangible, yet present, nonetheless. Haunting is both the afterlife of materials and the residuals of social practices embedded in systems of knowledge. We are ghost makers in our actions, social performances and daily activities, but in this way we also have agency in who or what haunts us in the future. Considering the notion of haunting at the Grand Theatre, we are asked to connect the materials, economics, and identities of the Grand’s history with its present and future state of being. This includes the power geometries formed through energy-rich materials mined in the area as well as issues of land occupation as mining of coal, gas, and nuclear energy.
production disproportionately affect native and marginalized peoples, the ways in which land and water contamination are related to the borderlands and the abandonment of communities. Such geographic and geological histories come to haunt place as that which cannot be easily seen but which resides in the space as energetic power: border rhetoric, control of resources, the economics of warfare, militarization, social and environmental racism—all contribute to destabilizing histories that haunt into the future. The proximity of the border wall makes these abstractions more tangible at the same time as the border wall becomes a site at which to challenge these specters. Creative exchange and partnership that work toward changing the value of energy-rich processes (from recycling and anachronistic designs, to reframing social performances of consumption), are acts of resistance that shimmer in this place, so that the present haunts the past. The provocation of the Grand as decolonized and re-feminized creation space is to anticipate what will haunt us in the future and to cultivate practices that produce more diverse, sustainable and desired futures.

At the start of this research project, I had anticipated working in collaboration with digital and electronic designers so that new technological possibilities would develop alongside this research. I anticipated such collaborations with the question: How do I provide opportunities for myself and others to encounter electricity in new and different ways? And how do I do this without glorifying new technologies, but rather, the subtle processes, relationships, and potential of electrical production? Yet what I discovered by thinking of energy-as-electricity in relation to place was that technologies—as electronic and digital effects—were very difficult to disentangle from modernist visions of progress. Rather, technologies which resided in ways of perceiving and sensing interconnection
were in fact much more important to the aim of this project as a social intervention; and in context of place served as a reminder of colonial domination, especially in the case of certain technologies. Therefore, two primary methodological shifts occurred during this research. First, I pivoted my inquiry to be more speculative in nature. This adjustment gave me the freedom to imagine the ways in which I wanted to interact with energy production and energy-dependent technologies. Second, I realized that much of my questioning was informed by place and in response to issues of the borderlands, nationalistic rhetoric, racialized spaces, and dominated economics and that place could help guide speculative desires to become social interventions. In these ways technologies which I thought were going to co-evolve with this research, now act as propositions. They are what come as we shift values and social performances in place. The Grand Theatre orients speculative technologies towards arid lands, recycling and repurposing waste, a lack of water, and an abundance of sun.

Place orientation and interrogating colonial technologies led me to work with the idea of anachronistic technology. This is a performative and design-based proposition that challenges the notion that something is “out of synch with time” if it maintains actions which can be replaced by technology; as though technology is always more beneficial when it require less interaction, labor or time, even when these features come at the expense of other people and ecologies. Such an assumption enforces a linearity to time which our ecological crisis disproves. Speculative objects and anachronistic technologies encourage us to feel electricity as movement, chemistry, and electromagnetics, orienting us to the question, what haunt us in the future? Anachronistic technologies allow hauntings to become part of a technology. That we might “revert” to
more laborious technological partnership begs the question, who or what labors for you? As I propose previously in this research, decolonizing and re-feminizing technologies is necessary so that we might labor with awareness in our partnerships, extend energetic partnerships into the future, and through the afterlife of materials. Through our kinesthetic imaginations, we make present memories and yet-to-be realized desires, specifically the desire to live in a more kind and pluralistic world—one which does not perpetuate colonial technologies at the cost of human and more-than-human agents. Perceiving technologies in an expanded field of love, imagination, or media as the sun, moon, and seasons is a first step towards reframing technologies as socially driven actions. The aim of the Grand Theatre as a community-led creation space is to provide space and assign value toward orienting differently to technologies.

I concluded with the broader question: In what ways are performance and electricity similar? Both share qualities of live-ness, ephemerality, trans-corporeality; they are both dependent on relationship; both exhibit features of charged atmosphere; and the affective/effectivity of power. Together how can they raise engaging perspectives to the question of, what powers power? I went into this research thinking I was focusing on electricity as it relates to energy dependency. Yet this distinction now seems less relevant. Electricity is a lens for viewing power relations, but electricity is just one feature within the energy-scape of power. At the same time, performances occur as the human and more-than-human relationships, as an event, actions, and reactions in space. By thinking of energy-as-electricity and performance event-making as similar emergent processes, I hone in on two new concepts, land/scraping and unEarthing, which aid in
articulating the performative relationship between ways of perceiving the world around us and the ways in which our actions manifest such epistemological visions.

Land/scrapes describe a way of seeing the world and thus worldmaking. The site of the Grand Theatre emerged out of land/scraping, not just as the literal capital and materials of the site, or its ruination (being stripped of its valuable materials and left uncared for), but through the powers forged in the social contracts of land/scraping ontologies. Land/scraping emerges through colonial, fascist and classist epistemologies, as performative land/scraping has no commitment to place or deep time. Such a/effects are witnessed at the Grand Theatre, as the agents of its becoming and its ruination reflect material land/scraping valued at the expense of place and community. Land/scraping denies the agency and vibrant materiality of an interconnected world, rather like a backdrop of scenery on stage: the land/scrape influences how space is perceived and the actions which take place in it.

UnEarthing is similar to Augé’s notion of the non-place (2009) but situates our ephemerality in our terrestrial home. UnEarthing is dangerous, in contrast to the way that earthing is an electrical utilitarian safety mechanism in which excess or un-pathed electrical energy is absorbed by the Earth. UnEarthing occurs when excess energy in the form of toxins, pollution, and waste can no longer be absorbed. In order to Earth ourselves, we must think of energy as the performance of relationships, processes, values, and intentions. As a provocation, Earthing directly relates to place. For example, visions for rebuilding the Grand Theatre into a community creation space is Earthed by principles of locality—as material and regional ecology relations, as well as workforce, aesthetics, collaboration, and skill sharing. As a design principle, this is not necessarily
ecological development but centered around place as a social intervention in which deep
time, histories, and futures animate as performed relationships and aesthetic
communication of place. What is communicated when repairs occur not as replicas of
Greco-Roman plaster reliefs but merge into clay designs and patterns inspired by regional
history? What is gained by caring for the venue like a garden, a site for growing energy
(food and electricity), in which theatre, film, and music entertainment occur in an open-
air, regionally specific gardening space, where maintaining the venue also means learning
and developing sustainable skills? As a speculative creation space and community center,
the Grand Theater can be viewed as an earthing site. The potential is to put into practice a
new system of values, to work dialogically with histories and futures. In doing so, new
power geometries emerge, etched into space through phenomena, partnerships, and
energy-rich creative relationships.

Land/scrapes and unEarthing are useful concepts for visualizing and connecting
power geometries that function in place, with the histories of place. These concepts work
both within scenographic practices as well as a broader understanding of more-than-
human agents, perceptions, and worldmaking. The site of the Grand theatre helps
illustrate these propositions. By tracing land/scraping as a way of seeing the world, we
draw connections between the ecological damage of not just aggressive mining in place
but also the long term effects of ontological land/scraping which prioritizes extraction
and capital profit, often going to foreign investors, and which leave places and
communities with damaged ecologies while limiting means to sustainable livelihoods.
Yet land/scraping as the ghosts that haunt us appear as warning signs—to not go down
these same paths. In the rebuilding of the Grand, aesthetics, materials, and energy-rich partnerships actively challenge land/scraping as conscious decisions to make kinder future ghosts, those that do not unEarth us. Rather, we engage in energy-rich processes and relationships that ground us in place, in cyclical and sustainable systems, so that the afterlife of material relations are becomings, accumulations, and transformations. Mesmeric rituals allow us to sense the specter of energy-rich relationships and orient ourselves in place, community, and more desirable futures.

Performing the Electrical provides tools for shifting the ways we perceive the world by considering energy as a form of interconnection. By proposing energetic relationships of utility, digital data, e-waste, and energy-rich material within the domain of mesmerism, we become more conscious of our communications with one another and the Earth. My research asks ontological questions and employs practice-based methodologies that aim to function as social and ecoscenographic interventions oriented in place and in the time of climate crisis. By framing performative interventions and acts of caring for Earth as mesmeric rituals, I make energetic relationships present and sensible. As one way into and through the inconceivable scale of our climate crisis, mesmeric rituals are speculative performances that animate desires for kinder and more ecologically valued future, connecting us all through the electrified either.

41 In Fall 2020, I plan to develop and present Performing the Electrical at the Grand Theatre in collaboration with Border Arts Corridor. The performance will develop as a community engagement project putting into practice spatial, material, and energetic devising principles generated during Magnetic Chamber events. Presenting this work at the Grand Theatre will also function as a fundraising event for the building and as a way to communicate our vision through evocative event-making.
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