

Assemblages as Ecologies

Sculptural Collaborations with Subterranean Bodies

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Abstract

In this essay, I draw on my art research and installation 'Earthly Bodies, Subterranean Rhythms' to posit assemblages as ecologies: platforms where specific agencies and interactions occur at different scales, including microscopic levels. Based on documentation images of my creative process, I delve into my experience exploring sculptural building and creative possibilities in more-than-human collaboration. This research involved observing subterranean bodies and temporalities, rhizomatic growth and mycorrhizal interactions, as well as working in interspecies cooperation with oyster mushroom mycelium and wheatgrass roots.

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As spatial practices, architecture and sculpture have developed specific building methods. I expand on assemblage, the building method I worked with, seeking to articulate three lenses: sculptural, material and philosophical. Technically, an assemblage is a piece made by bringing together disparate elements. In this case it consisted mainly of ceramics, different earthly substrates, mycelium spawn, soil and seeds. Borrowing from Bennet's 'Vibrant Matter' (2010), Tsing's 'The Mushroom at the End of the World' (2015) and DeLanda's 'Assemblage Theory' (2016), I reflect on living sculptures as interspecies assemblages: spaces of collaboration, cooperation and contamination between living and non-living bodies, matter and forces, human and more-than human agencies. From this perspective, assemblages are more than the sum of their parts as they have the capacity to re-make and transform us through encounters. Practice-based research is linked with Negarestani's notions of 'complicity' and 'contingency' and considered embodied and intimate.


A polyphony of worlding processes makes the collective architecture we live in: our shared world. Working in interspecies assemblages may enable more respectful and enjoyable ways of collective dwelling.

Dialogues of contamination

As spatial practices, both architecture and sculpture have developed specific building methods. In this essay I draw on my art research 'Earthly Bodies, Subterranean Rhythms'¹ to revolve around assemblage, the building method I worked with, seeking to articulate three lenses—sculptural, material and philosophical²—that prompted me to understand my sculptural assemblages as ecologies. Based on documentation images of my creative process, I delve into my experience of exploring sculptural building and creative possibilities in more-than-human collaboration.

¹ This work was developed in the context of my postgraduate studies in the Art and Humanities MFA at Duncan of Jordanstone School of Art (DJCAD) at Dundee University.

² I first developed this idea in an oral and visual presentation named 'Earthly Bodies, Subterranean Rhythms: Living Sculptures as Interspecies Assemblages' at the Multispecies Architectures Postgraduate Symposium, 1 December 2022, University of Dundee.



Developed in a 'thinking through doing' and do-it-yourself (DIY) key, this investigation was practice-based. Artistic, creative and embodied explorations led me to dialogue with philosophical and ecological concepts that informed the work. I observed subterranean bodies and temporalities, rhizomatic growth and mycorrhizal interactions; I worked in interspecies cooperation with *Pleurotus ostreatus* (oyster mushroom) mycelium and wheatgrass roots in the building of living sculptures. The outcome was a multimedia installation at the 2022 Duncan of Jordanstone School of Art (DJCAD) Masters Show.

Technically, from a sculptural and material perspective, an assemblage "is art that is made by assembling disparate elements," (Tate n.d.) which are "entirely or in part, (...) preformed natural or manufactured materials, objects, or fragments not intended as art materials." (Seitz 1961, 6).

To approach the concept from a more philosophical lens—which could also be thought of as political and material—I borrow from the philosopher Manuel DeLanda, the anthropologist Anna Tsing, and from Jane Bennett, a political theorist who specialises in ecological philosophy.

In her book *Vibrant Matter* (2010), Bennett explains that there are instrumental and naturalised perspectives that conceive matter and other-than-human forms of living as passive or inert. These conceptions, Bennet states, cause us to figure these materialities simply as commodities or resources and "feed our human earth-destroying fantasies of conquest and consumption" (ix). As an alternative, the author's notion of vibrant or vital materiality considers matter and lively things as actants, which is to say that they have sufficient agency and coherence "to make a difference, produce effects, alter the course of events" (viii). However, its efficacy or agency is distributed across ontologically heterogeneous elements: it "always depends on the collaboration, cooperation, or interactive interference of many bodies and forces" (21). Thus, matter or actants never really act alone, but in the form of an assemblage.

DeLanda's *Assemblage Theory* (2016) brings together, analyses and disarticulates Deleuze and Guattari's different definitions of assemblage in an attempt to make sense of this complex theory, while adding his own contributions. DeLanda explains that assemblages "are always composed of heterogeneous components," "can become component parts of larger assemblages," and "emerge from the interactions between their parts" (20–21). Through this perspective, emergence becomes a key notion as it implies that assemblages are irreducible to their parts—they don't 'merely coexist' but rather generate a 'new entity.' The properties of an assemblage are not 'necessary or transcendent,' but 'contingent': "if the interactions cease to take place the emergent properties cease to exist" (12).

Tsing claims, along similar lines, that assemblages are greater than the sum of their parts. In *The Mushroom at the End of the World*, (2015) she proposes that assemblages entail contamination, and this is why they are not a mere gathering of elements: they are gatherings that become happenings. Contamination means transformation through encounter: "We are contaminated by our encounters; they change who we are as we make way for others. As contamination changes world-making projects, mutual worlds—and new directions—may emerge" (27). For Tsing, both collaboration and contamination mean to work across the differences, and they happen within and across species.

Regarding interspecies collaboration in the arts, transmedia artist Ana Laura Cantera explains that in co-creations between human artists and non-human living beings, the parts that are involved cannot be dissolved:

they are fundamental to the creation or piece in formation. Non-humans participate operating and becoming (...). There is cooperation from their very inhabiting of the artwork, the developing of their existence and the adaptation of their life cycles to specific contexts. They are active living beings that operate and have agency, even when intentionality is not involved (Cantera 2022).³

Dialogue across species is possible through observing, listening and spending time with those materials and other-living beings. While in the creative process there is always an attempt to predict potential behaviours of the materials, it is only by assimilating the unexpected—acknowledging a distributed agency—and focusing on the process—rather than on the output—that alliances and collaboration can happen.

Regarding this aspect, the interplay between 'contingency' and 'complicity' explained by the artist, writer and philosopher Reza Negarestani becomes relevant. The author proposes a contingent conception of materiality, in which materials have an autonomy of their own that influences and interferes with the artwork and its processes in spite of the artist's decisions. "Contingency is the concomitant expression of possibilities (...) anything can happen, but equally, nothing might ever happen; it is the simultaneous suspense of infinite likelihoods and inexplicable frozenness" (Negarestani 2011).

Complicity is the artists' willingness to embrace and engage with the contingency of the materials they work with. This does not mean that they approach the artwork with 'creative openness' or total material experimentation. Instead, it refers to a 'rigorous closure' to the artwork that enables its contingent materials to reveal themselves while opening the work beyond its confines. According to Negarestani, complicity "reformulates the rigorous

³ My translation.

closure of the work as a narrative plot where contingent events unfold, where unpredictable twists take shape and where the work becomes the subject of experimentation of its own materials" (Negarestani 2011).

Complicity gives the artist the speculative opportunity to see the work as the reflection of contingent materials on themselves, their secret collusions, conspiracies, antagonisms, indifferent attitudes, and their weird twists in and out of the possibilities they bring about (Negarestani 2011).

I started to work with the concept of living sculptures during my undergraduate and further expanded on them in my thesis and exhibition '*Permanecer y Transformarse*' [To Remain and Be Transformed] (2018) as vital situations with their own requirements, relationships, rhythms; mutable processes with a fragile, living and dialectic temporality. The concepts and theories explained above are the main conceptual lines that, in dialogue with my art practice, led me to understand my living sculptural work as interspecies assemblages and as ecologies: spaces of collaboration, cooperation and contamination between living and non-living bodies, matter and forces, human and more-than-human agencies.

Sculptural building and creative possibilities in more-than-human collaborations

Living soils



Figure 1. 'Channels and Connections/ Wood Wide Web.' Artist: Deepika Nandan.

While “mushrooms dominate the popular fungal imagination,” (Sheldrake 2020) the fungi kingdom is remarkably broad and diverse, and merely a “10 percent of (known) fungi produce mushrooms” (Lim and Shu 2022, 23). The species that actually produce mushrooms are called macrofungi, while the “overwhelming majority that don’t form sporing bodies are called microfungi” (23).

Thus, even if mushrooms are the component we humans are more aware of, they are just one piece of a bigger whole: the visible parts of the (macro)fungi that grow overground. They are sporing or fruiting bodies. “Fungi use spores like plants use seeds: to disperse themselves. Mushrooms are a fungus’s way to entreat the more-than-fungal world” (Sheldrake 2020).

Mushrooms are made of hyphal strands, “networks of many cells known as hyphae” (Sheldrake 2020). Hyphal strands also form the mycelium, which is the fungi’s component that grows underground, in logs of trees, or into decaying or dead matter. “Mycelium describes the most common of fungal habits, better thought of not as a thing but as a process: an exploratory, irregular tendency. Water and nutrients flow through ecosystems within mycelial networks” (Sheldrake 2020).

In some species of fungi, the mycelium extends in huge and entangled webs under the ground, forming connections with plants’ roots that are called mycorrhizal relations. Through them, plants and fungi share nutrients and information, they compete and collaborate (Figure 1).

This sparked curiosity in me. What is happening under our feet that we cannot see, but still supports us? Can we humans learn from the interspecies entanglements that take place in the living soil? How could we interact with them with our differences? Is it possible to creatively collaborate in building together? How do subterranean bodies decay, grow and build relationships, space and time? What does a rhizomatic body—like roots or mycelium—encompass? Which are the limits, if there are any at all, in a body that grows rhizomatically and entangles with others?

Tangible encounters

Practice-based research has proven to be a fertile ground for exploring and developing interspecies interactions and ecological conceptions and actions. During my investigation, I came across interdisciplinary projects that became relevant for my practice. One powerful example is ‘Arachnophilia,’ the research-driven community that emerged from artist and architect Tomás Saraceno’s work regarding spider/web architectures, biomaterials, behaviour and biotremology. Aware of the so-called Sixth Mass Extinction, the broad aim of ‘Arachnophilia’ is to surpass the

usual repulsion towards spiders (arachnophobia), by shifting “how people value these relations—how we notice, connect with and care for our arachnid kin” (Arachnophilia n.d.).

Jae Rhim Lee's current research, the 'Infinity Burial Project,' revisits Western conceptions and rituals around death and post-mortem bodies. “Featuring the development of a unique strain of mushroom that decomposes and filters out the toxins in human tissue,” the project looks into human–fungi relations in order to develop “an alternative, ecologically conscientious form of burial, promoting a more personal engagement with the process of decomposition” (FACT, n.d.).

Embodied and experimental methods are also practised by the architectural firm ecoLogicStudio, “where each project becomes a laboratory, a real test bed of future models of inhabitation of the Urbansphere” (ecoLogicStudio n.d.). Described as an urban curtain, their installation 'PhotoSynthetica Curtain' (2018) worked with the “power of algae to absorb carbon dioxide from the air” and store it in real time. The system “demonstrates how biotechnology can become integrated in our cities to help achieve carbon neutrality” (ecoLogicStudio n.d.).

The sculptural lens in my inquiry into the subterranean world, the ecologies that it hosts and rhizomatic growth opened up a question about physical bodies, their limits and their encounters. Where does a body end, where does a body begin? Which are the boundaries between bodies of different species? Are such boundaries stable or dynamic?

Aiming to understand the growing processes of fungi and my possibilities of interaction with them, for five months I explored a diversity of moulds, containers and structures of different shapes, materials and textures. I tried cardboard and paper, ceramics and 3D printed PLA (Polylactic Acid). Over the course of a year, I attempted to grow different fungi species, such as *Hericium erinaceus* (lion's mane) and *Ganoderma lucidum* (reishi): with successes and failures, each process of cultivation took between four and six weeks, and some of these explorations are still in progress.

Based on what I learnt along this material and formal research, I decided to work with clay in two human-scale structures that would later become liveable spaces for *Pleurotus ostreatus* fungi.



Figure 2. Photogram of 'The Body Itself as a Perspective' (2022), an audiovisual piece that was part of my research and installation. It was filmed at the DJCAD Clay workshop facility.

Clay interested me due to its earthly quality. Furthermore, working with clay implied a direct physical, material and tangible connection between my own body and the sculptural bodies through touch and movement. In this sense, the conception of vital materiality resonated and accompanied these human–clay interactions: “if matter itself is lively,” Bennett suggests, “then not only is the difference between subjects and objects minimised, but the status of the shared materiality of all things is elevated. All bodies become more than objects” (Bennett 2010, 9). The scale of the work intensified this relation (Figure 2) and what, in Negarestani’s terms, we could call clay’s autonomy. With one sculpture being 220 cm tall and the other 130 cm, I had to move around them, change my perspective and my body position in order to build them. Clay’s contingencies marked the pace and possibilities of the building process. Its temporality—regarding its plasticity and humidity/dryness—and its weight—that challenged my physical endurance—were the main factors that either allowed me to keep on building or threatened with collapse. The process was possible through a corporal dialogue of coordination and motion—almost like a dance—and through sensitive observation and touching infused with patience, caring and waiting times.



Figure 3. Texture's detail on one of the fired ceramic modules.

Aware of the rhizomatic way in which fungi bodies structure, I gave the clay pieces a relief where I considered the mycelium would grow better: a rough texture with holes that it could grasp on to and entangle with. Once the pieces were built and texturized, I divided them into modules in order to be able to manipulate them and fit them into the kiln. Pieces were fired to biscuit (1020°C) so that the ceramics maintained a certain porosity. This would become useful at a later stage for keeping the pieces humid, allowing fungi to grow (Figure 3).

Building by decomposing

As I mentioned above, I worked with *Pleurotus ostreatus* for this project. Commonly known as Oyster mushroom, *Pleurotus ostreatus* is a saprophytic fungus. The etymology of 'saprophyte' derives from the Greek *saprós* (rotten, putrid) and *phyton* (plant). By breaking down decaying or already dead matter, saprophyte fungi "recycle and make available nutrients that would otherwise be locked up into dead matter" (Lim and Shu 2022, 28) and bring them back into the ecosystem. "That ability plays a critical role in the carbon cycle by enabling the release of carbon dioxide from decaying organisms, and it transforms plant organic matter into substances that both fungi and other organisms can utilise for nutrition" (Wilson 2018).

Pleurotus ostreatus decomposes organic matter, feeding mainly from lignin and cellulose without any previous biological or chemical treatment (Alder and Zubillaga 2020, 11), even if the

matter is poor in vitamins and nutrients. This allows this species to be cultivated in a broad arch of substrates that are often available in our human daily diet, in our waste or in our close surroundings. As well, since very technical or lab equipment is not essential, it is possible to cultivate *Pleurotus ostreatus* in a DIY key.

DIY is a widely-used method by artists working in interspecies alliances that involve processes that exceed art traditional techniques. For example, artist Kuai Shen Auson expands on the use of his "own 'do-it-yourself technology' in sort of a 'trial-and-error' fashion" (Auson 2011, 63) when working in a human-ants relation for his artistic research and audiovisual installation, 'Oh!m1gas':

The learning curve has been difficult, as dealing with living beings that do not speak your language can be frustrating. (...) keeping tropical ants alive simulating their original environment implies dedication, time and commitment. (...) Nevertheless, the lessons learned from the mistakes I committed have left me with a great deal of knowledge. It has indeed become an obsession that has taken me on fascinating field trips (mentally and physically) to discover the relationships and differences between the myrmecologic microcosmos and the human perception of the world (Auson 2011, 63).

Furthermore, artists, architects and designers working in the areas of biodesign and biomaterials share a vision of knowledge accessibility. With a free source political conception, many platforms and discussion forums have been created for experiences and recipes exchange—e.g., 'The Future Materials Bank' and 'Materiom.' However, usually a component of transformation arises in following these recipes, moving beyond direct application. These collectivisations of experiences could be conceived as assemblages and ecologies between people and practices, species and territories.

My material research was potentiated particularly by the biofabrication with mycelium protocol (Cantera 2020) developed by the transdisciplinary collective Mycocrea; and Biology Studio's '*Siembra y Programación*' [Sowing and Programming] (Medina 2022). It was also encouraged by the 'Material Atlas,' (Leboucq 2019) where the creators of the Growing Pavilion (BioBased Creations) share "knowledge about smart and environmentally responsible construction" (51). The authors explain that working "with naturally grown and locally sourced materials is a choice to minimize the impact on the environment and to explore the path to a fully biobased future" (51).



Figure 4. Collages made with photographs and microscopic pictures of the collected substrates. From right to left, substrates are yerba mate, autumn leaves, grass, peanut shells. These images were used for *Earthly Textures* (2022), an artist book that was part of my research and installation.

Along these lines, and grounded in the territory I live in, I looked at my surroundings to locate possible substrates that contained cellulose. In autumn, I found tree leaves on my daily walks. I collected yerba mate from my everyday diet. Peanut shells were an occasional food waste I produced. Eventually, I also encountered grass clippings. For months, I paid attention to these elements that would have ordinarily ended up in the bin, increasing the volume of urban waste. Instead, I collected them, dried them and stored them (Figure 4).

Once I had sufficient substrates collected, and the sculpture modules were fired, I proceeded to the 'inoculation' stage. This phase consisted in mixing *Pleurotus ostreatus* mycelium spawn with the stored substrates. Inoculation is a very delicate stage, and all possible hygiene and safety measures need to be taken. I pasteurised the substrate by boiling it, to then mix it with the mycelium spawn, covering each ceramic module with the mixture.


Next, I placed all the inoculated modules in a dark and humid environment where, by feeding from the autumn leaves, the dried grass, the yerba mate and the peanuts shells, the mycelium started to grow from the spawn, filling the space with its whiteness. "Mycelium is how fungi feed. (...) The difference between animals and fungi is simple: Animals put food in their bodies, whereas fungi put their bodies in the food" (Sheldrake 2020).



Figure 5. White mycelium hyphal strands decomposing and feeding from an autumn leaf.

As weeks went by, interactions occurred at different scales, on both macro and microscopic levels (Figure 5). In gradually decomposing the substrate items, mycelium grew entangled with the ceramic pieces by filling the holes of their texture. As it grew, mycelium assembled the diverse material components together in a rhizomatic living weaving that held itself, the ceramic and the substrates together.

This process of whitening implied a certain level of material homogenisation through substrates' decay, while increasingly defining each module's spatial boundaries through mycelium expansion. Whereas in terms of mushroom cultivation this stage is named colonisation, in assemblage theory it could be analysed as a process of territorialisation. DeLanda explains the degree of territorialisation (or de-territorialisation) as one of the two parameters that characterise assemblages. "Territorialisation refers not only to the determination of the spatial boundaries of a whole (...) but also to the degree to which an assemblage's component parts are drawn from a homogeneous repertoire, or the degree to which an assemblage homogenises its own components" (DeLanda 2016, 22).



In 'Undercover Softness: An Introduction to the Architecture and Politics of Decay,' Negarestani elaborates on decay as a building process. Through complicity between time and space, "everything is collectively mobilised by and toward putrefaction" (Negarestani 2012, 413). Decay connects discrete elements in a progressive softening of forms that lose their limits to dissipate in the environment where the rotten object is nested. Decay, however, "imposes a perpetual deformability on the formation without completely erasing its ontological registers (...) without eventuating in radical erasure or complete transformation" (410). This was the case with the sculptures, where, even if the substrates were decomposed by and integrated into the mycelium in a process of homogenisation, their shapes remained in the texture, which was not completely uniform.

Coding (or decoding) is the second parameter explained by DeLanda. It refers to the degree in which 'special expressive components' (mainly, chromosomes and languages) fix the identity of a whole. For Deleuze and Guattari, assemblages operate where "the coding parameter is low, as when animal behaviour stops being determined by genes, or when human behaviour ceases to be fully specified by written norms" (DeLanda 2016, 23). Therefore, a higher degree of decoding implies that behaviour is not rigidly programmed and enables more flexibility. The hybrid character of the sculptures—which involved biotic and abiotic, designed and recycled elements, shapes and materials—along with the certain level of artificiality of the context—an environment in-between an art studio, a laboratory and my home—provided a 'decoded milieu,' one made of a diversity of expressive components and natures that do not usually come together. Thus, the identity of the sculptures was not (fully) defined by codes or norms but, instead, emerged through the moment-to-moment interactions among their heterogeneous components. The emergent properties, features and alliances of these sculptural assemblages were specific to their very own ecologies.

The rhythm of a space



Figure 6. 'Shape of Continuity' detail (2022). Image Credit: Sherry Trimon.

Working with living others requires time. Time to listen, to observe, to get entangled and understand our own and others' cycles and living processes. Time to cultivate, time to grow, time to imagine and explore ways of communication in order to co-create together. Working with living others broadens temporal existences. Tsing (2015) reflects on progress as the temporal frame we humans are embedded into; as a driving beat that pushes us in a forward march that prevents us from looking around and from hearing temporal patterns that never fit in the progress timeline. Along these lines, working with living others allows experiences that overcome hegemonic and (exclusively) linear temporalities, while concurrently expanding perceptions of space.

My research implied noticing a diversity of biotic and abiotic rhythmicities that were sometimes divergent, occasionally clashed and other times were attuned. Aiming to better explain her concept of assemblage, Tsing borrows from music the word 'polyphony.' Made from simultaneous and autonomous melodies that intertwine, in polyphonies moments of harmony and dissonance happen. "Patterns of unintentional coordination develop in assemblages. To notice such patterns means watching the interplay of temporal rhythms and scales in the divergent lifeways that gather" (23).

If temporality had been so present during the creative process, how could I better share this duration spatially with the audience? At what pace was I going to invite the audience to interact with this artwork? How would people share time and space with the sculptures? Which direction were they going to walk in? What are the rhythms of a space?

With these questions in mind, and further diving into the subterranean world, I worked in collaboration with roots (Figure 6). With them, I followed the rhythm of the space where my work was meant to be shown later on.

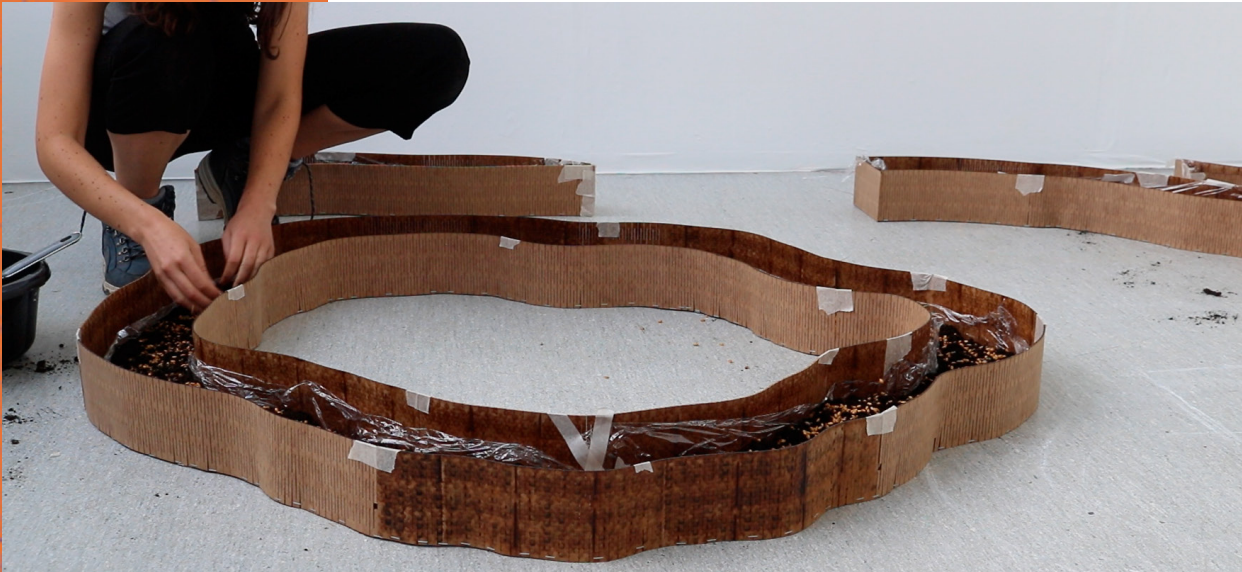


Figure 7. 'Path of Continuity' in process. Photograph of 'Care as a Method' (2022), audiovisual piece that was part of my research and installation.

I drew organic shapes on the floor by imagining a potential path, a rhythm. By following these forms, I designed and built moulds with laser cut MDF. A vertical line pattern cut in the walls enabled me to shape them easily. I filled them with soil and planted wheatgrass seeds (Figure 7).

Grass thrived above the surface, while roots grew strongly below, copying the moulds in a very accurate and resistant way—making it easy to demold the pieces. Again: a powerful rhizomatic body assembling, holding together, drawing in space and shaping it.


Gatherings and ecosystems



Figure 8. Earthly Bodies Subterranean Rhythms, installation at 2022 DJCAD Masters Show.



Figure 9. Detail of fructified mushrooms on sculpture.



After around four weeks of the mycelium growing in the darkness, and three weeks into the development of the roots, I set up the installation by re-assembling the ceramic–fungi modules into sculptural wholes—*Fungi Assemblages*—and surrounding them with the roots' structures—*Shapes of Continuity* (Figure 8). In this stage, the several assemblages that had been built separately became components of larger ones—what DeLanda's calls 'assemblages of assemblages.'

In this reconfiguration some interactions were transformed, others were potentiated. Also, new relations started to happen between sculptural work and diverse elements of the installation, such as the audiovisual documentation, artist books, and the very exhibition space. The daylight and brightness of the room, the fresh air, the temperature conditions, along with other factors, resulted in mushrooms fructifying on the sculptures (Figure 9). As the days went by, it was possible to witness changes of both living and decaying processes in the artwork: assemblages are not stable, "the polyphony of the assemblage shifts as conditions change" (Tsing 2015, 158). Actants modify their relations and are modified by them through time. Described by Bennett as "event-space" and "open-ended collectives," an assemblage "not only has history of formation but finite life span" (Bennett 2010, 24). Hence, assemblages are not about results but processes.

'*Earthly Bodies, Subterranean Rhythms*' emerged from what Bennett explains as a distributed agency. Every living and non-living element involved in the creative process of this research had a certain degree of agency that enabled the sculptures and the exhibition to exist in their very particular way. Along these lines and drawing from Deleuze and Guattari, Thomas Nail explains that a common feature of all assemblages is *personae* (agents):

Personae do not transcend the assemblage but are immanent to it. They are not the origin of the assemblage and do not control or program the assemblage in advance. Rather, personae are the immanent agents or mobile positions, roles, or figures of the assemblage (Nail 2017, 27).

Personae are then "collective subjects of an indefinite event," where the individual elements "are not nonexistent, but rather secondary" to the collective 'we' immanent to the assemblage (Nail 2017, 27).

The notion of ecology comes into play, as it studies the interactions "between organisms and their physical environment within an Earth–System context" (Chapin, Matson and Vitousek 2011, 3). In these interactions, living and non-biological elements, as well as matter cycles and energy fluxes, are considered. "The environment of an organism consists of all those factors and phenomena outside the organism that influence it, whether these are physical

and chemical (abiotic) or other organisms (biotic)" (Begon and Collin 2021, xi). Used for the first time by Ernst Haeckel as *Ökologie* in 1869, the term derives from the Greek *oikos*, meaning 'house, home, dwelling place.' "Ecology might therefore be thought of as the study of the 'home life' of living organisms" (ix) and thus it is closely related as a term to both 'assemblage' and 'architecture'.

In this case, the mycelium grew in a specific shape because it interacted with the ceramic and the substrates that gave a specific texture to the sculpture. The darkness allowed the mycelium to grow, while the bright space allowed mushrooms to flourish. Roots grew, copying the shapes of moulds, and once de-molded, they stayed together because of their rhizomatic structure and the strength of the connections they formed with the soil and within themselves. During the show, the audience brought their physical bodies to play within the space—their movements, reactions, thoughts and experiences became part of the assemblage.

It is in this sense that I posit the living sculptures I worked with as interspecies assemblages, as ecologies: platforms where specific agencies and interactions coexist, occur and emerge at different levels. Ecosystems that involve matter and energy fluxes, biotic and abiotic actants. Gatherings in which each being, each element, each piece of vibrant matter that formed the sculptures—me included—affected and was affected, acted and was transformed by encounters and interactions, through collaboration and contamination.

'We': a place to begin

Through architecture, liveable spaces are designed, built and inhabited. It is possible to conceive the world we live in as a collective architecture, with a powerful and fragile structure and balance that involve multispecies agencies. A polyphony of worlding processes makes our shared world.

Through sculpture, we build, play, create; we can touch and imagine possible worlds or even reframe the one we know. In my work, I explored an interspecies building method in an attempt to bring to the fore that we humans can learn from and co-create with other living beings.

Working in interspecies practice-based terms opens a question about the tension between control and uncertainty—despite the expectations for a sculpture to live and grow, there is a constant threat that nothing will happen at all. In my experience, however, attempts of control have proven to be an unsuccessful method due to life's indomitability and agencies' plurality within art processes. Instead, it is through dialogue and material complicity that living artworks are likely to emerge. Intimacy—closely dancing with the notions of noticing, care, embodiment and attunement—also

became essential for my work to happen and thrive. Assemblages are site, temporal and personae-specific. Not every human will relate in the same way with a certain species of fungi, and no experience will occur twice.

Co-creating, co-building in more than human cooperation implies observing, listening and learning from other species and about our very own. Interspecies collaboration shatters the fiction of humans as unique isolated bodies inhabiting abstract spaces. It shows, instead, that we are part of a deep ecology. We not only coexist but also co-depend on specific relations, contexts and territories. In this ecology, in this assemblage, in this *oikos*, in this architecture, we humans are neither the only inhabitants, nor the only builders.

“For living things, species identities are a place to begin, but they are not enough: ways of being are emergent effects of encounters” (Tsing 2015, 23). Working in more-than-human assemblages may be a platform to build not only sculptures but also collective knowledge across species, to recognize the life-sustaining importance of a “we” upon isolated individualisms, to co-create more respectful and enjoyable ways of collective dwelling.

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