



## **Decay: An Experiment in Mycoremediation**

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## Introduction

To live on a damaged planet means that nothing is certain. The exploitation of humans and the environment through capitalism and colonialism make all ecosystems unstable and precarious, a harmed earth. We must work to find solace in the things that are reliable within precarity, things that feel right and instill hope, things that can produce trust and love. Fashion is where I find solace, because it is a way to express and communicate even when words fail, a way to be silent but still have a voice. Another place of peace I have found through this thesis is caring for non-human entities, beautiful relationships where the work you put in is reciprocated and a strange kind of understanding is developed. A third, much more unexpected comfort I found along the way is decay. Decay provides the knowledge that when all else fails, the things that no longer have a place in this world are put to rest and their nutrients are used to start the next cycle. The next cycle includes the knowledge of the last and the will to make the changes needed for a new world. The cyclical nature of our planet is stronger and more resilient than any single force acting from it. Fungi are harbingers of decay, but their power and wisdom extend further than simply breaking down other organisms; fungi build and rebuild entire ecologies. As artist and mentor for me in this project Kaitlin Bryson says, “If you are what you eat, fungi are the world many times over.”

This thesis weaves together the connection I, and many others before me, have found in fashion with the wonders of mushrooms and the subterranean world. Fashion is empowering, but it is also another example of a problematic institution that factors into the damage on the planet. The industry produces 10% of the world’s carbon emissions and uses outsourced, low wage workers in dangerous working conditions (McFall). For my creative honors project, I built an experimental play space in Corpus Arts, a queer resource center in Albuquerque, New Mexico, that explores fashion and fungus in a community-oriented, non-hierarchical way of teaching and

learning. The play space included living fungi, artworks, experiments, workshops, literary resources, and a zine that participants could interact with. It draws from the works of different scholars, such as Brazilian educator Paolo Freire, indigenous poet and botanist Robin Wall Kimmerer, and radical figures in amateur mycology like Peter McCoy and Paul Stamets. This work is a way to cope with a distressed earth as much as it is a way to fight against it. It is a continuous process of learning and unlearning, a process that will never finish and can take on as many forms as it needs to get its job done. It is also an invitation to those experiencing it to explore new ways of knowing the world and acting within it.

## Section 1: Theoretical Foundations

Countercultures and marginalized groups have used textiles and fashion as a political tool for the expression of personal autonomy, from queer culture to Ghandi's Swadeshi movement. Clothing is a medium of communication we use daily that can empower us, but it can also be used against us. Mainstream fashion is a historically oppressive, colonial power structure through which cultures are marginalized, assimilated, and subverted, such as culturally appropriative styles from fast fashion retailers. Fashion is a tool that can help us understand ourselves, but it is also a socially and environmentally irresponsible industry which produces harmful pollutants and uses unethical labor practices. Harming our people and environment creates a dissonance between human ecologies and "natural" ecologies. To split the human and natural world is a colonial architecture that alienates people from the ecological and intellectual resources of their communities and fashion is a tool that can either empower or further alienate us. How do we start to heal? We can learn from non-human species to better our human ecologies. Mycelial networks, the underground fungal colonies that produce mushrooms as a fruiting body, are vital information pathways for the health of forests and benefit the greater ecosystem while still maintaining their own survival. In this thesis, I use this network as a model for social and environmental change. The low expense, organic nature, and accessibility of community-centered DIY fungi cultivation creates a potential for it to be a material and theoretical resource for fashion and the exploration of experimental textiles. DIY (do it yourself) refers to an ethical strategy employed by countercultural groups that implies grassroots based cultural curation that relies on the volunteer efforts of small communities. To play (experiment without the pressure of a product) with empowering materials and concepts through a process-based method creates a place and experiences that cannot be appropriated in the alienating system of mass production

that the fashion industry relies on. By creating a hands-on, community activated play space for these ideas, I empower individuals through creation and cultivation. This creative thesis outlines the decolonization of historically oppressive structures and seeks to function outside of them by forging a new path for the future using self-sustainable and accessible materials as tools for fashion using DIY ways of organizing to empower communities.

### **Fashion: Identity vs. Commodity**

The way we dress ourselves displays who we are and who we want to be; it is a ritual of translating our intimate connections with our own bodies to those who see us. In her essay “Cyborgs, New Technology, and the Body: The Changing Nature of Garments,” writer and curator Anne Farren states that “the garment becomes an information medium that extends the function of the skin” (462). Clothing protects us from the weather, tethers us to culturally sanctioned values, and provides an intuitive route to self-expression. Eric Ing, professor of Aesthetics and Politics at the University of Toronto notes “since the body must show itself clothed, it is impossible to disregard clothing, or consider it an irrelevant accessory to an individual’s identity” (2). An article of clothing exists in the culture of fashion it embodies, and it is important to larger societal practices and structures. How people dress is a clear communication of where they place themselves (or are placed) in society. Paola Antonelli, a curator for the Museum of Modern Art and author of the companion book to the 2017 show *ITEMS: Is Fashion Modern?* at the MoMA claims: “Fashion partakes in all the existential dilemmas of design, and since its involvement in our lives is so intimate and intrinsic, it is an especially agile mediator between the universal and the personal, capable of magnifying our rawest emotions” (15). When we get dressed in the morning, we hope to decide what we want to

say with our presence, but sometimes aspects such as our jobs or social class decide that for us. The clothes we wear are a direct extension of our bodies and ourselves.

Bodies are our common ground, and we are fascinated by our own body and the bodies of others. Fashion is an art form that physically addresses our own corporeality. It can be a subversive method of self-empowerment, but it is also related to troubled class dynamics and oppression. In some situations, what we wear is a display of our autonomy, and in others (think: what we wear to go out vs. what we wear to go to work) it is a way to differentiate us into social and economic classes. Jane Alison and Sinead McCarthy, head of visual arts and assistant curator at the Barbican in London respectively, wrote a companion book for the 2016 exhibit *The Vulgar: Fashion Redefined* discusses the subversion of upper-class dress etiquette. This etiquette generally aims to distinguish classes and maintain clear distinctions. They claim, “It’s project is to sustain its own sense of distinction, of privilege, which requires a certain violence; the insistent violence of telling people who you are by telling them who you are not (which usually involves the ridiculing of people you don’t want to be, or getting ‘rid’ of them)” (Alison, 20). The branding of luxury fashion helps to maintain luxury brands as authorities and aims to make style financially inaccessible to lower classes. However, trends that are co-opted by the fashion industry are often created by the same communities that the fashion industry marginalizes. Eric Ing gives us an example of this:

Trends such as baggy jeans and not wearing shoe laces were created by the disenfranchised black communities. Down-filled coats and Timberland boots came into style in the 1990’s and were worn by many inner-city young men not out of fashion, but out of necessity. Many drug dealers would be forced to wait outside in cold weather for

extended periods of time, forcing them to spend the money to purchase the warmest clothes possible. (Ing, 3)

The relationship between hip hop street fashion and luxury fashion is long and complicated. Luxury branded clothing is sold to impoverished black communities as a status symbol. When this street fashion became popular outside these communities, some black designers were elevated, but as the market became saturated through appropriation, these designers were the first to go out of business. Brands like Marc Jacobs and Gucci profit from these trends but will ultimately stay in power while they contribute to the devaluation of the brands they are taking from (*Fresh Dressed*). This example is just one way the fashion industry functions as an oppressive structure.

While the fashion industry has serious implications in maintaining a class hierarchy, it is also stigmatized in the art world and mainstream culture. Museums like the Museum of Modern Art have traditionally had textile departments but rejected fashion as a “serious” art form, preferring textiles designed out of context from fashion (Antonelli, 16). These stigmatizations come from the very things that make it a powerful tool for people as a liberating force. It’s associations with femininity play a role in its stigmatization. Antonelli asks the question:

What was—and is—the issue with fashion? Perceived frivolity? Codependency—the idea that we always dress for others, a fluid form of relation aesthetics that would be an anathema in modern design? Its association with the feminine and consequent dismissal by the largely patriarchal powers that be in museums, in academia, and pretty much everywhere else? It’s slow rate of absorption by major fine arts institutions, even while artists—from Louise Bourgeois to Joseph Beuys to Andrea Zittel and Yinka Shonibare—



have recognized and deployed clothing's considerable power of expression? Or perhaps it's immediate digestibility by the popular market and its excessive commercialism, which contribute to the taint of "vulgarity" often cited to support an artificial separation between design and fine arts (which are famously devoid of commercial value)? (16)

But really, only certain groups can care about the institution of "fine art." In 2018, it was revealed that the vice-chairman on the board of the Whitney, Warren Kanders, is also the owner of the weapons manufacturer Safariland which produces teargas used at the US-Mexico border (Vartanian). The Sackler family, founders of Purdue Pharma which produces OxyContin and other pharmaceuticals, are a major contributor to the Metropolitan Museum of Art and the Guggenheim (Newton). These examples, as well as countless other ties of these institutions to money from corrupt industries and cultural hegemony, reveal fine arts as another complex system of wealth, status, and gatekeeping that we must leave behind. Although artists are often independent, who gets to show in these museums and the criteria of what makes "good art" is determined by oppressive power structures influenced by funding. Who cares if museums accept or reject fashion? What if, instead, we reject museums and other institutions of "fine art"? Can the role of art and the artist shift to no longer pander to these systems? Fashion, outside of its industry, has an ability to connect people, places, and ideas because everybody has a personal relationship with it. Consequently, the relatability of fashion is also what makes it an ideal commodity which can be abused to exploit lower classes via labor, social status, and environmental degradation. Fashion makes people feel good, so introducing it as a low-cost, disposable commodity is a profitable business venture. How can we use fashion to escape hierarchy while also holding it responsible for its role in industry?

The complexity of fashion as a commodity contributes to the stigmatization of fashion, which mixes narratives of fashion as a means of self-expression with fashion as an elitist practice. Eric Ing states:

The link between personal identity and fashion is often expressed in negative terms: fashion reduces individual's freedoms and diminishes their choice. Fashion is often perceived as hegemonic. What becomes fashionable is the result of negotiation among individuals and collective actors who have different levels of economic and symbolic power. (2)

The fashion industry exerts power over individuals, but personal power in fashion exists, and can be used against these oppressive forces. Queer identity through fashion is an example of this concept, as described by artist and journalist Alexander Cavaluzzo “[...]the demarcation of gender in fashion [is] clear in Western style; ornamentation and embellishment, specifically, was reserved for women[...]This schism in gendered western fashion allowed a new type of identification and subversion for queer individuals to adopt” (Cavaluzzo). In textile historian Julia Bryan Wilson’s book *Fray: Art + Textile Politics*, she describes the chaotically assembled costumes of two queer theater groups in San Francisco in the 1970’s, The Cockettes and The Angels of Light. Both groups were pioneers of drag, and adorned themselves with homemade, low budget costumes designed to shock and express. She says these costumes “aligned handmaking with countercultural worldmaking—as an individualist practice of differentiation but also within a larger, if somewhat inchoate, communalist project” (Wilson, 45). Here, fashion occupies a revolutionary space of subversion and empowerment within a community.

More politically direct examples of the subversive nature of clothing also exist. One of these is the Swadeshi movement in India in the early 20<sup>th</sup> century, which called to wear only traditional, hand spun khadi fabric from India to subvert British trade and imperialism (Gonsalves). If we can separate fashion from its oppressive structure and rediscover handmaking as we have done time and time again, fashion is able to speak for us and assert power. It is a clear visual reminder of our potential as individuals.

### **Environmental Repercussions of Fashion Industry**

As it exists precariously on the axis of design, fine art, and a utilitarian need, fashion is widespread and can be ecologically and culturally restrictive. Anne Farren states “There seems to be no real limits to the cost, danger, discomfort, and inconvenience that can be sustained to satisfy the human need to display and to see others displaying” (473). In fact, the environmental destruction that comes from the fast fashion industry is phenomenal. Antonelli cites “The death of more than 1,100 workers in 2013 when a garment factory in Dhaka, Bangladesh, collapsed catalyzed public consciousness of how complexly entwined the fashion system is in our social and personal economies.” (15). The practice of outsourcing labor to create fast fashion is explicitly used to exploit workers and avoid environmental regulations. According to *The Saturday Evening Post*, the average American throws away 81 pounds of clothes a year (Gilmore). However, if we dig deeper into this statistic, we find that this factoid is taken without context from another statistic saying that 9% of U.S. landfills are textile waste, adding up to 13 million tons per year (Frazee). Most people who come across the 81 pounds of clothing waste per year statistic probably don’t relate to it and realize that if they don’t contribute the full 81 pounds, there must be some “other” force making up the difference for them. Perhaps this conjures ideas of other, much more wasteful Americans, a division that acts on class lines. In

fact, by dividing up this statistic per person, it pits the “average American” against each other, while ignoring the amount of clothing waste produced by stores and other industry. In 2018, H&M reported 4.3 billion dollars in unsold stock, and no plans with what to do with it (Cornish). Dividing the problems in clothing waste per person shifts the blame of waste production to the individual and off the people supplying the goods, insisting that the issue is a lack of ethical consumption. This insistence creates a cognitive dissonance that can confuse people away from actualized change.

The fast fashion industry is just one of many industries that profit from labor and environmental exploitation. As the role of fashion in culture is ubiquitous, its consequences are often overlooked. Jane Alison and Sinead McCarthy state, “With the growth of mercantile capitalism, pleasures are also increasingly defined as luxury goods, and the desire for luxury goods being the justification, if not the inspiration, of the slave trade” (11). Fashion is personal and social, but it does not exist in a vacuum. The manufacturing of clothing makes the industry flawed before the clothes even reach the public. If clothing is produced unethically, then how can it be ethically consumed?

Fashion is not only an amalgamation of the histories that inform it, but also something we will continue to need in the future. Fashion is ubiquitous, we can’t escape it. However, we can adapt it as a tool for self-actualization. Anne Farren states “We do not usually consider ourselves to be dressed in technology, and this is indicative of just how involved we are with it” (463). Fashion is technology, a tool that we have developed to address problems. It physically protects us while stating who we are. We can approach this with both inspiration and caution. The future is not to be feared if we act thoughtfully. If we actively try to remediate the negative cultural and

environmental impacts, fashion and technology can enrich our lives. The key to solving problems posed by fashion is not to devalue it, but to critically embrace it—accept the parts that make us and reject those that break us.

### **Solving the Fashion Dilemma**

A way to begin thinking about the problems that fashion causes is to focus first on the basic materials used to make it. In a paper published in *Journal of Textile Design Research and Practice* sustainable textile designer Atule Margaret Akpa proposes a list of what we need from sustainable materials: “Will it fit in? Will it last? Is there a precedent for this in nature? Does it run on sunlight? Does it use only the energy it needs? Does it fit form to function? Does it recycle everything? Does it reward cooperation? Does it bank on diversity? Does it utilize local expertise? Does it curb excess from within? Does it tap the power of limits? Is it beautiful” (55)? While this approach is product-based, it does help us begin to form an idea of what we need from textiles. To truly ask what we need from materials, we need step even further back and view our relationships with where we source these materials, our relationship with them, and their greater ecological role. While the average person doesn’t have a say in mass market production, we can study and look at materials that exist in our environments, or ones that have been used successfully before. Anthropologist Anna Lowenhaupt Tsing offers a history of material exploitation in her book, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*:

In the nineteenth century, when capitalism first became an object of inquiry, raw materials were imagined as an infinite bequest from Nature to Man. Raw materials can no longer be taken for granted. In our food procurement system, for example, capitalists

exploit ecologies not only by reshaping them but also by taking advantage of their capacities. Even in industrial farms, farmers depend on life processes outside of their control, such as photosynthesis and animal digestion. In capitalist farms, living things made with ecological processes are coopted for the concentration of wealth. This is what I call ‘salvage,’ that is, taking advantage of value produced without capitalist control. Many capitalist raw materials (consider coal and oil) came into existence long before capitalism.” (62)

How do we approach material use without exploitation? We can see it in a scientific way, like Atule Margaret Akpa explores, by asking questions and evaluating possibilities and restrictions. We can also explore material use by envisioning relationships to resources based on mutual respect and understanding. We, as humans, formed our current ecologies and have the potential to create symbiotic relationships in them. To exist sustainably, it is important to approach it both scientifically and thoughtfully, making sure we can care for our ecosystem. We can also acknowledge that environmental remediation can’t be bought. In order to disrupt the cycle, the entire basis of the system must be challenged.

### **How Does Fungi Fit In?**

Fashion has ties to mycology as an empowering citizen practice, where style and knowledge is distributed from the bottom up. Mycology is a science that lends itself to cultural and ecological remediation and is accessible to individuals, because the knowledge of mushrooms has traditionally rested in the hands of non-scientists and people who know the land. Contemporary mycology continues in this legacy. Mycology educator Peter McCoy states in his book *Radical Mycology*,

It was often the women of history who carried on the responsibility of harvesting wild fungi to feed and heal their families. By practicing and maintaining these skills throughout many generations, women around the world possessed the richest and most comprehensive understanding of the taxonomy, biology, and ecology of local fungi diversity. (82)

Women initially brought mycological knowledge into human knowledge, and this partnership is woven deeply into our associations with mushrooms. Fashion is also associated with the feminine, which ties mycology to fashion. Even mycology as an institutionalized science came from traditional maternal folk knowledge. McCoy cites Carolous Clausius and Fransciscus Van Sterbeck as the founders of modern mycology and says, “Most of their research came from conversations with folk-women in the marketplaces of Eastern and Central Europe” (82). When mycology was brought into mainstream scientific knowledge, some space was created for mushrooms in our understanding of ecologies. However, it is still not studied comprehensively on this level. For example, only 1.5 % of the estimated existing species of fungi have been identified, while 90% of the estimated existing plant species have been identified (McCoy, 611). In contemporary science, the persistence of mycological knowledge has a place in the hands of the people. McCoy states:

Over the last 50 years, the major interface between academic mycology and the general public in North America has been through devout efforts of amateur (from the Latin *amare*, “to love”) mycological societies. During that time, these stewards of knowledge have significantly helped maintain public interest in mycology among westerners, while also spanning generations of committed field mycologists.” (McCoy, XIX)

Mycology is often practiced as a “citizen science” in many cases because the knowledge is decentralized, it does not “belong” to anybody except those who seek it. While fields such as chemistry are run almost entirely through institutions, there is an entry point to mycology outside of established academic resources. As referenced in the prior quote, the term “amateur” is rooted in the Latin verb “to love.” Mycology is born out of a respect of and relationships with fungi. This knowledge is then shared among people within these communities, which is an analogy to mycelial patterns of spreading information. One example of this knowledge coming together is the Radical Mycology Convergence, a gathering hosted by McCoy which is described as “a grass roots gathering of mushroom people spreading the spores of their knowledge and work with fungi” (*Radical Mycology Convergence 2018*). Another is the POC Mushroom Gathering, an event organized by and for POC interested in fungi, noting that the nature of fungi lends itself to power in community (POC).

Like fashion, mycology is a stigmatized field. Part of why mycology exists as a citizen science is because it is largely ignored by scientific institutions. McCoy states “[Fungi are] recognized for their ubiquity and importance amongst biologists, yet mycology has remained a ‘neglected mega-science’ throughout its short, 250-year history” (McCoy, XVI). Why is this the case? One commonality between the stigmatization of fashion and mycology is their association with the feminine, as previously stated. In McCoy’s words “Much like the suppression of fungi, the global oppression of women has long been noted and yet its origin remains unclear.... (The) male-dominated, genetic focused approach to modern mycology (owes) its origins to the theft of knowledge from herb-wives and witches of the past” (80). A mythological association with mushrooms as “evil women” exists in both science and literature. Other proposed reasons for the stigmatization of fungi include fear of poison, and fear of death, but neither of those explain the



full story. Many plants are also poisonous, and many cultures historically revere death. McCoy remarks “Surprisingly, mycologists and historians rarely acknowledge the fact that, for no substantial reason, some cultures have chosen to fear a common element in their environment” (75). Consequences of these fears resonate in current practices within mycology, just as they do with the stigmatization of fashion.

### **Ecological Role of Fungi**

Despite their stigmatization, however, fungi are helpful and resilient organisms which we can learn a lot from, including in our relationships with fashion, materials, and even other arenas like computing. Anna Tsing captures her belief that mushrooms can help save the world by saying “When Hiroshima was destroyed by an atomic bomb in 1945, it is said, the first thing to emerge from the blasted landscape was a matsutake mushroom” (3). Mushrooms are incredibly adaptable, and the matsutake is a species that helps remediate forest ecosystems by holding a symbiotic relationship with the pine trees, where both species work together to be the first responders in the event of deforestation (3). Mushrooms play a distinct role in reforestation, as an excerpt from mycologist and educator Paul Stamet’s book *Mycelium Running* describes:

Since we have changed the environment so radically in such a short time, nature needs our help in order to mend. Under ordinary circumstances, nature self prescribes fungi for its own healing. But since we have accelerated the forests’ natural destruction and renewal cycles, thereby creating massive debris fields for instance, through clear-cutting, we ought to help the forests accelerate the decomposition cycles by introducing mycelia in key areas—in essence by running mycelium. Otherwise our ecosystems will lose their equilibrium, destabilize, and crash, possibly becoming overrun by disease. By

encouraging selected saprophytes in this stressed terrain, we can increase the carrying capacity with greater nutrient flows, improve moisture absorption, bolster disease resistance, reduce erosion, and provide friendly niches for flora and fauna. (Stamets, 52).

Fungi can also help to break down plastics and chemicals, and filter heavy metals out of the environment. Stamets says “Fungi are adept as molecular disassemblers, breaking down many recalcitrant, long-chained toxins into simpler, less toxic chemicals. Mycoremediation also holds promise for removing heavy metals from the land by channeling them into the fruit bodies for removal” (86). Because of the complexity of the organism, not a lot is known about the specific mechanisms, that do this, but as Stamets says, “Mycorestoration is an infant science to humans, but a highly refined method used by nature for millions of years” (53). Imagine what we could do if we learned from the fungi’s role in remediation and applied it physically and theoretically. We can apply the methods that fungi use to produce healthy environments to reforest and nurture our own human ecosystems, including tackling the issues with pollution and labor exploitation that fast fashion faces. As fungi communicate and exchange nutrients within their ecosystem, we can also commit to these values: to prioritize communication and community spaces, commit to sharing resources, and to make decisions that benefit everyone. By experimenting with fashion material in community spaces by using accessible and responsible materials, we bring people together and address waste, pollution, labor distribution, and localized economies. To do these things, we don’t need permission and we can begin to challenge the core values imposed on us by capitalism.

Atule Margaret Akpa justifies her use of fungi in textile biomimicry by stating “Fungi are key to saving the planet as they have the potential to clean up pollution, fight pests and diseases,

create sustainable foods and fuel sources and serve as earth's natural internet, opening gateways for other biological communities to thrive. These characteristics, if deeply explored, hold the possibility for manifestation and application in sustainable textile design" (52). However, to truly utilize the power of fungi in commodity production, we need to challenge the core of current practices in manufacturing and selling items. On a large scale, this could mean closing the loop on production of textiles and other goods, and even fundamental restructuring on how we habitually buy, sell, and trade ethically. This takes massive time, effort, and waiting on people in positions of power to change their own values. Changing government policy takes a long time and consistently favors wealth of industry over health of people, and consistently isn't much help either. In the meantime, we must take these issues to our communities, which often face unique issues—and lack the resources that industries have. One example of this in effect is Frack Off Greater Chaco, a community-run resistance project to end fracking in the Greater Chaco region. Fracking hurts the people living in those communities, the land, the water, and furthers reliance on fossil fuels, and the main fighters of fracking are people in indigenous and rural communities that are directly affected by it (Frack). Community is powered by working class people. We aren't selling something, and our learning doesn't have to be regulated by consumer markets or guided by products. Inside a community, growth is measured in resilience, relationships, and health. There is power in deciding what that growth looks like.

### **Non-Human Knowledges**

Humans solve problems, but also create many more. We have not been around for as long as other organisms, and we can learn from how they function in their ecosystems. In *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*, poet and

botanist Robin Wall Kimmerer aims to reunite our current view of botany with indigenous wisdom, in order to regain equilibrium with humans as part of the environment. She says:

In the Western tradition there is a recognized hierarchy of beings, with, of course, the human being on top—the pinnacle of evolution, the darling of creation—and the plants at the bottom. But in Native ways of knowing, human people are often referred to as ‘the younger brothers of Creation.’ We say that humans have the least experience with how to live and thus the most to learn—we must look to our teachers among the other species for guidance. Their wisdom is apparent in the way that they live. They teach us by example. They’ve been on the earth far longer than we have been and have had time to figure things out (9).

The knowledge we gain from plants, animals, and fungi is vast and may take on many different forms. We can apply it to solve problems, such as using biological organisms to run computers. Scientists have used the physical movement of slime molds (a blanket term for certain unicellular organisms that can group together and move as a group) to run computers. The benefit to this is that “unconventional computing is a way to find new algorithms, paradigms of computation architectures implemented in nature” (*The Creeping Garden*). We can also use ecological processes to help answer large, complex issues. Anna Tsing urges us to learn how to live amongst destruction from the matsutake and pine relationship, characterizing the relationship by stating:

Other pines burn like matches—but have ways of ensuring that seeds will be first to sprout on the burned earth. Some store seeds for years in cones that only open in fire: Those seeds will be the first to hit the ashes. Pines live in extreme environments because

of the help they get from Mycorrhizal fungi. Fossils have been found from 50 million years ago that show root associations between pines and fungi; pines have evolved with fungi.... By colonizing disturbed landscapes matsutake and pine make history together—and they show us how history making extends beyond what humans do. At the same time, humans create a great deal of forest disturbance. Matsutake, pines, and humans together shape the trajectories of these landscapes. (170)

To answer questions using knowledge from our environment, it is imperative that we show a respect for these organisms and processes. We can allow nature to give gifts, but we also need to recognize and acknowledge them as gifts, and further build those relationships to prevent their exploitation.

### **Institutional Science vs. Citizen Science**

Science is a way of understanding the world, but it is just one language of many. A thorough knowledge of science can enrich our lives and generate wonderful technology and ideas. However, we must be careful, and recognize that attempting to understand the world by the smallest of its parts can severely limit our perception of larger systems. Peter McCoy details the flaws in this reductionist thinking, saying “Though this model has arguable created an efficient, assembly line style approach to gathering information, it has largely left behind the importance of connecting the dots that each field uncovers.” (XVI). Often each scientist is focused on just one small piece of the puzzle and as a result an interdisciplinary approach to science is lost and the larger picture becomes incoherent. Robin Wall Kimmerer has a similar critique of modern science. She compares scientific languages to indigenous languages. In her pursuit of learning Potawatomi, her ancestral language, she notices that much of what we

consider nouns in English are considered verbs in Potawatomi. She says “Science can be a language of distance, which reduces a being to its working parts; it is a language of objects. The language scientists speak, however precise, is based on a profound error in grammar, an omission, a grave loss in translation from the native languages of the shores” (Kimmerer, 49). She argues that by making something a noun, you define it in terms of humans, thus ignoring “the grammar of animacy” (Kimmerer, 49). This grammatic form is considered incorrect by the scientific community, but what can we learn by applying indigenous thought to fight reductionism? Can we open the doors of science to incorporate other forms of knowledge and limit the cognitive dissonance that arises from the separation of these knowledges?

Connecting science with other disciplines is not a new idea and has been done before. However, science does not often create space for these interdisciplinary interactions, so they often are not cultivated. Anna Tsing provides examples of merging scientific and non-scientific fields, and how these ideas have been discredited:

Consider, for example, Stephen Pyne’s fine work on fire in the making of landscapes; because his concepts are embedded in his histories, science studies scholars remain uninfluenced by his radical suggestions on geochemical agency. Pauline Peters’ trenchant analysis of how the logic of the British enclosure system came to Botswana range management—or Kate Showers’ surprising findings about erosion control in Lesotho—could revolutionize our notions of normal science, but they have not. Such refusals impoverish science, encouraging the play of concepts in a reified space. Distilling general principles, theorists expect that others will fill in the particulars—but ‘filling in’ is never so simple. This is an intellectual apparatus that shores up the wall between concepts and

stories, thus, indeed, draining the significance of the sensitivities science studies scholars try to refine. (159)

In order to accumulate a grounded perception of reality, we can't fall prey to the allure of safety that scientific knowledge without context can provide. We must listen to histories, to communities, and to non-human knowledges. Creating space for mixing disciplines is important in creating a sustainable future.

Studying a fungal body is a solution to reductionist thinking, because it is an organism that cannot be studied by looking at the smallest of its parts. If you were to study just a spore, or a mushroom, you would never understand the vast mycelial network that connects the fungi to itself and its environment. A BBC documentary titled *The Magic of Mushrooms* characterizes the relationship of the mycelia to the roots of other plants. The film discusses these symbiotic relationships and states “the root [gives] nutrients and the mushroom giving water, nitrogen, and phosphorous, which aides photosynthesis. It creates a healthier plant and fungus. This is fundamental to almost all life on earth” (*The Magic of Mushrooms*). To see that relationship solely as a fact without outside relevance would be ignoring the interconnectedness that mycelia embody. Similarities in the structure of these networks to neural networks or the internet are apparent. Paul Stamets’ believes mycelia is the neurological network of nature and says “Interlacing mosaics of mycelium infuse habitats with information-sharing membranes. These membranes are aware, react to change, and collectively have the long-term health of the host environment in mind. The mycelium stays in constant molecular communication with its environment...” (2). His hopes for mycelia connect different disciplines. He believes that the extent of these systems “exceeds the computational powers of our most complex

supercomputers” and thinks that one day we can exchange information with fungi through cross-species interfacing (7). This communication can be applied throughout disciplines using mycelium as material, but why stop it there? The relationships both fungi and humans have with the natural world are intricate and complex. We can apply the power displayed by fungi to more abstract social or political human structures.

Fungus is resistance. Processes demonstrated by fungi are critical to the well-being of individuals and communities alike. Peter McCoy says “As the natural world’s grand connectors, mycelial networks exemplify this universal principle of mutual aid. They act as a clear model for connecting communities and ideas to help reverse the problems of reductionism” (XVIII). Science, art, and building new worlds are not distinct from each other, to insist on their separation restricts the way we view and interact with the world. It restricts the sources of knowledge that can inform our choices. If we can take Anna Tsing’s advice on applying environmental histories to scientific studies, or perhaps include fashion in a political dialogue, we can broaden the way we engage with these topics, as I seek to do with my play space.

Reductionist thinking limits accessibility to information by dividing knowledge into separate categories where languages become isolated and inaccessible. This division of knowledge is a strategy of institutionalized research that helps restrict the field to only the people studying it through institutional facilities and burdens citizen scientists. A citizen scientist would have to sift through countless works written in jargon just to be able to understand the processes used in that research (22). When science is made inaccessible, the knowledge is controlled and will only benefit certain people. In Paulo Freire’s *Pedagogy of the Oppressed*, he speaks of dissonance in language that acts a divider of people. He says “Often, educators and politicians



speak and are not understood because their language is not attuned to the concrete situation of the people they address” (Freire, 96). When knowledge is not accessible, whether it is guarded, or it is simply unintelligible, it does not benefit those who need it. Access to knowledge is necessary for freedom. Freire uses a metaphor for current models of education which he calls “banking education,” the idea that students are empty receptacles that need to be full of stored information. His critique of this is “Banking education inhibits (although it cannot completely destroy) the intentionality of consciousness by isolating consciousness from the world, thereby denying people their ontological and historical vocation of becoming fully human” (83). The consequence of the prescriptive, out of context knowledge often used as the base for contemporary education models is that they don’t teach the interconnectedness of our world, which makes action limited. Isolated knowledge cannot fully realize its space in time and place and is isolating to the student. Freire states “One of the gravest obstacles to the achievement of liberation is that oppressive reality absorbs those within and thereby acts to submerge human beings’ consciousness” (51). If we are taught the world without its relationships, then we fail to see the constant interconnectedness that all ideas have to each other. How do we find our way out of this destructive cycle? Can we close the loop on education as we look to close design and product loops?

One thing we can do, rather than seeing information as isolated facts about our environment, is to see information as a gift. Using this idea, we can visualize an economy where information is not a commodity, but instead a present given to us. In a capitalist economy, where information is a commodity, it is devalued as it is passed on. This process is not how information works. As knowledge is passed along, the potential for its application becomes richer and its reach expands. Knowledge that is stored away for its own sake will not reach as many situations,

and it won't be able to solve diverse problems. Freire's solution to "banking education" is "problem-posing education," where information is based in application and is always changing. This approach doesn't limit it to just one application but gives it a life in relation to the world. He says "Problem-posing education bases itself on creativity and stimulates true reflection and action upon reality, thereby responding to the vocation of persons as beings who are authentic only when engaged in inquiry and creative transformation" (Freire, 83). In this specific instance, fashion can be part of a solution of personal empowerment, but it creates other problems that can be solved using fungi as material and inspiration. The teaching of fungi is a gift, but it is a gift that only reaches its true potential if its knowledge is shared and accessible. Robin Wall Kimmerer describes a "gift economy" in her experiences with wild strawberries. She says "That is the fundamental nature of gifts: they move, and their value increases with their passage. The fields made a gift of berries to us and we made a gift of them to our father. The more something is shared, the greater its value becomes" (27). If we connect concepts as moving gifts, and utilize them as solutions to problems, then the passage of information (and thus autonomy, empowerment, and revolutionary actions) opens and becomes ready to use.

### **Breaking Educational Models**

When we process information in a problem-posing and accessible way, it breaks down current educational structures and makes room for new approaches to learning. We can visualize a deconstructed, non-hierarchical educational space where we teach to subjects, rather than objects. The play space I created for the activation of this research is an example of a solution to traditional, hierarchical ways of teaching. Kimmerer prefaces this idea with a quote from geologist Thomas Berry, "we must say of the universe that it is a communion of subjects, not a

collection of objects” (56). Seeing students as objects of the educational process isolates them from knowledge and discourages community. The information ends at the end of the thought and is not a living series of overarching ideas in a world that still includes them. On problem-posing education, Freire says “it enables teachers and student to become Subjects of the educational process by overcoming authoritarianism and an alienating intellectualism; it also enables people to overcome their false perception of reality” (86). For example, to teach students about ecological restoration as a concrete practice is much different than taking students to an area with specific ecological needs and ask them to help solve the problems it faces. Only then can students see work in action, and fully understand the complexities that go into remediation. Fashion and mycology concern what could be considered radically different disciplines but have a common ground in community empowerment. They inform each other. These fields are as complex and interconnected, and their applications are relevant. This interdisciplinary approach will encourage sustainability and empowerment. The outcome seeks to bring a world where sustainability is in the hands of individuals, rather than relying on industries to reduce waste and use fair labor practices.

The ideas of fungus and fashion meet in the hope of utilizing simple actions in our own communities to subvert reliance on capitalist industries. As a society still living within the colonial power structure built by centuries of oppressive imperialism, we need to fight back. So much of our livelihoods are regulated by this structure. If we can gather resources to be self-sustainable and gain autonomy in small ways, our attachment to this structure slowly starts to fray and new opportunities can present themselves, provided we give them time and care. Growing mushrooms and creating experimental materials will not immediately overturn the fast fashion industry, but it lays a groundwork for operation outside that system which can transform

into a larger practice. Mycelium is a great platform to begin this process, as McCoy says, because “Fungi are the antithesis of civilization, born of wild mycelium that is free of social constraints and defiant of imposed hierarchies” (78). Beneficial relationships between fungi and their environment are an inspiration, and even a goal for humans. They present a model to make social change less abstract. Fashion, as a discipline that effects all communities in positive and negative ways, is one of many ways to apply the knowledge of fungi. For us to benefit from fashion, mycelial insight on communication and remediation can be applied to reverse harmful social and environmental effects of the clothing industry. Fungi can be used as material and as a model for taking care of others, human and non-human. There are infinite ways to enact change, but a good place to start is with problem-posing applications of concrete intersectional ideas. Rather than letting our ideas float around as concepts, we can root them to real issues.

### **Solving within Communities**

The first method of getting these ideas out to a community is to talk about it, let the weight of radical ideas do the starting work. In the film, *The Creeping Garden*, scientists running a human slime mold experiment use this method of one on one conversations and experiential learning. They understand that the organism is interesting, all they need to do is expose people to the project and talk to people. “You start to have conversations with the public, through putting something on a screen or in a gallery or running a workshop or giving a talk or whatever it is, and people start to kind of uncover and ask questions and engage with it” (*The Creeping Garden*). Revolutionary practices do not have to start large, and the implication that they do alienates people and discourages participation. Simplicity resonates across fields in search for a better world. John Bonner uses this attitude in his work with slime mold, saying “the

goal in all of science is to find simple answers to big questions. This search for simple fundamental truths is what leads us forward and gives us a sense that we are gaining a deeper understanding of the world around us” (122). If we can see knowledge as a gift, can we begin to approach the world as a gift, a habitat in which we are provided for so long as we provide for others? Robin Wall Kimmerer asks this question, saying “I know we cannot all become hunter-gatherers—the living world could not bear our weight—but even in a market economy, can we behave “as if” the living world were a gift” (31)? Moving into the future, we can use this dialogue and learn how to create alternate social, political, and environmental structures that can regain human equilibrium while not reverting to the past. To do so, we must envision that future, and acknowledge it will not look like anything we have seen before.

Currently, we see countless negative effects of the Anthropocene. Climate change catalyzes natural disasters, biodiversity is vanishing, and people are getting sick from many different pollutants. This reality is disheartening but we can remember the teachings of the matsutake-pine relationship to reinvent distressed earth. We can learn from ecology, recognizing that disruption and destruction do not have to be synonymous. Anna Tsing reminds us “Disturbance realigns possibilities for transformative encounter. Landscape patches emerge from disturbance. Thus, precarity is enacted in more-than-human sociality” (152). Human life has changed the environment because we are an integral part of it and will continue to be. Our disturbance to the earth is perhaps worse than a wildfire disturbing a forest, but nature teaches us that it can do amazing things that we can hardly comprehend. We can return to Stamets’ assertion of a mycelial network being more advanced than our best supercomputers, and we can begin to imagine harnessing that power. In one of her classes, Robin Wall Kimmerer asked her students to name a harmful relationship that humans have with the earth as well as a beneficial

one. While they could all name negative relationships, barely anybody could name a positive one. She says:

I was stunned. How is it possible that in twenty years of education they could not think of any beneficial relationships between humans and the environment? Perhaps the negative examples they see every day—brownfields, factory farms, suburban sprawl—truncated their ability to see some good between humans and the earth. As the land becomes impoverished, so too does the scope of their vision. When we talked about this after class, I realized that they could not even imagine what beneficial relations between their species and others might look like. How can we begin to move toward ecological and cultural sustainability if we cannot even imagine what the path feels like? (6)

To recognize impact means nothing if we cannot also recognize our ability to remediate it or reinvent frameworks for change in society. I have chosen fungi and fashion as my interdisciplinary approach to inserting attainable methods of subversion into my daily life. I will not have to participate in the fast fashion industry as a consumer, but I will be able to display the power of my own autonomy with how I dress. I invite others to join me.

Learning from the reclamation of fashion by marginalized communities, we can break down the social and environmental power structure that the fashion industry imposes. If we feel separate from the natural world, instead of part of it, we alienate ourselves from learning and collaboration. It is possible for individuals to work within their own communities to facilitate change and fight oppression, and it can start with simple, practical ideas and actions. We know we can grow our food, which is important, but I want to use a non-hierarchical pedagogy to teach people how to grow their own garments. Fashion is a human knowledge that can benefit from a fungal knowledge. Functioning within respect for humans and reciprocity with the earth, we

reclaim knowledge as citizens of the earth. Cultivating mushrooms can cultivate our future, if we take the time and care to see it through.

## Section 2: Project Introduction

Following the needs for community-based, non-hierarchical learning via fungi and fashion that unfolded from my research, I created an experimental space where people could come and play. I wanted the play space to be open to the public and offer an interactive experience of the web of ideas I have been working with for the past two years, a combination of science, art, and world-building. The play space was titled “Decay: An experiment in social mycoremediation,” and happened during the month of October at Corpus Arts, a radical queer literacy center located in downtown Albuquerque. It used decay, a process carried out by fungi, as a lens for unravelling oppressive structures woven by capitalism and colonialism. Decay is a necessary ecological function that frees the nutrients from old material and makes room for new growth. I applied the teachings from decay to oppressive societal structures to make room for new ideas and systems of existing in the world. Corpus Arts is already a reading room with an extensive library, so the play space functioned to extend that setting to include and feature these ideas. I provided the books I had read in preparation for the project for visitors to sit and read, as well as nightstands, tables, and seating arrangements to evoke a comfortable setting that could be used for new, radical study. Experiments, textiles, garments, altars, and photos relating to concepts of decay were shown, which users were encouraged to touch and interact with. The pieces interconnect visual cues in a web, not unlike a mycelial network. The space aesthetically references countercultural movements and utilizes their techniques of sentimentality and play. Three different mushroom growing habitats were set up throughout the space, so the participants had an opportunity to share space with the creatures they are being asked to consider. I held two workshops on how to begin growing mushrooms at a low cost using only readily available



materials, like store bought mushrooms, coffee grounds, a jar, and coffee filters. Finally, I wrote a zine that connects the ideas presented in the play space. It provides information on fungi, fashion, decay, community involvement, instructions on growing mushrooms, instructions on making material, affirmations, and further resources. It also acts as the guide for the space, providing explanations of each work in the space and taking the participants on a “mushroom hunt” of the works. I distributed 150 copies of this zine throughout October. In November, I presented the work at a poster session at the National Collegiate Honors Conference in New Orleans, where I distributed 40 more copies of the zine.



A view of the play space upon entering Corpus

The idea of a play space grew from the idea of using play to radically restructure a learning experience. Back to educator and philosopher Paolo Freire’s ideas of banking education vs. problem-posing education, we need to make educational experiences that are non-hierarchical and can change with the needs of each individual. Play is inherently an anti-capitalist action,

because it includes everyone and does not require a product. To have an interactive space where experimentation is valued opens the possibility for solutions that are innovative and community driven. A play space is an extension of problem-posing education that changes the script of a traditional art show, one where the visitor is now the subject of the space, not the object. A traditional art show is a prescribed experience in a historically exclusive setting. The stereotypical “white box” of a traditional gallery seeks to remove external context from a work, but that context is integral to work and can’t be separated. Trying to remove a work from its context places it in “museum” model that has been historically used as a colonial method (Cartiere, 67). It doesn’t remove context but places it in the context of a gallery and those histories. The play space was instead put in the inclusive context of a queer resource center, a place of learning and subversion. It used countercultural aesthetics and methods, such as the zine, which is a decentralized way of distributing information. Mushrooms were grown there as both an acknowledgment to them, and a representation of interconnection and decay in action. The workshops in DIY fungal cultivation were an opportunity for a hands-on instructional learning approach and community gathering. I allowed people to drop in when they wanted and provided materials and handouts for people to take home. Together, these aspects created space for connections between people, between information, and existing radically and subversively.

While the play space was the final iteration of this research, it was not always the vision for the project. In the beginning, I was interested in creating sustainable textiles using fungi, and sharing the processes of how to do that. For some of my early research, I contacted different artists and companies who used fungi in material design. Most of my emails were not answered, and the ones that were generally told me that creating fungal textiles was an expensive and industrial process and would not work in a DIY setting. When I contacted MIT Media Lab to see

if I could be given a tour of any labs that focused on textile design, I was told that I could not have access unless I was a current MIT student. At the time, I felt panicked and put into a corner with my research. Was my project feasible? How do I get resources to complete it? Will I have anything to show in the end? I turned to my community for help, and I asked other practicing artists and organizers what they thought of my situation. One artist I talked to was Carol Padberg, an artist who is also interested in fungal textiles at the University of Hartford, who I was put in contact with by Jeanette Hart-Mann, director of the Land Arts of the American West program. Carol gave me some advice that ultimately changed the path of this project, telling me that if I was truly interested and passionate about this work, the degree and thesis is just one milestone in decades of potential work. This advice made me rethink how projects function in time, and how to honor time-oriented processes. A thesis project isn't a deadline of the perfect product, it's a display of what you can do in the time allowed based on constructed institutional frameworks of progress. A real work has a life of its own, and the limits are just challenges to meet with acknowledgement of the fluidity of a practice.

At this point, the question became about how to evolve the project to meet the needs of experimentation and process-based community teaching, not how to throw together a perfect, all-encompassing textile solution. The answer to this came from breaking open the idea of a product. A product is efficient, reproducible, and scalable—not fluid. It does not care about the different approaches and failures that went into its creation. These failures are important, and if I don't have space to fail, I don't have space to work. In some ways the process seemed more important to talk about than the product. They were more transparent, and more radical—they left room for the truly letting people in and accessing my work. If I created the perfect product in the end, without any frayed edges, my work wouldn't be complete, and I would still be upholding the

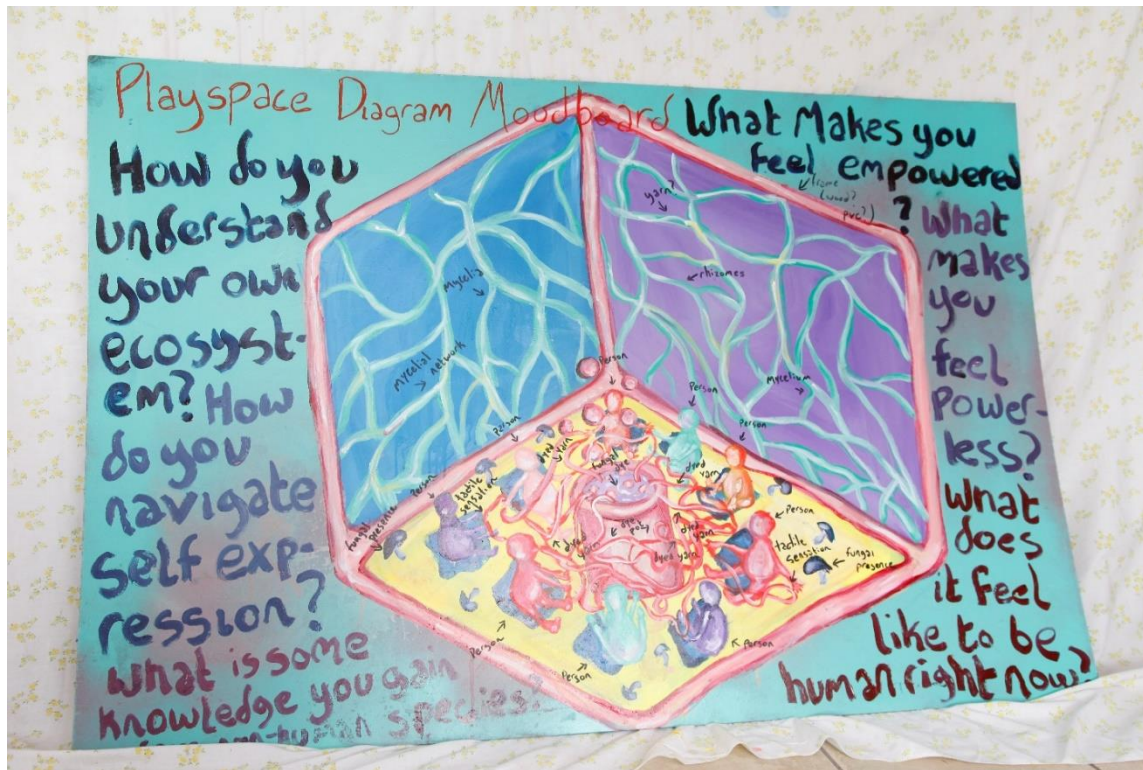
capitalistic thinking that I intended to challenge. The fray is where people can connect and jump off, it is where there is room for individualized problems and responses. By sealing that, you close people out. By adjusting my project to be centered around a place to play, not a product, my goals in challenging current manufacturing methods and models of teaching and community involvement could be actualized. Instead of showing people absolute answers, I am showing people my answers and conclusions and inviting them to come in, take solace in radical study, and make their own.

After I decided on the play space, I needed a location. This prospect was intimidating and convincing a public space to host a radical event is fraught with complications. Initially, I reached out to some galleries with mixed responses, but nothing that was a perfect fit. This period was another time where reformulation and problem solving was needed, and again I looked to my community for help. Someone suggested Corpus Arts, a DIY space that I have been going to since it opened. It came as a very clear and direct solution. Instead of asking for space in the institutional academic world I am critical of, why not hold space in my community and invite people from academia into a DIY setting? Further, having my work in a queer literacy center that already functioned as a community gathering spot provided the context for my project that I didn't want to be lost. I submitted a portfolio and proposal for what I would use the space for, and they were happy to accommodate my needs for the project, which included open access to the space for the month and permission to host events and grow fungi. I agreed to promote my events and to make a space that was able to be stowed away for music events, which happened about once a week, and to make sure that none of my materials were biohazards and the space was kept safe. My association with Corpus Arts became a very mutually beneficial relationship, and the ideal setting to hold a radical, experimental art show.

Quite a bit of time between the theoretical beginnings of the project and the actual showcase was spent experimenting with materials, which took many different forms. In the early stages, I spent time foraging and identifying mushrooms in the wild with Land Arts of the American West. I brought *Radical Mycology* by Peter McCoy and *Mushrooms and Truffles of the Southwest* by Jack S. States along with me for field investigations. I found a recipe on how to make paper out of turkey tail mushrooms in the original *Radical Mycology* zine, and made it with success, and would go on to include an edited version in my zine for the play space. This paper was significant because it was one of my first successful attempts to make an actual material out of fungus that could be used in a separate application. However, I could not replicate my results using shiitake mushrooms, a much more common variety, and ended up making some experimental textiles with mushroom prints on muslin. A major experiment in this time was learning how to grow mushrooms, which was an extended process of trial and error. I decided on pink oyster mushrooms (*Pleurotus Djamor*) because they are not as picky as other species, can withstand hot New Mexico temperatures, and have a beautiful rose pink to deep salmon color. Between March and July of 2019, I went from obtaining my first bag of mycelium to fruiting laundry baskets of mushrooms in an outdoor humidity tent on straw and cardboard. Other experiments included feeding a thrifted linen dress to mushrooms and embroidering words onto dried mushrooms, both which became centerpieces for the show. The decayed dress exemplified the power of mushrooms as decomposers, but was also a symbol of decaying fast fashion industries, an metaphorical example of what we can do. As I was conducting material investigations, it was hard to conceive of them being tangible objects that I could show, but over time, the idea of showing experiments and failures to created an efficient product became integral to the success of the play space. My home and studio became my own experimental play

space in this process, and I wanted to let the people viewing my project in on that mode of creativity. Allowing myself and others to work in a way where the outcome isn't expected or even fully conclusive introduces ways to subvert capitalism and grow together.

Even after I decided on the idea of the play space, I wasn't sure what it was going to look like until July of 2019. Earlier drawing in the proposals I submitted to Corpus Arts included grand ideas like fake walls covered in mycelia and a mushroom dying workshop where everyone ethereally shared yarn and a large dying vat. Obviously, due to restrictions, many of these ideas were fleeting but still informative to the process of brainstorming. During the month of July, I put together the final, feasible plans for the space. My first priority was to grow mushrooms in the space, as it was the window into much of my work and a beautiful biological process that is often hiding in dark corners in the forest, under downed logs, and not readily publicly accessible. To do this, I had to design self-contained mushroom growing setups (much different from the thrown together, spider infested setup in my yard). One of my first thoughts was to include the books I had been reading in the space, but zine idea came from wondering how to concisely and eloquently convey written information, which I originally thought to do with printed out articles. When someone suggested I write a zine it became so obvious! Zines are a medium that lend themselves to DIY information distribution, and a practice I have been cultivating since I was a teenager. I decided that the workshops should be teaching people how to make the mycelium jars that I had been making out of store-bought mushrooms, because it is easily the most accessible way to start a fungal growing setup. I drew the inspiration for a reading room from curbside furniture, with the thought that anywhere can be a comfortable with the suggestion of interior decorating. Together, these elements made a cozy and resourceful space where people could feel safe to learn, think, rest, play, and make.



Early project proposal, acrylic on masonite, 2018

The opening of the show was set on October 4<sup>th</sup>, 2019. Funding of \$800 for buying materials for mushroom growing setups, mushroom grain spawn, books, fabric, picture framing materials, paint, postcards, and furniture was provided by the UNM Honors College, as well as additional funding to print the zines. To promote the show, I made postcards that I sent out and put in public places and posters that I set up at Corpus, some of the neighboring shops, and designated places at UNM. October 4<sup>th</sup> fell on the first Friday of the month, the designated day for the ABQ ARTScrawl, the day when many galleries around town have art openings and people come out to see art. Due to the fact that Corpus is located downtown, it was a prime location to get foot traffic for the show. The space was packed for the set opening time from 5pm to 8pm, and even after I reopened it for passersby. I ended up handing out over 100 zines, and about 30 people participated in the first workshop over the course of 6pm to 7pm. Afterward, I moved some of the furniture out of the way and hired a DJ, so people could dance with fungal

presences after hours. The second workshop was Saturday, October 19<sup>th</sup>, and while the attendance was much smaller, it provided a more intimate setting with participants, myself, and the artworks. I also hosted more casual open hours throughout and a closing event, with an art table with fungi inspired coloring pages. During the month I also created a poster titled “Creation of an Experimental Play Space” to show at the National Collegiate Honors Council in New Orleans. This poster detailed the aspects that went into creating the space, and how they materially and theoretically fit together.



### **Section 3: Exhibition**

*Decay: An Exploration in Social Mycoremediation* ran from October 4<sup>th</sup> to October 25<sup>th</sup>, 2019. Postcards and posters were distributed beforehand to promote the space, but it also got a lot of foot traffic from being in a popular area of town that promotes art spaces. The space featured information and ideas on fungi and sustainable fashion practices. The interconnected and remedial properties of mycelial networks was the lens used to discuss the ecological principle of decay in human ecosystems. Fashion was used as an example of both an oppressive system and an empowering practice. The creative work aesthetically references countercultural movements and utilizes their techniques such as sentimentality and play. The pieces in the exhibit, such as foraged objects, altars, garments rendered in different ways using mushrooms, and living mushrooms connect visual cues in a web, not unlike a mycelial network— the vegetative body of fungi that aids in connecting a forest together. Corpus Arts is a venue that houses an extensive library of radical literature. The show was contextualized in a space of radical study and radical organizing. Works made from 2018-2019 exploring processes of decay, fungi, and fashion were curated alongside books about the topics discussed, and visitors were encouraged to read and take notes. To tie the narrative together, three different species of mushrooms were grown, as interspecies companions for visitors to share space with, and as guides representing the subjects discussed in the show.

#### **Promotional Material**

Promotional materials such as postcards and posters were designed to promote the show. The design was made to reflect the experimental and countercultural aspects of the show, while maintaining playfulness. Pink is the color of the first mushrooms I learned to grow and was a key color used to unify the show—pink is playful and inviting, but it's also subversive, often used to

expressed frivolity in femininity. The font is referential of 70s counterculture which often used mushroom imagery, but appears to be distorting and melting, a campy approach to decay. I provided just enough information on the material but not so much it was immediately self-explainable, so people would want to go to find out more. They were distributed throughout different locations at UNM and different businesses throughout Albuquerque. The last image is the window hanging using the same imagery that was viewable from outside the window at Corpus, inviting people in.



Postcards, front and back, photographed with *Pleurotus Djamor* (pink oyster mushrooms)



**// AN EXPLORATION IN  
SOCIAL MYCOREMEDIATION //**

Curated by Rowan Willow

**CORPUS ARTS**

123 7th St. NW,  
Albuquerque, NM, 87102

**OPENING:**

October 4th 5-8 pm  
*workshop* from 6-7 pm

**OPEN HOURS:**

October 5th & 6th, 11 am to 5 pm  
October 19th, 5-8 pm,  
*workshop* from 6-7 pm

**CLOSING:**

October 25th, 5-8 pm

**OPEN BY APPOINTMENT  
PLEASE CONTACT  
robertsr@unm.edu**

Poster  
advertising the  
exhibition



Poster that hung in the window of Corpus, visible from the street

**Artist's Statement:**

The artist's statement was hung in the space, providing context for the space and work.

The statement reads as follows:

## Decay

Rowan Willow

*Decay* is a playspace. It is a living, mycelial web where the work should be touched, felt and included, not treated as a room full of objects merely on display. It is intended as a resource center, a place of community, and an ecosystem crafted for study. *Decay* explores learning from fungi, and the concept of mycoremediation (that is, healing environmental pollution using fungi) and extends this metaphor to healing our own human environments using fungal knowledge. Fungal knowledge includes using decay to make room for new growth, sharing nutrients, fostering community and adaptability in the face of struggle. Various mushroom-growing setups are located throughout the space, inoculated with different species of *Pleurotus* (commonly known as oyster mushrooms), so we can share space with these organisms and one another. Players and play-space are connected through these living beings, as fungi connects forests through their mycelium.

Fungi have beautiful and complex ecological histories. As some of the oldest and largest living organisms on our planet, they can both destroy forests and bring them back from disruption. Fungi grow rhizomatically through their vegetative bodies, called mycelium, which connects different species of plants together underground to share nutrients. They also have inspired human histories of foraging and medicinal practices. In this, fungi have been used as powerful initiators of personal, psychological change which has created simultaneous relationships of love and fear.

We embody all these complexities and look to decay as an ecological truth that we hold dear to our hearts. This exhibition employs fungi as a lens to study and unravel oppressive structures woven by capitalism and colonialism. One of the structures that is explored is fashion—a practice that shares histories with subcultures and radical movements just as it does with aristocracy, class struggles, and harmful labor and environmental practices. The show draws aesthetic connections between 60s and 70s mushroom counterculture, foraged objects, treasures, altars, sentimentality, and play. The work in this room has been gathered from various places, including the forest, thrift stores, friends, and authors. As we consider decay, we accept its nourishment and allow ourselves to rest in its assuredness. We look to decay as a philosophical necessity as much as an ecological one, and we seek to dispel the toxic and fearful relationships to death and decay in our growth fixated consumer culture. There is not one way to experience *Decay*, and there is no single takeaway. Rather, the space exists in fluidity; revealing its individual meanings personally and contextually.

The zine you'll find in this space is a companion to the show. The middle section includes a list that corresponds to the numbers in the space, so you can find more information about each work. Feel free to take a zine home, as they are meant to exist both inside and outside the space.

## Documentation of Play space



Exterior view of  
Corpus Arts  
during the show



View of the space  
from the couch,  
showing  
mushroom  
habitats for  
*Pleurotus*  
*Djamor* and  
*Pleurotus*  
*Citrinopileatus*



**“Embroidered Dress,” Nightgown,  
rabbit fur, Pleurotus *Djamor*,  
embroidery thread, 2019.**

This dress shows homegrown pink oyster mushrooms each embroidered with the phrase “i love u” and attached to an old nightgown with discarded rabbit fur. The dress focuses on decay as a careful and loving process, a rest between cycles of life that returns nutrients back to the earth.



**“Decayed Dress,” linen dress,  
*Pleurotus Djamor*, 2019.**

This dress is the product of an environment I created where mushrooms can grow and feed on natural fabrics. The mushrooms which ate the dress are still attached and dried into the fabric.





**“Decay is a Lover Making A Pot of Warm Soup when you are Sick,” found fabric, warm fabric, photo fabric transfers, 2018**

This is quilt I made during Land Arts of the American West made from sentimental fabric, including my mothers baby blanket, a handkerchief from my great grandmother, and a wedding dress from a friend who called off her wedding. Images relating to decay taken during the program were transferred onto the fabric. Visitors could curl up in the quilt and be comforted by decay.



Paper made from turkey tail mushrooms and the mold and deckle used to make the paper inside a basket with fresh flowers from my garden. Visitors could touch and examine the paper.



Mycelia growing in a laundry basket inside the mushroom habitat growing *Pleurotus Ostreatus*.



A photo of me in the space, just before the opening of the show.

#### Section 4 : Zine

Accompanying the play space is a zine titled *Decay* which extends the idea of decay as a metaphor. It offers hands on information about how to grow mushrooms and make things from them. The zine provides a list of resources which connects mushrooms to fashion, social justice, and environmental remediation. The motivations for making the zine was to tie the theoretical foundations of the show to the space and provide information in an engaging format that visitors could take home. It was made by using collaging master sheets with images and text together, and then making xerox copies of the masters, cutting the pages in half horizontally, and folding the zine together, held by two staples in the binding. The zine was made in the same style as DIY zines in the 80s and 90s, before digital editing software was widely available. This is a simple and cost-effective way to make zines, that is available to people without access to or expertise in digital editing software.

One of the main challenges of this style of zine making is making sure the pages will be in order once the zine is cut up and assembled, so it's a good idea to make a test copy using blank pages. To do this, you can make a booklet the same size with the same number of pages as you want your zine to be. Once you cut up and assemble the blank pages, you can mark page numbers and reassemble into its component pages, so you know what page is where in your masters. After that, you can start assigning content to page numbers and building up your masters. I used found image collage to build up background detail, and wrote up and printed text for each page, which I cut and paste onto the pages. I used my collection of collage materials, which included magazines, textbooks, and other educational books mostly found at thrift stores for the images, which I selected based on detail and relatability to the topic. Some pages show actual mushrooms, while others show string or cell-like textures. For these types of zines,

mistakes like stray borders and texture of the pages can show up in the final printing that wouldn't happen with digital editing, but the overall feel of the zines is more personal. My printing budget was initially \$150 but with mistakes and a reprint due to demand I ended up spending \$222, averaging out to \$1.17 per zine, each with 32 black and white pages and front and back covers in color.

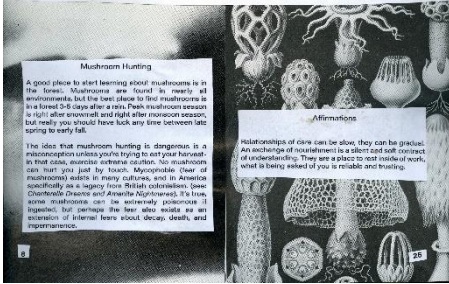
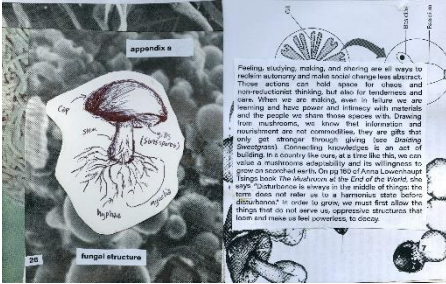
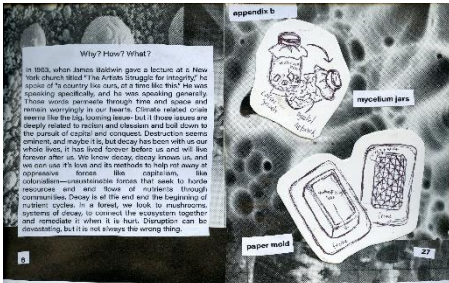
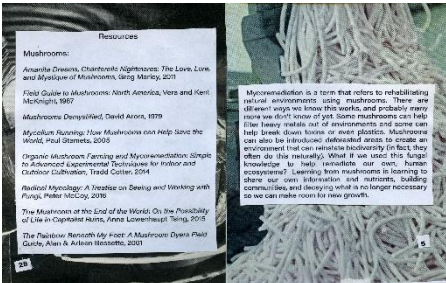
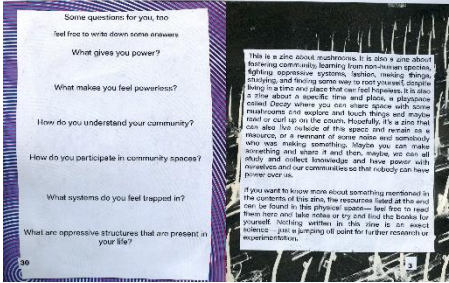
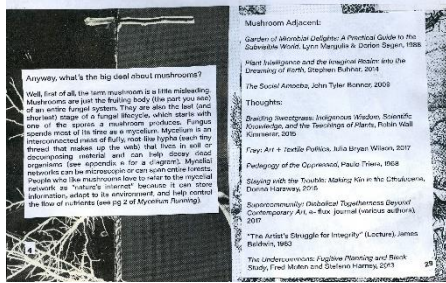
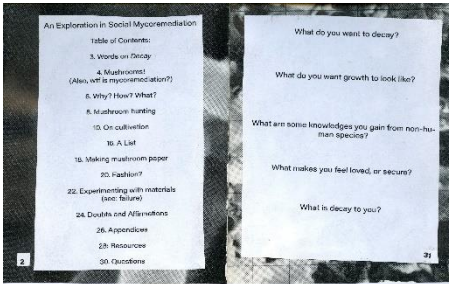
These are images of the cover and centerfold of the zine after it has been printed and assembled. The cover was made digitally, while the centerfold was made using collage and a xerox machine. The centerfold is a list of objects in the space, where each number corresponds to a number labelled in the space for viewers to find. Using this approach, the zine and the space work together, and one is necessary for the other.



The assembled zine as a hard copy

# Master copies:

These are the full master copies, paginated so they go in order when the zine was cut and assembled. The white line in the middle simulates the border that is created when a page is copied, so that each page has a border on all 3 of the sides that are not folded into the binding, for consistency.





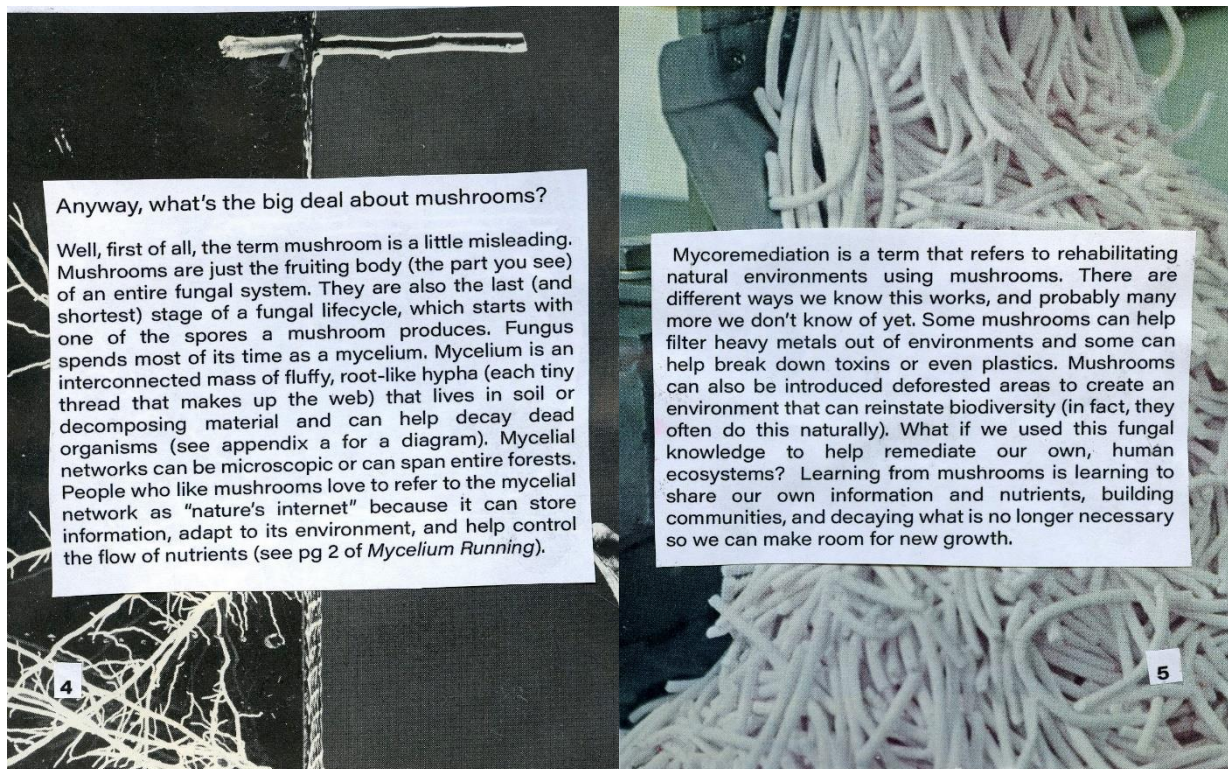
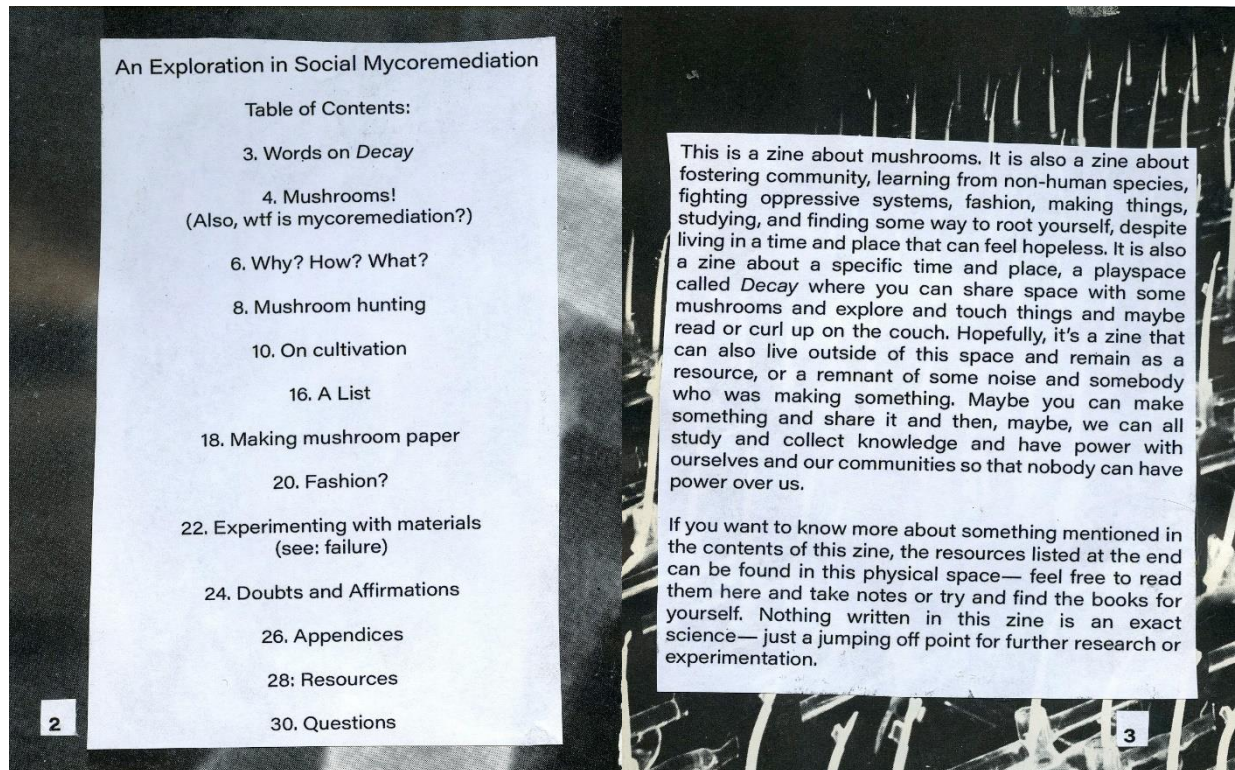
### Detailed Zine Content:

These next images are each page of the zine, in order, spread as they are in the zine itself.

Note that while these are in color, the color does not make it into the final experiment printing. The first image is the front and back cover. The cover used the same image as the promotional materials and window hanging, to provide a repeated visual pattern to connect different elements together and help promote the show by visual association.







**Why? How? What?**

In 1963, when James Baldwin gave a lecture at a New York church titled "The Artists Struggle for Integrity," he spoke of "a country like ours, at a time like this." He was speaking specifically, and he was speaking generally. Those words permeate through time and space and remain worryingly in our hearts. Climate related crisis seems like the big, looming issue- but it those issues are deeply related to racism and classism and boil down to the pursuit of capital and conquest. Destruction seems eminent, and maybe it is, but decay has been with us our whole lives, it has lived forever before us and will live forever after us. We know decay, decay knows us, and we can use it's love and its methods to help rot away at oppressive forces like capitalism, like colonialism—unsustainable forces that seek to horde resources and end flows of nutrients through communities. Decay is at the end and the beginning of nutrient cycles. In a forest, we look to mushrooms, systems of decay, to connect the ecosystem together and remediate it when it is hurt. Disruption can be devastating, but it is not always the wrong thing.

6

Feeling, studying, making, and sharing are all ways to reclaim autonomy and make social change less abstract. Those actions can hold space for chaos and non-reductionist thinking, but also for tenderness and care. When we are making, even in failure we are learning and have power and intimacy with materials and the people we share those spaces with. Drawing from mushrooms, we know that information and nourishment are not commodities, they are gifts that only get stronger through giving (see *Braiding Sweetgrass*). Connecting knowledges is an act of building. In a country like ours, at a time like this, we can value a mushrooms adaptability and its willingness to grow on scorched earth. On pg 160 of Anna Lowenhaupt Tsings book *The Mushroom at the End of the World*, she says "Disturbance is always in the middle of things: the term does not refer us to a harmonious state before disturbance." In order to grow, we must first allow the things that do not serve us, oppressive structures that loom and make us feel powerless, to decay.

7

**Mushroom Hunting**

A good place to start learning about mushrooms is in the forest. Mushrooms are found in nearly all environments, but the best place to find mushrooms is in a forest 3-5 days after a rain. Peak mushroom season is right after snowmelt and right after monsoon season, but really you should have luck any time between late spring to early fall.

The idea that mushroom hunting is dangerous is a misconception unless you're trying to eat your harvest- in that case, exercise extreme caution. No mushroom can hurt you just by touch. Mycophobia (fear of mushrooms) exists in many cultures, and in America specifically as a legacy from British colonialism. (see: *Chanterelle Dreams and Amanita Nightmares*). It's true, some mushrooms can be extremely poisonous if ingested, but perhaps the fear also exists as an extension of internal fears about decay, death, and impermanence.

8

**How many mushrooms can you find?**

6

Write down descriptions of any mushrooms you find, take pictures and spore prints (see pg 281 of *Radical Mycology*) and try to identify them— use a field guide or find mushroom identification forums online. It's okay to pick a few, but not the first ones you find (they might be the only) and never too much of a population. The history of foraging mushrooms for a commercial market is interesting and complex (see: *The Mushroom at the End of the World*), but, with concerns of overharvesting and taking over markets of people who make their livelihood this way, it's probably not a space you should insert yourself into.

9

### On Cultivation

#### Sterility

The biggest hurdle in growing mushrooms is creating a sterile environment. A mushroom growing setup is also a perfect setup for growing the mold spores that exist in the air around us. Because you probably don't have access to laboratory grade sterile hoods, there are a lot of ways to bootleg a sterile environment. Some of the cheapest methods involve using a plastic bag, a Bunsen burner, or even your oven. More involved methods are making a DIY laminar flow hood or glovebox (see pg 210 of *Radical Mycology*).

You might be thinking "but, a forest isn't a sterile environment and mushrooms grow fine there!" Mushrooms are incredibly adaptable and have ways of competing with mold. Growing mushrooms isn't an exact science, and growing without competitors will probably get you the highest yield of mushrooms, but do what you want and you might find out something about growing mushrooms that nobody else knows. If you're growing mushrooms experimentally, you might as well experiment. That being said, maybe try and start with a heartier variety, like oyster mushrooms.

### Mycelium Jars:

There are a ton of ways to start a mushroom culture, ranging in difficulties and expenses. You can go the long way and grow from a single spore, or you could just skip that step and order some mycelium. Here's one of the cheapest and most accessible ways:

What you need:

- Store bought oyster mushrooms— it helps to know the specific kind, for later when you're trying to fruit them.
- Mason jar (If your mason jar isn't pre-sterilized, look up how to sterilize jars for canning foods.)
- Coffee Grounds
- Rubbing Alcohol
- Coffee filters

First, you'll need to sterilize about half a cup of coffee grounds. The most reliable way to do this is to put them in a pressure cooker with plenty of water, so they don't burn. If you don't have access to a pressure cooker, you can try cooking them covered with a breathable material in a cleaned microwave for one minute, with a cup of water in the microwave at the same time so they don't burn.

Do some research into creating a sterile environment. If you're not too concerned about having to try multiple times, a clean table and a plastic box turned on it's side will do. Wipe down the inside of the plastic box and the surface you are working on with 70-90% rubbing alcohol, as well as a knife and a cutting board.

Cut off the ends of the oyster mushrooms— if there are smaller, primordial mushrooms clustered around the ends, that's even better. Place the sterilized coffee grounds in the bottom of the jar, cooled and strained as well as possible but still moist, and throw a handful of oyster mushroom ends on top. Layer 2 coffee filters on top of each other and spray down with some more rubbing alcohol. Place the coffee filters over the lid of the jar, and put the metal screw band of the mason jar over the coffee filter. Work quickly! The faster you work the less chance a mold spore will contaminate the jar. You won't need the flat lid of the mason jar for this project.

Let the mason jar sit in a dark space for about a week, checking in on it every few days. It should start to grow white and fuzzy. That's mycelium! If the mycelium has taken over the coffee grounds after a week, put another layer on top, and when that get's colonized by the mycelium, repeat this process until the jar is full.

Note: the most common mold for mycelium to get in a normal household is *Trichoderma Harzianum*, which is green in color. If you notice this growing in your jar, you have a few options. You could A) throw it out and start again, this time with multiple jars. If you have more than one growing, you're more likely to get one without mold. B) attempt to take the moldy part out if it is still small. This could work, or it could further spread mold spore. C) Just leave it alone. Oyster mushrooms are an especially hearty species, and they can often outcompete mold if given time.

### Growing Mushrooms

Once you have obtained some mycelium, you probably will want some mushrooms. There are a lot of factors to consider, depending on what kind of mushrooms you're growing. You'll have to have some control over contaminants, temperature and humidity, and you'll have to know what kind of substrate your mushrooms need. If you're growing a somewhat mold-resistant strain, like oyster mushrooms, you don't need a perfectly sterile environment or substrate (pasteurized is fine). There are a lot of resources on how to grow mushrooms, all that say different things and work for different people. Your journey to growing mushrooms can be as unique and experimental as possible, or you can try and find a strict guide and go by the books. A good to start is *Organic Mushroom Farming and Mycoremediation*.



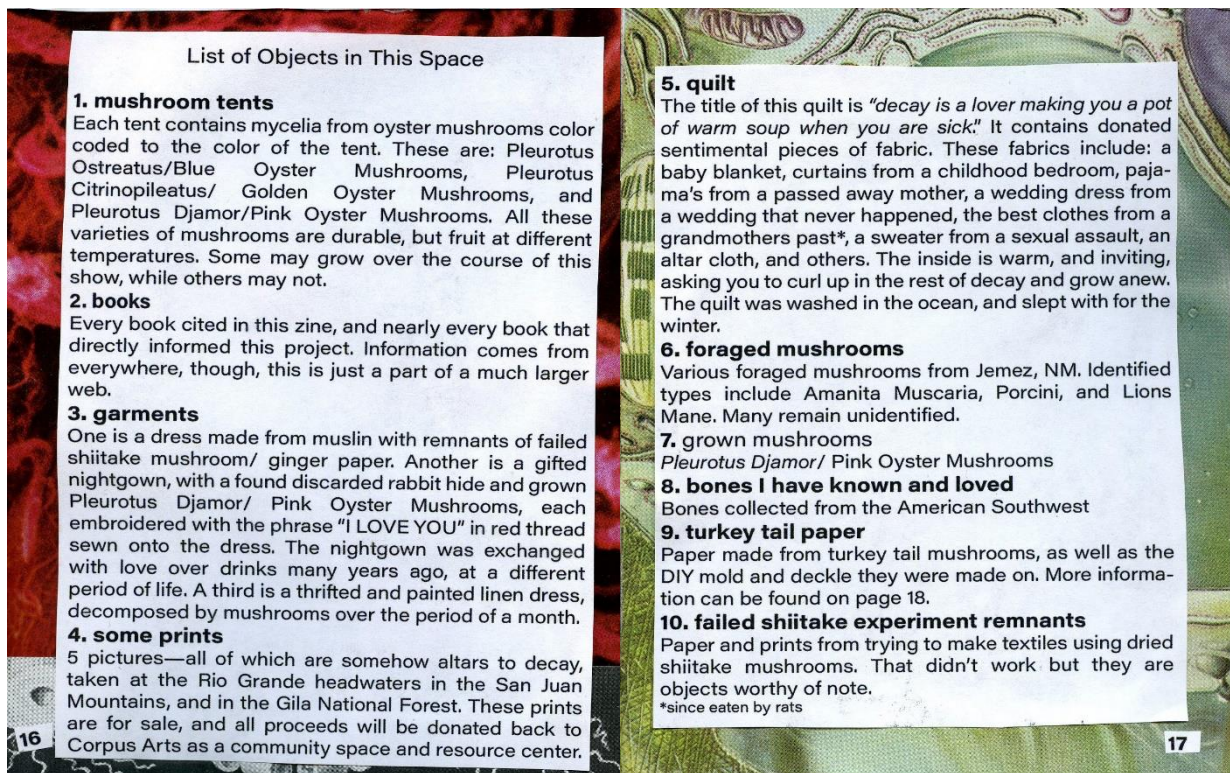
### Humidity

Another important factor to consider when growing mushrooms is humidity. Most mushrooms need about 70%-90% humidity to fruit (see: *Organic Mushroom Farming and Mycoremediation*) and need to be shocked into producing fruit, usually by being given more light, lower temperatures, and higher humidity than they were given when the mycelia was overtaking the substrate. Along with sterility, this can be one of the most difficult factors in mushroom cultivation to control. Like sterility, there are various methods to go about this, and none are particularly right or wrong. The most reliable, and one of the more expensive options, is to buy a timed humidifier for your grow tent so you can leave it on and refill it every few days. Really, though, humidity can be simply achieved by keeping a moist environment in a closed chamber and maintaining a temperature that can keep some of the water as vapor in the chamber. In my setup, I keep a tent made from pvc pipes with a sewn vinyl covering outside, and water the ground inside the tent every day. By tucking the vinyl under the pvc pipes, and closing my access "door" with clothespins, the moisture is maintained even in the dry desert.

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This is a photo of my humidity tent at home. It's not sterile at all, and is maybe a habitat for a few black widows, but it works for me. *Pleurotus Djamor/ Pink Oyster Mushrooms* are able to compete with other molds and withstand the intense New Mexico summer heat, but I do cover it with a white sheet depending on how much light/heat I want in there.

15



### List of Objects in This Space

#### 1. mushroom tents

Each tent contains mycelia from oyster mushrooms color coded to the color of the tent. These are: *Pleurotus Ostreatus/Blue Oyster Mushrooms*, *Pleurotus Citrinopileatus/ Golden Oyster Mushrooms*, and *Pleurotus Djamor/Pink Oyster Mushrooms*. All these varieties of mushrooms are durable, but fruit at different temperatures. Some may grow over the course of this show, while others may not.

#### 2. books

Every book cited in this zine, and nearly every book that directly informed this project. Information comes from everywhere, though, this is just a part of a much larger web.

#### 3. garments

One is a dress made from muslin with remnants of failed shiitake mushroom/ ginger paper. Another is a gifted nightgown, with a found discarded rabbit hide and grown *Pleurotus Djamor/ Pink Oyster Mushrooms*, each embroidered with the phrase "I LOVE YOU" in red thread sewn onto the dress. The nightgown was exchanged with love over drinks many years ago, at a different period of life. A third is a thrifted and painted linen dress, decomposed by mushrooms over the period of a month.

#### 4. some prints

5 pictures—all of which are somehow altars to decay, taken at the Rio Grande headwaters in the San Juan Mountains, and in the Gila National Forest. These prints are for sale, and all proceeds will be donated back to Corpus Arts as a community space and resource center.

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#### 5. quilt

The title of this quilt is "*decay is a lover making you a pot of warm soup when you are sick*." It contains donated sentimental pieces of fabric. These fabrics include: a baby blanket, curtains from a childhood bedroom, pajama's from a passed away mother, a wedding dress from a wedding that never happened, the best clothes from a grandmothers past\*, a sweater from a sexual assault, an altar cloth, and others. The inside is warm, and inviting, asking you to curl up in the rest of decay and grow anew. The quilt was washed in the ocean, and slept with for the winter.

#### 6. foraged mushrooms

Various foraged mushrooms from Jemez, NM. Identified types include *Amanita Muscaria*, *Porcini*, and *Lions Mane*. Many remain unidentified.

#### 7. grown mushrooms

*Pleurotus Djamor/ Pink Oyster Mushrooms*

#### 8. bones I have known and loved

Bones collected from the American Southwest

#### 9. turkey tail paper

Paper made from turkey tail mushrooms, as well as the DIY mold and deckle they were made on. More information can be found on page 18.

#### 10. failed shiitake experiment remnants

Paper and prints from trying to make textiles using dried shiitake mushrooms. That didn't work but they are objects worthy of note.

\*since eaten by rats

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**How to make mushroom paper:**  
Information adapted from a section on Peter McCoy's  
*Radical Mycology Zine*

To make any sort of paper, you'll need to make a mold first. You can buy or find a pre-made mold and deckle, but the cheapest way to obtain a mold is to do it yourself. Here's what you need:

**For paper mold and deckle:**

- two picture frames of equal size: the flatter they are, the better.
- hardware cloth or chicken wire
- an old window screen
- weatherstripping tape
- staple gun

**For paper:**

- Hard, woody fungus
- Muslin
- Food processor
- An iron
- Old newspaper
- Wishmaking devices

Cut a piece of both hardware cloth or chicken wire and a piece of window screen that is ½ inch to 1 inch wider than the opening to the frame on each side. On the flattest side of the picture frame, staple first the chicken wire, and then the window screen, across the opening of the picture frame. Make sure the wire and the screens are as taught as possible- like stretching a canvas (see appendix b for diagrams).

**PSILOPHYTES**  
3 sp

**Making the Paper:**

Go to the forest and find any sort of hardwood mushroom. Turkey tails are what I used, but you could use other hard and woody fungi like artists conks, or other polypores. Smash these up with a hammer, and soak them in water. Let sit for 2 days. After 2 days, drain the mushrooms and hit them with a hammer again. Let them sit another day.

Put the mushrooms and about 1 cup water, and blend them in the food processor for a long time, the mushier, the better. When you're done, get a container that fits your paper mold and is at least ½ foot deep. Mix your mushroom mush with more water so that your mold will be able to fully submerge in it. This substance will be pretty thin, but the thicker it is, the thicker your paper.

Place a piece of muslin over the screen on the flattest side of your mold, and place the other side on top of it so the weatherstripping tape is flat against the sides of the screen. Dunk this into the water, and shake it (like panning for gold?) until a thin layer of mushroom gunk is covering the muslin. Take out and let drain.

Remove the two frames, so you have a piece of muslin that contains a square of thin mushroom gunk. Place it on top of a stack of newspapers on an ironing board and put another piece of muslin on top. Iron this stack until all the moisture is gone. Switch out pieces of muslin and newspaper as they get too wet. When this is completely dry, peel a sheet of paper off the fabric.

18

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**Is this even about fashion, like, at all?**

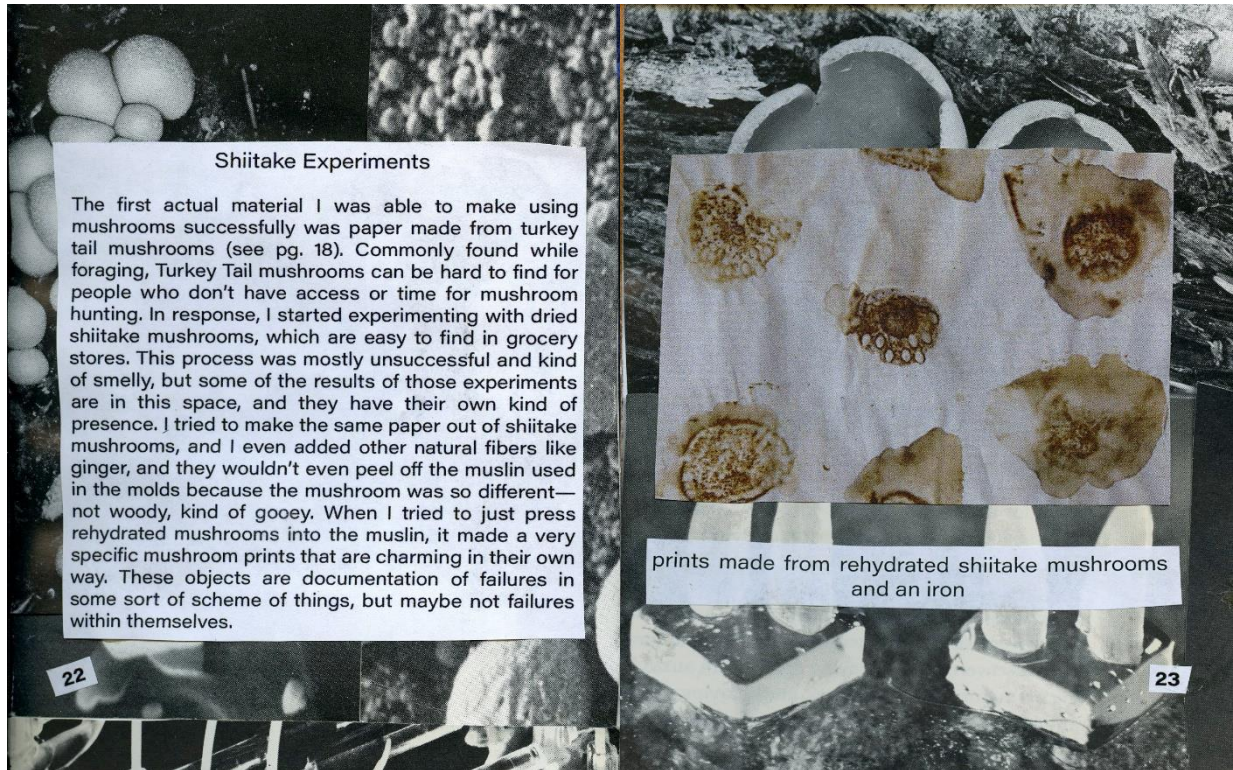
The way we dress ourselves communicates so much about us to the world. Fashion has equal histories with radical movements and subcultures as it does in aristocracy and elitism (see: *Fray*). Fast fashion is a term commonly used to refer to the global market of cheap clothing manufacturing/selling/disposal (see: *ITEMS: Is Fashion Modern?*) Fast fashion is a hard issue to tackle; fashion is both empowering and oppressive, when used in different ways. The fast fashion industry is a major player in environmental crises and unethical labor practices, but when we hear about pollution in and from China or the deaths of workers in Bangladesh, how do we bring it home and address these issues without adopting a savior complex? As Fred Moten says in *The Undercommons*, "I just need you to recognize this shit is killing you, too, however much more softly." This project started as an effort to create a DIY textile out of mushrooms, but as I dug more and more into the histories of fashion and mycology, textile manufacturing processes, concepts of decay, and failure, I realized that the production of a shiny, perfect, unproblematic textile might not be the point. Maybe I don't know what the point is yet, or maybe it's different for everyone. Fungi is a mycelial network for much longer than it is a mushroom— sometimes things exist as a web instead of just an object.

**Decomposing a dress:**

Mushrooms are adept at breaking down strong and complex cellular and chemical systems, which is how they are able to digest (and benefit from) the complex chemical lignin that makes up wood, a notoriously un-digestible substance. By decaying wood, fungi makes those nutrients available for other organisms in the forest once again. However, fungi can digest more than just trees. Lately, there has been interest in some mushrooms varieties (including oyster mushrooms) being able to biodegrade plastics (see *Mycelium Running*) They do this by breaking down the large polymers that make up plastics into simpler chemical structures, so that other microorganisms can come and eat the rest. This has a lot of implications on small and large scales. Can mushrooms be used to decompose plastics on a large scale? Can people start to biodegrade their plastics along with their banana peels instead of relying on landfills? I don't know, but I do know you can probably put whatever you want in a mushroom growing setup and see what happens. I tried to decompose a dress made out of natural fibers using mushrooms, and the start of success is apparent. Could this be extended to other synthetic clothing waste created by fast fashion?

20

21



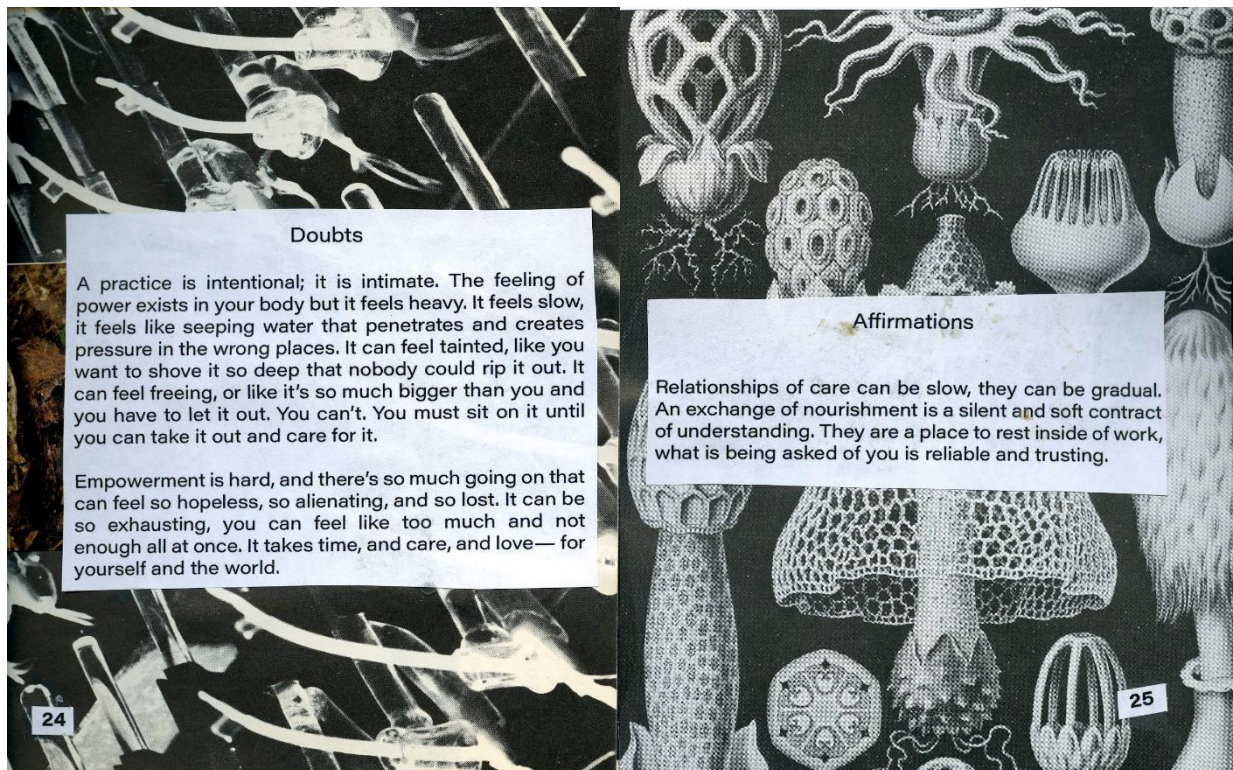
### Shiitake Experiments

The first actual material I was able to make using mushrooms successfully was paper made from turkey tail mushrooms (see pg. 18). Commonly found while foraging, Turkey Tail mushrooms can be hard to find for people who don't have access or time for mushroom hunting. In response, I started experimenting with dried shiitake mushrooms, which are easy to find in grocery stores. This process was mostly unsuccessful and kind of smelly, but some of the results of those experiments are in this space, and they have their own kind of presence. I tried to make the same paper out of shiitake mushrooms, and I even added other natural fibers like ginger, and they wouldn't even peel off the muslin used in the molds because the mushroom was so different—not woody, kind of gooey. When I tried to just press rehydrated mushrooms into the muslin, it made a very specific mushroom prints that are charming in their own way. These objects are documentation of failures in some sort of scheme of things, but maybe not failures within themselves.

22

prints made from rehydrated shiitake mushrooms and an iron

23



### Doubts

A practice is intentional; it is intimate. The feeling of power exists in your body but it feels heavy. It feels slow, it feels like seeping water that penetrates and creates pressure in the wrong places. It can feel tainted, like you want to shove it so deep that nobody could rip it out. It can feel freeing, or like it's so much bigger than you and you have to let it out. You can't. You must sit on it until you can take it out and care for it.

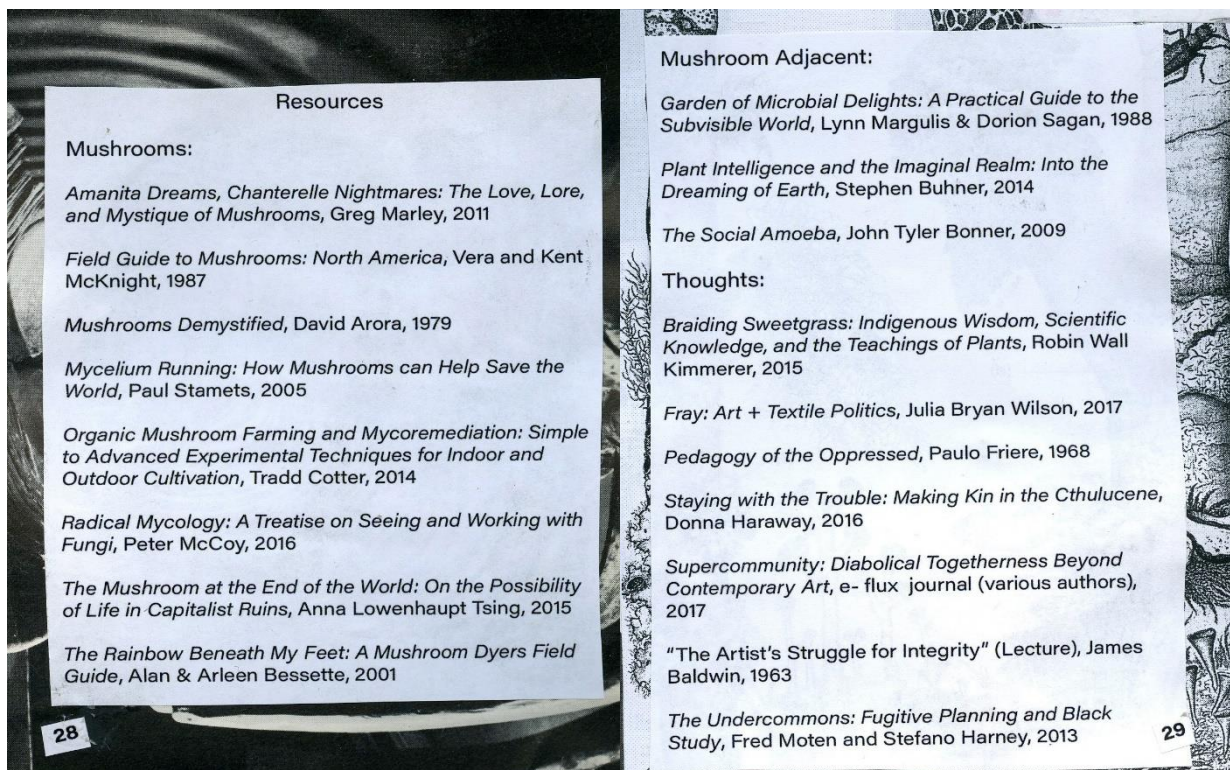
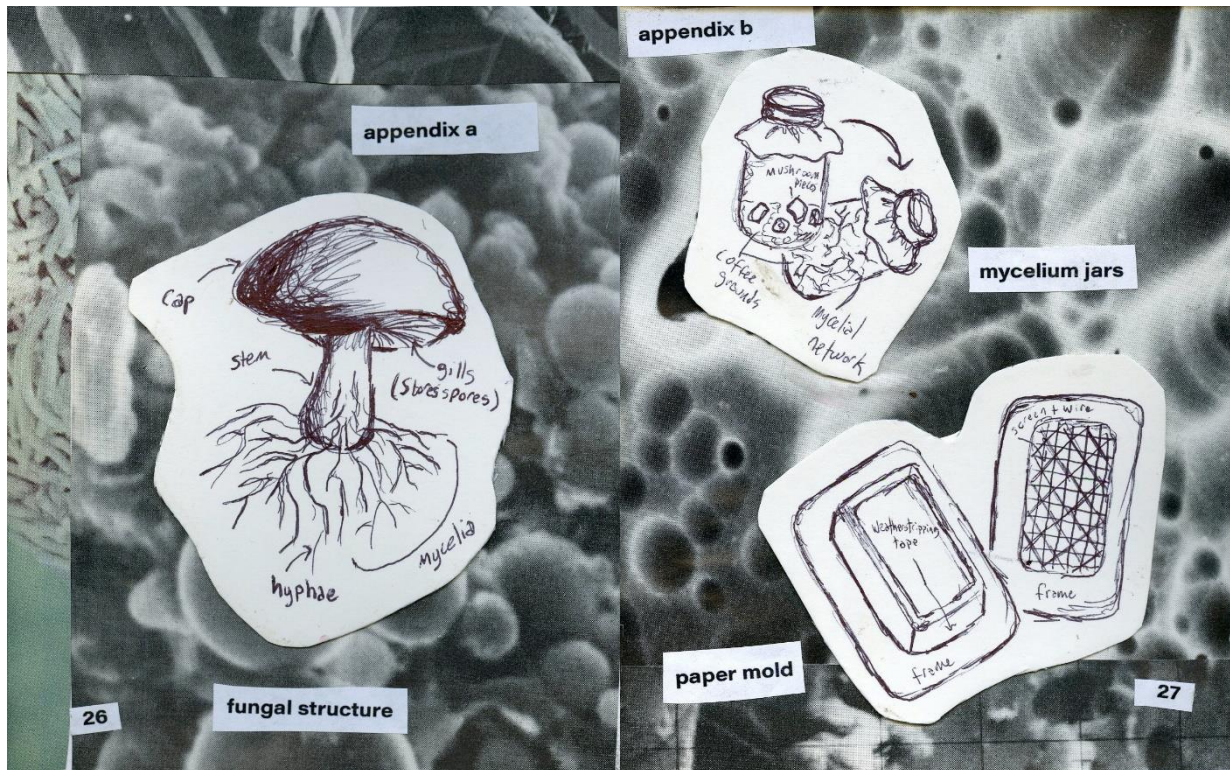
Empowerment is hard, and there's so much going on that can feel so hopeless, so alienating, and so lost. It can be so exhausting, you can feel like too much and not enough all at once. It takes time, and care, and love—for yourself and the world.

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### Affirmations

Relationships of care can be slow, they can be gradual. An exchange of nourishment is a silent and soft contract of understanding. They are a place to rest inside of work, what is being asked of you is reliable and trusting.

25



Some questions for you, too  
feel free to write down some answers

What gives you power?

What makes you feel powerless?

How do you understand your community?

How do you participate in community spaces?

What systems do you feel trapped in?

What are oppressive structures that are present in your life?

30

What do you want to decay?

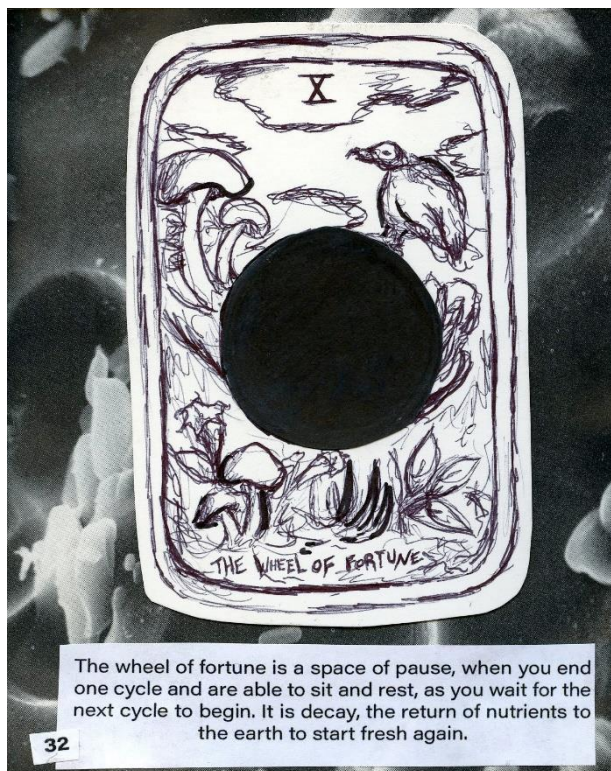
What do you want growth to look like?

What are some knowledges you gain from non-human species?

What makes you feel loved, or secure?

What is decay to you?

31





### Distribution:

The zines were spread throughout the play space and participants were encouraged to pick one up as they walked in, so they could find information about each work in the space. The zine was the only place where information about each piece in the show was listed, which prompted the visitors to initially take one. They were also distributed National Collegiate Honors Conference during my poster presentation, and by Corpus Arts at Albuquerque Zinefest 2019.



The zines on display along with literary resources

## Section 5: Workshop

Two workshops were developed and conducted in Corpus Arts. The workshops taught participants a DIY mushroom growing technique that I learned in my own journey to grow mushrooms. It uses coffee grounds in a jar with an air filter to grow the mycelia leftover in store-bought oyster mushrooms, which can eventually be “replanted” to fruit mushrooms. I chose this as the workshop topic because it is simple, easy to understand, cheap, and can yield results if people continue to care for their jar of mycelium. The conceptual motivation of the workshops were to demonstrate the accessibility of growing mushrooms and provide a physical example of how fungi grow. I wanted to get people excited about mushrooms by providing them with an interspecies companion. A negative of the jars is that they aren’t 100% reliable, because even when sterilized, there’s a chance external mold can find their way onto the coffee grounds and outcompete with the mycelia. I informed participants of this factor and told gave instructions on what to do if this happens. The options are to either remove the mold, see if the mycelium will outcompete, or to redo the process with multiple jars to increase chances of one surviving. Part of the beauty of experiments or DIY solutions like this is that even if it doesn’t work the first time, the materials are easy to find. One can replicate the experiment multiple times until they have healthy mycelium in which to fruit mushrooms. Even if the jars did become contaminated, visitors to the space still had an ecosystem to take home and care for and ruminate on. The role of failure is present in these experimental jars, because each failure is a new lesson and results will come with patience and acceptance of these failures. Mold is an example of a failure that exists in the experimentation of mushroom cultivation, but also a reminder that failures are an important stepping stone from which to tread onwards and understand the world in a different way. The most common mold that contaminates these jars is *Trichoderma Harzianum*, which is a

fungus that is used as a fungicide for agricultural purposes. While the mold is a problem in some applications, it is a solution in others.

I tested the workshop during the teambuilding night for *Scribendi*, the Arts and Literature magazine for the Western Regional Honors Council, run by students at the UNM Honors College. I taught this workshop like a traditional class, where I started with an activity, provided some background information, asked some questions, and then explained how to make the jars and had people come up one by one to make their jars. I also passed out a worksheet with some diagrams of mushroom anatomy and how they work in a forest ecosystem, and instructions on aftercare for the jar. For the activity, I passed out notecards and asked each participant to write down one negative impact humans have had on our environment, and one positive one, as Robin Wall Kimmerer describes in *Braiding Sweetgrass*. As expected, they had a harder time coming up with positive impacts, but I wanted the takeaway to be that humans are part of the environment, not just a force acting on it. While the activity was interesting, some problems I found in this setup was that it was very hierarchical, and participants lost interest during the introduction and while they were waiting to make their jars. It was stressful for me to keep together and keep people engaged with the topic, and I wasn't necessarily successful in those aspects. From the test workshop, I learned that I needed to provide a workshop that was more engaging and figure out how to conduct it with smaller groups, so that it felt less like a class and more like a connection. After this test workshop, people wrote down what they learned from the workshop on anonymous notecards and returned them to me.

**Mushroom jar aftercare:**

1. Let the mycelium grow into the coffee grounds. After a few days, the stalks should look fuzzy, and after about a week, the mycelium should have colonized the coffee grounds.
2. When the mycelium has grown into the coffee grounds and need more substrate to grow on, add another inch or two of coffee grounds. Steam from a coffee maker or espresso machine should pasteurize coffee grounds enough to use, or you could boil them for a few hours or put them in a pressure cooker with ample water. Make sure to not put the coffee grounds in the jar when they're too hot, or they could harm the mycelium. Try to do this quickly and in a clean environment so mold spores cannot enter.
3. Note: the most common mold for mycelium to get in a normal household is *Trichoderma Harzianum*, which is green in color. If you notice this growing in your jar, you have a few options. You could A) throw it out and start again, this time with multiple jars. If you have more than one growing, you're more likely to get one without mold. B) attempt to take the moldy part out if it is still small. This could work, or it could further spread mold spore. C) Just leave it alone. Oyster mushrooms are an especially hearty species, and they can often outcompete mold if given time.
4. When the mycelium has colonized the new coffee grounds, do this again. Repeat until the jar is full.
5. When the jar is fully colonized, obtain a gallon plastic bag and some straw or cardboard soaked in water for an hour. To pasteurize this new growing substrate, pour a few pots of boiling water over it.
6. Open your mycelium jar and mix the coffee grounds with the wet straw or cardboard. Place in the gallon sized bags and cut 4-5 small X shapes into the bag.
7. Place this bag inside a plastic container with a lid, or a trash bag. Mist the outside of the gallon sized bag and the inside of the larger container with water every day and give them a few minutes to an hour of oxygen every day. In a few weeks, fruiting bodies should appear!
8. Harvest the fruiting bodies 3-5 days after you notice them start to grow. After your first round, keep the bag: it should continue to fruit for a good while.

Worksheet  
detailing  
mushroom  
jar  
aftercare



Image of me demonstrating how to make a jar of mycelium



Image of me helping participants make their own jar



*Scribendi 2020* staff holding their own jars of mycelium

Rowan's presentation taught me not only details about mushrooms but also how they can be foundations of forests and act as durable aids for ecosystems.

I learned that oyster mushrooms are some of the easiest mushrooms to grow, that you can cut off the ends of storebought oysters to propagate another colony, and that we have a lot we can learn from mushrooms as a community.

How growing mushrooms is not a "rich people" activity & anyone can grow their own inexpensively.

Feedback from participants asking what they learned

My major takeaway was that mushrooms are way more important to the environment than I ever thought! They play such a huge role in building environments, communities, and keeping a habitat healthy. WOWOWOWOW!

I learned that all you have to do to grow or nurture something new is to have the right steps and to follow them with care. All it takes is a little bit of love and effort.

That mushrooms connect like everything in forests + do lots of useful things for the environment like filter heavy metals.

Also fun to take home a mushy friend. ;)

I learned that mushrooms form a large network of mycelium that can span an entire forest and that this can be replicated from the exercise in the workshop.

I learned about humans maybe positive role in combating climate change - this knowledge is restorative act, or maybe not humans role but nature's ability to restore. I also learned about mushroom culture & counter culture which was super badass.

I learned that even the smallest of organisms that are often disregarded are what can keep an entire network together. There is also much care in fostering the right environment for growth.





how to communicate a technical process  
+ be able to follow instructions for  
something I'd never even heard of -  
growing your own mushrooms.

I realized people didn't want to or  
understand the assembly line process

From Rowan's presentation, I learned  
that the mushroom's mycelium branches  
beneath the ground and intertwines with  
other mushrooms. The head atop the soil  
is only a reproductive portion.

I was surprised at the  
necessity for a sterile  
environment for creating the  
mini-habitat. That taught me  
that even something like a  
mushroom can be effected  
by the smallest organism.

During the final workshops at Corpus Arts, I changed the format of the workshop based on feedback from the trial workshop with *Scribendi* staff members. I orchestrated the final workshops so visitors could drop in as they wanted, make a jar, and take a worksheet home while talking to me and asking me questions. This way, instruction felt more intimate and the pressure of large groups was taken away. The participants felt more engaged and at ease, and the workshops seemed more casual and less intimidating. I took the quilt I made from donated sentimental fabrics, laid it down on the floor, and displayed a sign that said: “Learn how to Make a Jar of Mycelia (so you can grow your own mushrooms!)” People came, kneeled with me, and I showed smaller groups how to make the jars, instead of having to corral a larger group of people for a longer time. Making the mushrooms on the quilt on the floor was an attempt to make the workshop an even playing field and downplay hierarchical learning structures. For the first workshop, it worked well, but for the second workshop I used a table to make it handicap accessible.



Images of the first workshop during the opening of the show



## Section 6: Poster

To present the findings from my play space, I submitted a proposal to be a part of the poster session at the 2019 National Collegiate Honors Conference in New Orleans. The theme of the national conference was “Disrupting Education.” The proposal was accepted, and I designed a poster during the month of October to present in November. The poster detailed different parts of the workshop, with an introduction and the subheadings for the most important pieces of the show, including “Discarded Nightgown,” “Decayed Dress,” “Mushroom Habitats.” “Literary Resources,” “Companion Zine,” and “Community Workshops.” As per the requirements stated by NCHC for the poster session, it was intended as an overview, not all my research or works. Additionally, I passed out zines at the session, for further information. The accepted proposal is as follows:

### **Creation of an Experimental Space**

Rowan Roberts

**Description:** This poster details the construction of an experimental, community-oriented exhibit space. It seeks to promote play as method of problem solving and cultivate conversations and interactions as an effective method of artistic exchange.

**Abstract:** This poster shows my process of creating an interactive exhibit space using organic natural materials and fashion as a starting point for conversation about the commercialism and environmentally destructive practices in traditional fashion. The benefits to having an interactive space where experimentation is valued, and failure is encouraged, opens the possibility for solutions that are innovative and community driven. The practical needs for such a space include a venue, tactile resources, and community involvement. The poster will illustrate the process of securing a space for a pop-up event, cultivating organic materials for artistic expression, and community outreach.



A photo of me next to the poster and zines at NCHC 2019

My intentions for this poster was to display the most important parts of my play space and research to other colleagues in education. I wanted to introduce educators to these kinds of radical and restructured methods of education in DIY settings. The theme of the conference was “Disrupting Education,” so my project was fitting for this event. However, the paradox was not lost, how do you talk about breaking education away from an institution while you are working within an institution? In many ways, that is a question that cannot be answered through one project, but rather through continued work, relationships, and organizing.

# Creation of an Experimental Playspace

## Rowan Willow

*Decay: An Exploration in Social Mycoremediation* is a playspace made as part of an interdisciplinary creative thesis at the University of New Mexico. This exhibition employs fungi as a lens to study and unravel oppressive structures woven by capitalism and colonialism. The space features information and ideas on fungi and sustainable fashion practices in an effort to discuss the ecological principle of decay in human ecosystems. The space aesthetically references countercultural movements and utilizes their techniques such as sentimentality and play. The pieces, such as foraged objects, altars, garments, and living mushrooms interconnect visual cues in a web, not unlike a mycelial network- the vegetative body of fungi that aids in connecting a forest together. Having an interactive space where experimentation is valued, and failure is encouraged opens the possibility for solutions that are innovative and community driven. The space seeks to promote play as method of problem solving and cultivate conversations as an effective method of artistic exchange. The playspace is located at Corpus Arts, a radical queer library and resource center in downtown Albuquerque.



### Discarded Nightgown

Garments are shown alongside other works created with mushrooms. This dress shows homegrown pink oyster mushrooms (*Pleurotus Djambor*), each embroidered with the phrase "I love u" and attached to an old nightgown with discarded rabbit fur. The dress focuses on decay as a careful and loving process; a rest between cycles of life that returns nutrients back to the earth.

### Decayed Dress

I created an environment in which mushrooms could grow and feed on a thrifted linen dress. The mushrooms which ate the dress are still attached, and dried into the fabric. Fashion shares histories with subcultures and radical movements just as it does with class struggles and harmful labor and environmental practices. Can we decompose harmful practices in fashion in order to nurture its role in communication and self-expression?

### Mushroom Habitats

A variety of oyster mushrooms are grown in the space in order for participants to share an environment with non-human species and to gain fungal knowledge. This knowledge includes using decay to make room for new growth, sharing nutrients, and fostering community and adaptability in the face of struggle.

### Literary Resources

Participants have access to the resources which informed the playspace and creative works. The playspace hosts open hours for participants to read books on mushrooms, fashion, and social/environmental justice, and interact with materials. The accompanying zine references and lists these resources.

### Companion Zine

Accompanying the playspace is a zine which extends the idea of decay as a metaphor. It offers hands on information about how to grow mushrooms and make things from them. The zine provides a list of resources which connects mushrooms to fashion, social justice, and environmental remediation.

### Community Workshops

Two workshops were held in the space, which taught participants how to start growing mushrooms using only mason jars, coffee filters, coffee grounds, and store bought mushrooms. The workshops foster community and is an attempt to demonstrate accessibility of resources outside a commodity chain.

## Conclusion

Through many different experiments and experiences, this project has not reached its final iteration, but merely crossed on steppingstone on its journey. While the project is fluid and changed many times since its initial conception, it has also changed the way I think and work. By exploring human and forest ecosystems through relationship building and allowing to be taught by more-than-human organisms, I have found that challenging our own thoughts and preconceptions is vital to human survival. We must recognize our own roles in oppressive systems, including the academic system that supported this project. As we build new worlds, we break previous worlds which still have the power to harm vulnerable people and communities. How can we allow these systems to decay as we build new ones from healthier foundations? Poetry professor Fred Moten and interdisciplinary scholar Stefano Harney term the phrase “the undercommons,” which refers to the space of noise that is a current under these institutions, the noise that seeks to change and break and subvert from within. In queer philosopher J. Halberstam’s introduction to their book, *The Undercommons: Fugitive Planning & Black Study*, he says “The mission then for the denizens of the undercommons is to recognize that when you seek to make things better, you are not just doing it for the Other, you must also be doing it for yourself” (10). We must practice this in our communities and repair the places we know, not places far away and out of our understanding. As we continue to play, to experiment, to build relationships, to organize, to challenge, to make, to study, and to love, we can sow the seeds of resistance that others can grow as we, ourselves, begin to decay.

In this project, I built relationships with both community and fungi. A relationship is giving and receiving, and through that, building trust. It is much harder to define the reciprocity



that is gained through caring for fungi, as I give nutrients, the fungi let me glimpse an impossible world that I will never understand but am still allowed to bask in. What I gain from my community is also vast and undefinable, a sense of belonging, new ideas, and rest from the world which can be cold without those we love. To give back takes work, vulnerability, and trust. I only hope that through my exhibition, my workshops, my zines, and whatever the future of this project holds, I can be a community resource as well. A community is an ecosystem, and its health depends on the participation of each inhabitant, no role too small. A healthy ecosystem does not exploit or alienate its participants, as systems like fast fashion, capitalism, and colonialism do, but calls them in and cares for everyone. Oppressive systems have power, and we can't always opt out of them entirely, but as we build communities and healthy ecosystems for everyone, we take that power for ourselves. We organize and act to have power with others, not over others. The relationships we build take work and give power.

To challenge yourself often means to dissolve the sense of authority that you thought you had. This process is both devastating and empowering and requires you to rebuild your own perception of yourself. It means letting go, but the person who comes out on the other side is still you. There is so much we don't know, but "the unknown" is only our unknown. Fungi destroy and rebuild, and we can learn from them in our own attempts to do so. The lack of human knowledge isn't a lack of knowledge, just something we don't understand yet. We are part of the same world as fungi is, a human ecosystem is a natural ecosystem and humans are part of nature. To accept this place, we must shed any insistence of knowing better than it, and we must engage in reciprocity with our shared inhabitants. I leave you with the same sentiment that J. Halberstam starts *The Undercommons* with:

“It ends with love, exchange, fellowship. It ends as it begins, in motion, in between various modes of being and belonging, and on the way to new economies of giving, taking, being with and for and it ends with a ride in a Buick Skylark on the way to a new place altogether.” (5)

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