

Myco-human
Mediations & Meditations



Tectonics of
Intraspecies Cohabitation

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a crush

an obsession,

HUMAN NATURE IS being paradoxically resistant to change while simultaneously being hopeful for a better future.

a reality check

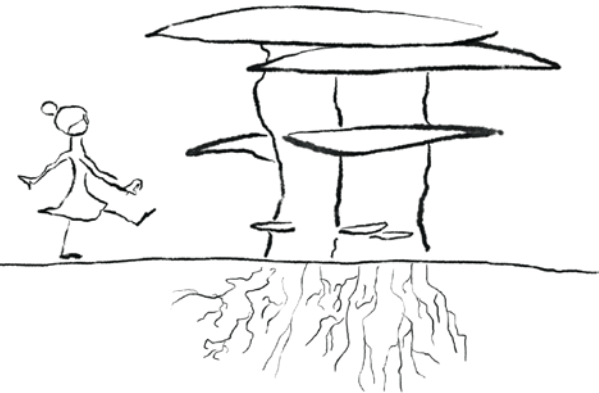
a plan

HUMAN NATURE IS reading into things far more than any reasonable creature would.

out through a bunny-ear

HUMAN NATURE IS being capable of disbelief, and equally capable of suspending it while skimming through a PDF.

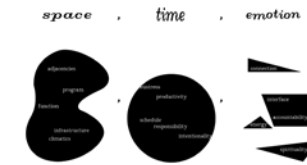
“The idea of *human nature* has been given over to social conservatives and sociobiologists, who use assumptions of human constancy and autonomy to endorse the most autocratic and militaristic ideologies. What if we imagined a human nature that shifted historically together with varied webs of interspecies dependence?”
Anna Tsing, *Unruly Edges* (144)



What does it mean to be responsible for another being? Are there ways we can extend the kindness and compassion we show towards other humans to other species? Is it necessary to subject others to suffering to make ourselves more comfortable?

How can we learn from something that cannot speak in ways we understand? If we do not share languages, are there other ways to communicate? Are there ways we can align ourselves further? Are there lessons we can take forward from biological phenomena that can be applied to how we live today? What can we learn from non-hierarchical ways of communicating and supporting others?

Why do we make things? Is the world getting better or worse? What drives us to care about things so much bigger or smaller than ourselves? Is there something greater out there? Should there be? Can we make it? Should we? How can we extend our history of automation and ease of performing certain actions to benefit our own productivity to acts of care and comfort? How do we inject what we believe into the places we live? How do the places we live shape us in turn?



The primary concern of our lives and work as architects, and indeed as humans on earth, has turned to the ecological crisis in recent years. We are startlingly aware of what we have done to the earth that produced us, and it is now on us to clean up our own mess after devouring our resources with reckless abandon.

Mycelium has emerged as a sustainable building material. It is moldable, pliable, able to sequester carbon and be composted fully, uses other relatively sustainable materials as substrates, the list goes on. It's all the hype.

But the solution to what ails us is only partially remediated by the usage of another culture as a

material. Cultural myco-remediation 1 perhaps could hold some other keys to reinterpreting the world around us and our relationship to it.

Mycelium being explored as a sustainable, reusable building material has become quite the rage in the field of architecture as we move from a focus on form and function to a lens where we continue that focus, but add onto it material analysis and environmental concerns. The complicity of the industry is present at all scales, and there is something exciting about

But if we have learned anything from the last century of human history, it is that it is rather unwise to incorporate a new stakeholder

without also listening to what they have to say. Nothing about us, without us. How can we incorporate the stakeholder into the decision-making process when the stakeholder cannot communicate?

And so the questions of this semester shifted from one foot to another almost haphazardly. A tension with aesthetic discomfort, moved into a conversation about nonhuman stakeholders, to musings on connections and relationships, mulling over creative collaborations and authorship...

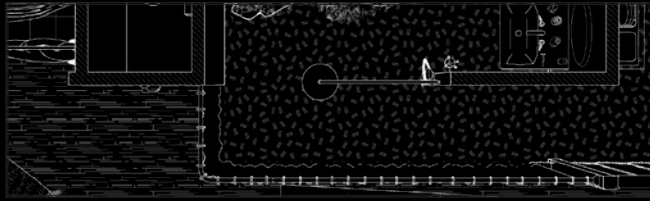
This mess of influences inspirations and intentions has manifested threefold, concentrated and pruned. A narrative weaving together a hypothetical person that follows the framework of



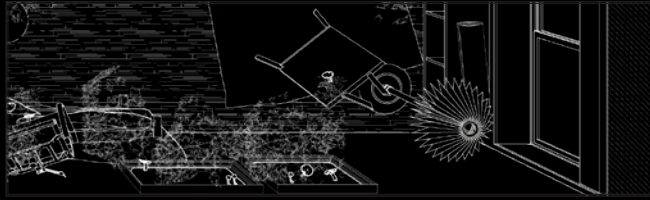
a relationship with a mycelial culture before moving in with it, coupled with a series of essays that seeks to embed theoretical basises that underpin her thinkings and fascinations. These are then modelled through an apartment renovation, built by our character, which takes these abstractions and attempts to develop them to a logical extreme to go from observing to feeling, co-living and aligning with mycelia to understand it.



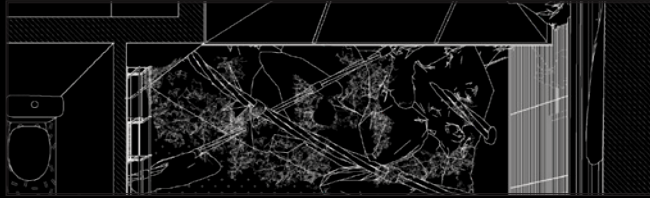
1. frame oneself



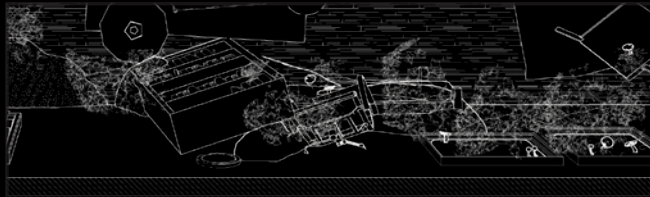
3) find what remains



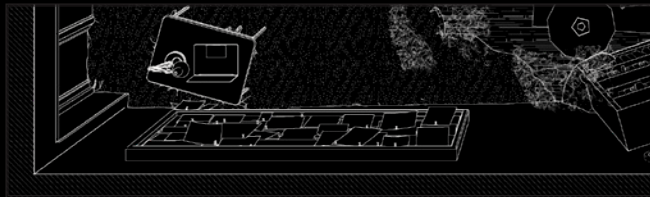
2/ cultivate growth



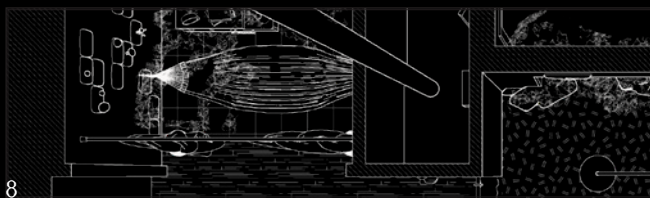
4: bind it all together



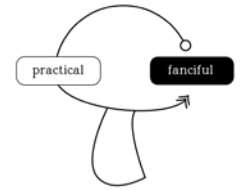
5| mold to suit



6# rest in solace



Modelling



“A model is a work object; a model is not the same kind of thing as a metaphor or analogy. A model is worked, and it does work...a model is like a miniature cosmos, in which a biologically curious Alice in Wonderland can have tea with the Red Queen and ask how this world works, even as she is worked by the complex-enough, simple-enough world.”

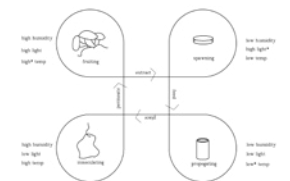
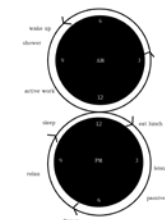
Donna Haraway

If cultural expectations are what frame our immediate relations to each other and the world around us, then storytelling and myth-making is the primary medium to which all else falls subservient. The architectural model does not only explore tectonics, arrangement of space, and human scale, but also, similar to a diorama or a set for a film, tells a story about the interrelation of characters. There are three characters here: the human, the mushroom, and the walls that frame and intertwine a small part of their lives. Each play their own role,

but it is only through their entanglement that they come to create. This framing mirrors my own experience with various material explorations that have posed questions and painted potential applications and imaginations as I spend time with a material so unlike and yet cannily similar to me. Aligning my needs and rituals with the growth of the mycelia and its needs and routines, and clustering these around the typology of coliving, allows us to explore how the medium of architecture can facilitate taking care of each

other and growing together through maintenance and care.

The puzzle becomes: how can one make like the mushroom and bind together, metabolize, and support these composite parts while providing them with the lenses each other offers? Synthesize months into pages? Perhaps we have to start from the beginning.



My fascination with mycelia began, as many wonderful things do, with a couple nice trips.

Location: Friend's apartment, Seattle.

Partner: Classmate from architecture school.

Initial emotional landscape: Muddy.

Immediate aftermaths: Talking funny, freely falling into tangents. Deep dive into each others' reasons for being where we were, creative inspirations, and workflows. Crying about our mothers, thinking about change. Hugs & jokes. Shot bad atmospheric film...

Location: Notting Hill.

Partner: close friend from back home.

Emotional context: Been in new places thinking about new things. Hopeful for the future, anxious about the future.

Aftermath: Took the best shower of my life. Visions that became stop motion 80's style animations. Positive self-image, laughs, light reminiscing. Posturing and reflecting...

Location: Concert Venue.

Partner: housemates, festival crowd.

Surrounding emotional context: Just went through a breakup, feelings of abandonment and separation from those around me.

Aftermath: Interpretive dance to Perfume Genius, crying on the hedge, calling my ex. Overflow of feelings that were being held inside. Lots of drawing, painting, talking...

When you leave a place you know in favor of a place you don't, your existing routines are upended and you realize how much you rely on your well-tread ways of seeing. They make things easier, let you focus on what is more directly immediate to you. And when you don't have them, suddenly everything is so much more difficult. Cognition reforms itself around your new reality. How do I get to work? Where do I buy bread? How do I make coffee? Who should I tell when I'm feeling bad?

When you start to question some material truths around you, when one "truth" you hold dear is proven false, others naturally fall into suspense. And it is only through loosening these neural pathways we

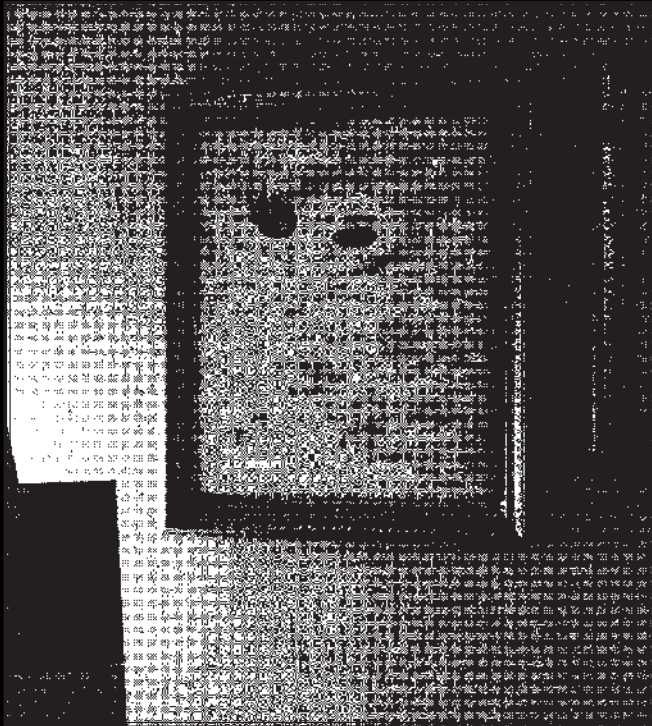
naturally fall into that we can forge new ones.

This triggering of unconscious truths reveals the potential for loosening our grip on "reality", such that our minds are more open to interpreting stimuli a little different from how we may otherwise have. This state of mind allows us to tap into a framing that our lives had when we were babies, and our biases were much less engrained. Michael Pollan, in How To Change Your Mind, discusses that phenomenology of psychedelic experiences and our understandings of the consciousness of children, mentioning "hotter searches, diffused attention, more mental noise (or entropy), magical thinking, and little sense of a self that is continuous over time." Alison

Gopnik is quoted, "The short summary is, babies and children are basically tripping all the time."

But after a child makes sense of the world, they then inhabit it in patterns that solidify the sense they've made.

Much study has been done of the symbiosis of mushrooms and humans through ingestion followed by micro-organism mingling shifting cognition. These findings function as a backbone to philosophical thought when it comes to the intermingling of the "social and the ecological", to borrow a turn of phrase from Donna Haraway. People can use psychedelics to trigger open-mindedness at key points in their life, but the key here is a self-narra-



tive, and a temporary wipe of certain strongly held biases.

Those biases are formed over countless iterations of daily routines, daily activities, daily affirmations. It is through these processes, these repetitions, that we form meaning from and attach ourselves to (and identify ourselves within) social structures. At an ecological turning point, it is essential to reform the mundane in turn.

And it is within the subtle shifting of mundane daily process that we can shift our field of cognition towards one that is more inclusive to the wide variety of micro-organisms that happen to be our most prolific housemates. Psychedelics can provide us with a



groundwork, but adjacency, and the willingness to facilitate it, is what builds relationships. As such, “magical thinking” can provide just the small shift that we need to address our ways of living and realign them with the reality we find ourselves in.

In our patterns and our routines, our rituals and our relationships, that is where we become ourselves.

From the moment I laid eyes on her, I knew she was special. Unlike any other material, she glistened with promise—with life.

It wasn't immediately that I could take her home...oh, the presumption that I lacked! If only I had earlier, perhaps our bond could have come so much stronger! But I know our time together does not end with these words being printed and distributed.

Far to the contrary. I hope this humble publication serves not as a vanity project, but instead, an instigator for thought. A repackaging of my findings and musings, none of which unique, for your perusal.

“It is difficult for anyone born and raised in human infrastructure to truly internalize the fact that your view of the world is backward. Even if you fully know that you live in a natural world that existed before you and will continue long after, even if you know that the wilderness is the default state of things, and that nature is not something that only happens in carefully curated enclaves between towns, something that pops up in empty spaces if you ignore them for a while, even if you spend your whole life believing yourself to be deeply in touch with the ebb and flow, the cycle, the ecosystem as it actually is, you will still have trouble picturing an untouched world. You will still struggle to understand that human constructs are carved out and overlaid, that these are the places that are the in-between, not the other way around.”
Becky Chambers, *A Psalm for the Wild-Built*

As the anthropocene nears its end and we enter a new phase of communal reality, an opportunity arises to forge new rituals and relationships to become more than we were in the past.

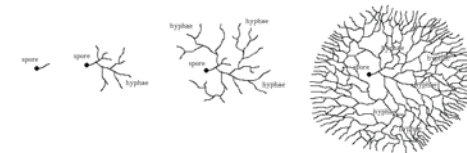
“A detour through the issue of matsutake incomes can help me generalize the point that private assets most always grow out of unacknowledged commons... what we have is mushrooms, that is, fruiting bodies of underground fungi. The fungi require the traffic of the commons to flourish; no mushrooms emerge without forest disturbance.

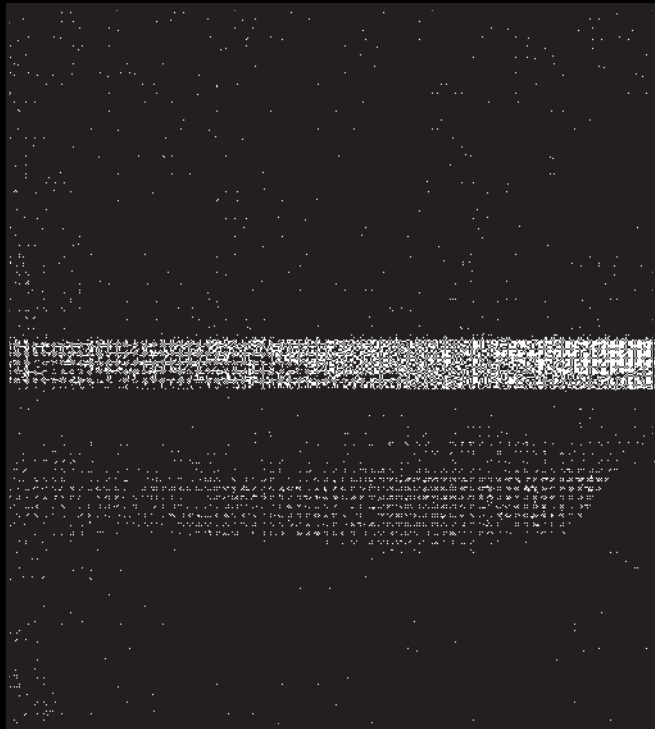
The privately owned mushroom is an offshoot from a communally living underground body, a body forged through the possibilities of latent commons, human and not human...The contrast between private mushrooms and fungi-forming forest traffic might be an emblem for commoditization more generally: the continual, never-finished cutting off of entanglement” (Tsing, *Mushroom at the End of the World*, 271).

Just as we are a product of our environment and our structures are built of materials that are products

of symbiosis, the mushroom itself speaks to the futility of any attempt to sever the individual from the collective.

The home functions as a very effective tool in the human pursuit of separation from the rest of nature. We draw lines in the ground and place bricks in parallel to solidify a line that we have determined is ours. These social structures mirror conceptions that we want to solidify, to make true. However, it is impossible to create a space for only one species. “Every living thing has emerged and





persevered (or not) bathed and swaddled in bacteria and archaea. Truly nothing is sterile; and that reality is a terrific danger, basic fact of life, and critter-making opportunity,” says Haraway (Staying with the Trouble, 30). Our houses do not contain only us, but they are often built to serve only us, and this robs our imaginations from running wild, our critters to elope. If we are the heroes of the story and micro-organisms must be eradicated, then there can be no cross-breeding of thought.

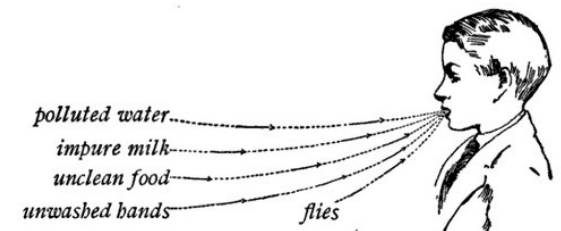
But it is not the case that we despise any connection to nature. Our gardens, historically, allow us to feel connected to nature while making it very clear that it is our domain, not the other way around. We draw lines

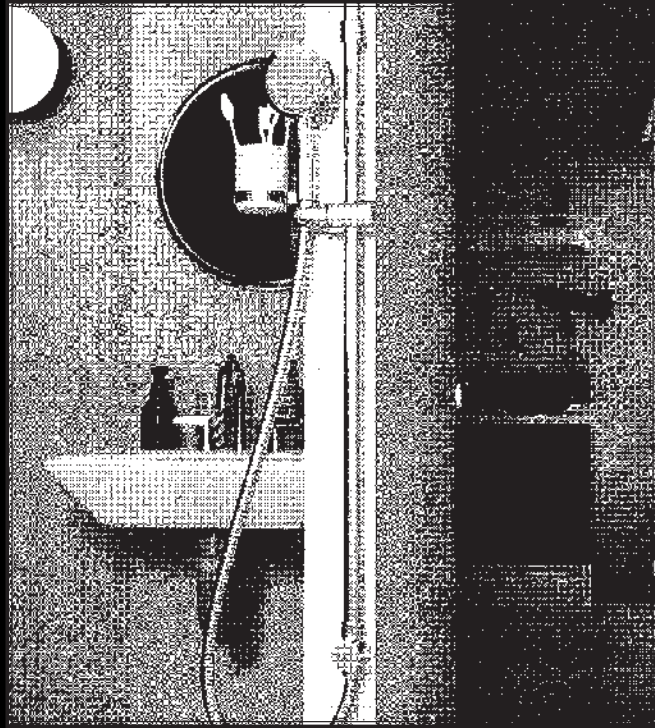
delineating us, and we cut off natural beings from their contexts arbitrarily and without their consent, making them both subservient to and dependent on us.

This line, while it serves its purpose in our day to day lives, results in a bit of a delusion. We live in these systems long enough, we start to forget that they are only social structures. Our decisions and activities affect the world around us quite concretely. The problem of *collective responsibility* refers to, a situation where a large group all

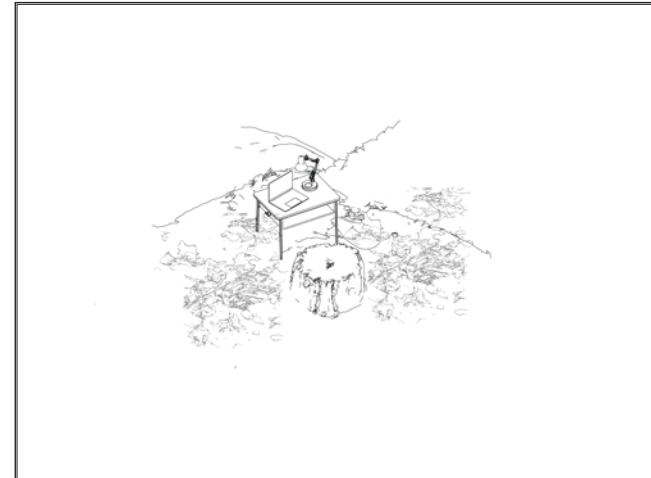
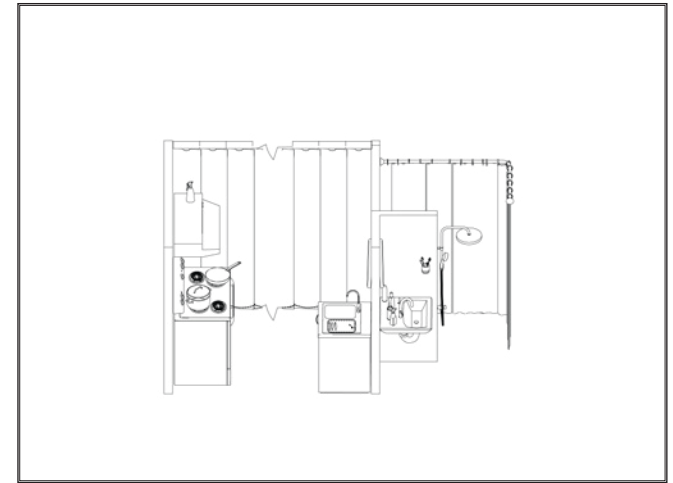
contributes to a harm, but the actions they partake in are decentralized. When it comes to corporations being allowed to do whatever they want within their own domain. I believe the conception of the house and the garden itself is a microcosm of this situation.

The hyperobject of climate change is perhaps the prototypical example of a collective action problem that we deal with today. Due to our conceptions of property, accountability is hard to pin down, and since the fault is so fragmented, blame is unassignable to

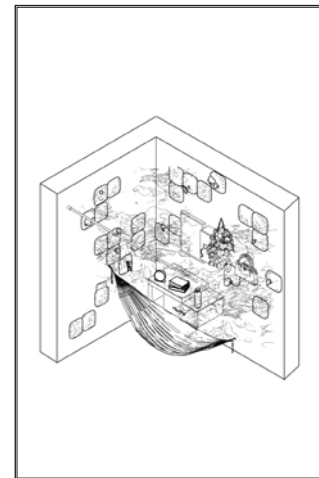




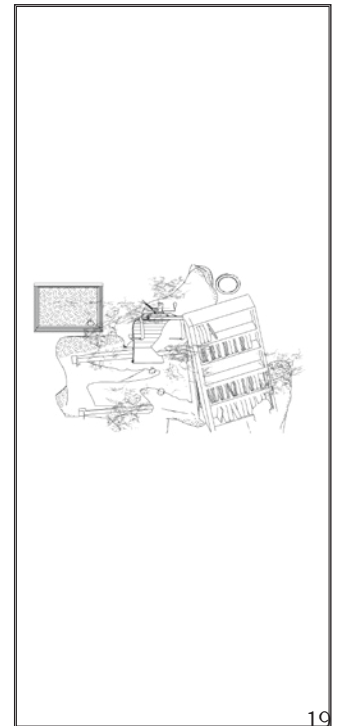
any one party. One resonant way of establishing responsibility in many schools of thought has historically been through introducing accountability. In a group project, suffering grade consequences for not participating towards the collective good can be an effective way of establishing stakes.



The home, a collection of lines that has for better or worse been pre-staked out to segregate off a part of the world for one's own, is a good place to start to model collective account-



ability. Models of co-living provide a good foundation to build on, when extended past humans alone. Using the typology of the house and the garden, reassembled, allows us to experiment with different ways of living that keep us more accountable to the environment that made us, being able to gain in the exchange as well.





Ani Liu
The Botany of Desire:
Experiments in
Interspecies Interfaces



| to give, and
Mélia Roger
Intimacy of Lichens



| to adore, and
Eryk Salvaggio
Worlding: Sympoietic
Mycology

| to listen, and

Co-Living, Umwelt Hacking

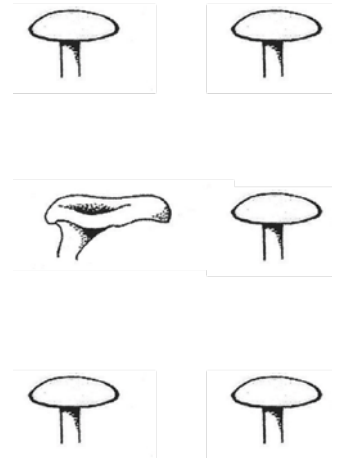
“We may therefore picture all the animals around us, be they beetles, butterflies, flies, mosquitoes or dragonflies that people a meadow, enclosed within soap bubbles, which confine their visual space and contain all that is visible to them. Only when this fact is clearly grasped shall we recognize the soap bubble which encloses each of us as well...if we still cling to the fiction of an all-encompassing universal space, we do so only because this conventional fable facilitates mutual communication.”

J. von Uexküll, A stroll through the worlds of animals and men (339)

This soap bubble is what has been termed the umwelt. Our umwelt is our field of cognition, what we have sensory capacity to perceive. Uexküll posed that all beings have different umwelts, different sensory capabilities. He poses that the fiction of an all-encompassing universal space is useful not as something to strive towards, but instead as something to understand and acknowledge.

But human nature has never been satisfied settling with understanding and acknowledging anything. We are creatures of ends to throw means at.

Umwelt hacking has two primary meanings. It either refers to the extending of the human sensory capability. It has traditionally referred to doing so through technology, such as expanding our view of the stars with telescopes, or microbes with microscopes, or time with high-speed photography. But this term can also be applied to the practice of attempting to shift our umwelt in the direction of something we traditionally perceive as less than us (See Nagel, What is it Like to be a Bat?).



But to really pull this off, I had to study. After all, what I wanted was nearly unprecedented among my peers. As such, I had no way of learning to understand another being through such trivial methods of friendly gossip!

I had to read, and I had to do. Consuming and producing, consuming and producing. There cannot be one without the other, and one can sometimes feel that there can be no either without the guilt of neglecting one...

I read, and I pruned, I edited, and I took and mistook. The model to create and the method to follow was mishearing and chasing the spore to see where it would land.

This took place consecutively with experiments, many many experiments, in my mind and on my mind, in the shrooms and on the shrooms. My globe revolved around her 24/7, I mimicked the lives of those who had come before me and gotten closer, I studied and I performed. And when she and I finally came to consensus, we moved in together.

MYCOLOGY: The study of fungi (e.g. mushrooms, molds, yeasts, and lichens).
RADICAL MYCOLOGY: 1) A social philosophy that describes cultural phenomena through a framework inspired by the unique qualities of fungal biology and ecology. 2) A myco-centric analysis of ecological relationships. 3) A grassroots movement that produces and distributes accessible mycological and fungal cultivation information to enhance the resilience of humans, their societies, and the environments they touch.
Peter McCoy, Radical Mycology (VII)

There is a well-known adage in many queer circles which goes somewhere along the lines of this: "As you question one thing that feels foundational, so much else comes tumbling down fast after." If your perception of traditional sexuality is eradicated, than you are more likely to reconsider monogamy, or binary gender classifications. Your *perception* of possible lives you can live widens as certain restrictions are lifted.

And it is in between the framework of a traditional relationship structure but without the requirements of hierarchical power dynamics that extra-species love can thrive. Haraway defines *Sympoiesis* as "making-with", and invokes Lynn Margulis on "the

co-opting of strangers", to describe "the most fundamental practices of critters becoming with each other at every node of intra-action in earth history." If we are all holobionts, "entire beings", than our understanding of the world is incomplete without participation from other ends of our symbiotic assemblages.

Bruno Latour and Timothy Morton build on each other's conception of object oriented ontology, positing that we exist in actor-networks with all other objects around us. If a living material is to be inserted into the domestic sphere, piercing the bubble of sterility as the end-goal of the home, dialectics between material and person will naturally shift as a result. When the dynamics of maintenance

include feeding and pruning, and in return being offered shelter and insulation, our relationship with our house changes fundamentally. We enter a new kind of cybernetic symbiosis, a house more alive than any smart-home can claim.

But I knew that our love was forbidden. Not only by the world around me but even within myself! My internalized biases resulted in *immediate discomforts*, which startled me—I knew how I felt inside, but I kept having a very different visceral reaction.

So I danced. I knew that to overcome a revulsion inside of me I despised, I had to act, I had to love, I had to practice. I spent time with my beloved, and as I did, I felt us coming further and further into sync.



“Domination, domestication, and love are deeply entangled. Home is where dependencies within and among species reach their most stifling. For all its hyped pleasure, perhaps this is not the best idea for multi-species life on earth.”

Anna Tsing, *Unruly Edges*

The domestic realm is the perfect place to experiment with living paradigms that shape our collective consciousnesses. What is natural, and good, has been historically decided in the home. It must be nice and pretty and fit in a pot. It must be polite and kind and have dinner ready without making a fuss.

Decades of biophilic design has cultivated an appreciation for things that feel “natural” in a way that involves a very specific, pruned and curated view of what is natural.

Our perception of what is natural is determined by what is perceptible to our senses, our *umwelt*, and not what truly exists around us.

“Domestication is ordinarily understood as human control over other species. That such relations might also change humans is generally ignored”, states Anna Tsing.

The primary example of our spaces attempting to serve us at the expense of all else is clear when we look at the history of sterility in the home.* To mindfully utilize selective sterilization of the home as a mechanism for exerting care appearing as power rather than power that calls itself care, (as typically occurs in the home), will require careful work. But the practice of this kind of design can be a meditative one, where mediating between the needs of the designer and the client allows for a much more suitable manifestation of

collective desires. “Looking at our microscopic companions...suggests dissolving the established borders in design and speculating and imagining other possible futures” (Institute for Postnatural Studies). The highly specialized technology of sterilization that has historically been used as a mechanism for exerting colonial power is much in need of being used for good.

It was not immediately easy, when we started to align our lives so dramatically. At first, I was put off...I do not want to live my life in the dark, and *she* did *not!* want to live her life in the light.

But I came to discover that our needs and desires, while they may be different on the whole, share certain overlaps. I don't see the lifestyle changes I have undergone as concessions, rather, as collaborative practice. As of course, my partner also underwent certain changes in her lifestyle. And in time, I believe, these shifts will serve us both.

Yet fungi (Figure 12.0), our last kingdom of microbes, have composed a symphony of evolutionary delights to which even **the most diehard** adman could not turn a deaf ear. They produce the alcohol in champagne, wine, and beer; from them come the mind-altering drugs psilocybin and LSD; they raise and texture bread, they ripen brie, camembert, thenay, troyes, and vendome cheeses; they flavor soy sauce and miso, and roquefort, gorgonzola, and other blue cheeses; they include not only all the common, supermarket-variety mushrooms, but also the prized truffles, the gourmet chanterelles and morels. Inside plant roots, **fungi perform a service** to all life **by** scavenging nutrients from the soil, **adding to the** nutrition and **splendor of** flowers and trees. Indeed, without the **intimacy** of fungi in the roots of trees there would be no wood.

Lynn Margulis
Microcosmos

Emphasis mine

If humans are defined by imposed hierarchies and creation of specific tools for specific tasks, then mycelia is most prominently defined by a prolific history of collaboration. Through the land and the sea, mycelia has enabled and spread simultaneously. Perhaps the final frontier for our elder evolutionary siblings is the air...

Research has determined that plants such as trees communicate using mycelia as a medium, enabling what has been minted the "Wood Wide Web". There is myriad evidence of cohabitation that is mutually beneficial when it comes to plant life on land, and these networked rhizome systems are debatably the reason we are here today.

In the ocean, the other of Earth's grounded primary domains, mycelia has manifested itself in a somewhat similar way. Lichens are what happens when a mycelial cell bonds with that of an algae. The resulting symbiosis allows the fungus photosynthetic qualities, and the algae to be shielded on a cell scale.

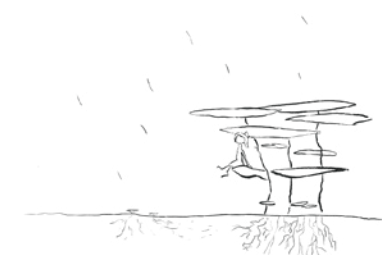
Humans, who have overtaken the air as our domain as we spew out decadencies of carbon into the atmosphere, are the most parasitic of species. When it comes to our relationship to mycelia, we have gained

from countless innovations.

However, our relationship is far less symbiogenic on the surface. Despite our reality of intertwinement, we are determined to kill all other inhabitants (our obsession with cleanliness is one particular example).

Recognition is the first step to knowing you have a problem. Understanding comes next.

We know that the development of a species and development of meaning in our lives both comes from connection. These connec-



an obsession

I fell into one rabbit hole after another.

I wanted to find out how, in a practical sense, this decentering of myself would function. As an environmentalist, I've been aware of the recent media buzz around mycelium as a building material, and I saw the opportunity to kill two birds with one stone—or paint two images with one brush, or sprout myriad hyphae from one spore...but the only way to do some was going to be to grow together.



tions come in the form of species and species co-mingling over generations, or a sudden technological leap to where we are able to utilize a new tool to interact with the world. For a species as esoteric as humankind, a myco-human intertwining can result in the development of collective meaning.

Meaning is much easier to derive when one has help from a friend. From creating a new human being to developing a collection of ideas on a whiteboard, best practices for creating are always in tandem with other people. Our collective knowledge is birthed through countless tiny contributions to it.



FIGURE 12.0
The mycelium network of a
forest floor. Can you
identify the various species?
The mycelium network of a
forest floor is a complex
system of interconnected
fungal hyphae that form a
dense, three-dimensional
structure. This network is
essential for the growth and
survival of many forest
plants and animals.



And we are a product of our collective.

Ursula K LeGuin describes intersubjectivity between humans as "...mutual. It is a continuous interchange between two consciousnesses. Instead of an alternation of roles between box A and box B, between active subject and passive object, it is a continuous intersubjectivity that goes both ways all the time." This is how we create, how we form meaning, how we survive and exist in the world. It is not through directives to inform others ("this is a pipe") that we

develop. It is through the discussion (Is this a pipe?) that emerges.

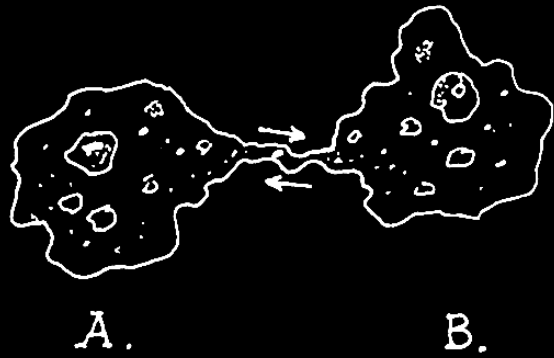
Stephanie Koziej, PhD, explores the collective immaterial and ephemeral through intersubjectivity in an interactive exhibit called Tender Rhythms. The exhibit measures two participants' alpha-brain-wave synchronization, to use neuroscience as a tool to visualize social connection. The exhibit seeks to explore the "...thing we co-create when we really connect with someone... when the distinction between me and the other

pauses..." She uses music to explore affect attunement, communicative musicality, and rhythmicity. The immaterial third emerges out of deep connection with another. The etymological root of tenderness is ten-, ton-, to stretch, to connect. Tune, tone, tantra, tendon. With our new material dialectics, tectonics and tenderness are inextricably linked.

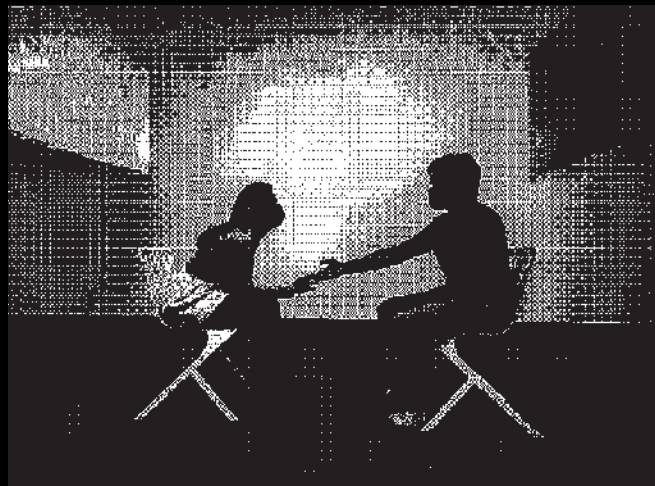
In pursuit of the immaterial third, of tandem rhythms with mycelial network, the domestic model seems like a logical place to start. Not only will the ecological



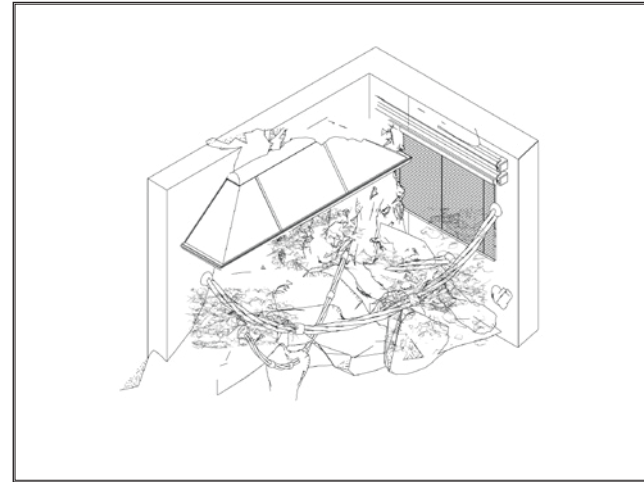
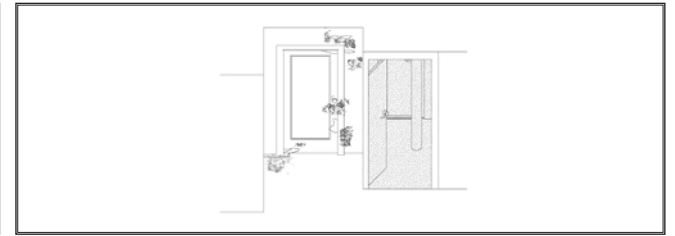
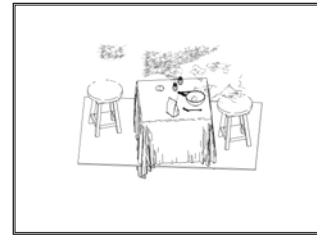
Julieanna Preston
 Becoming Boulder
 "uses gestures of blending in as a strategy to establish empathy between various live material bodies."



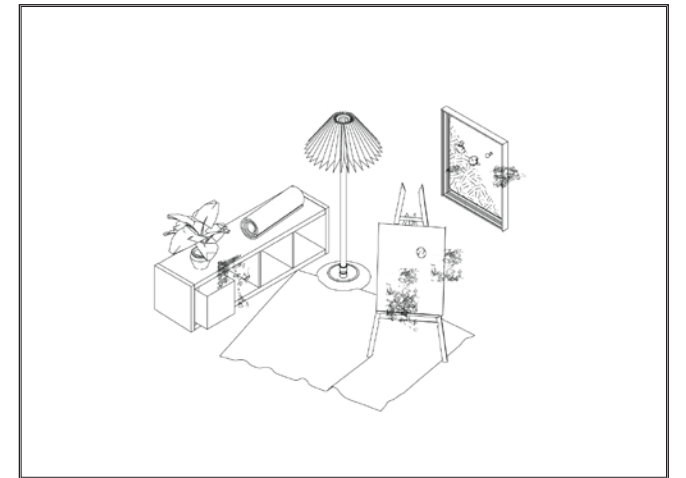
Ursula K. LeGuin
Telling is Listening, Fig. 2



Stephanie Koziej, PhD
Tender Rhythms



benefits abound, the tectonic possibilities emerge, but spending time with something, doing as it does, living as it desires, will naturally result in a *sync* of your experiences, and an emergence of co-creation that neither individual could produce in its own.



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Julieanna Preston, *Becoming Boulder*

Ursula K. LeGuin, *Discussions and Opinions*

thank you so much,
and have a lovely day

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