

Feral Labs Node Book #3

FA

FA

FUTURES

Feral Labs Node Book #3

DIGITAL EDITION

Dalila Honorato
Iakovos Panagopoulos
Tina Dolinšek
Uroš Veber
(eds.)

Zavod Projekt Atol
2026

CONTENTS

6	The Primer to Fa Fa Futures (Prologue) Dalila Honorato, Iakovos Panagopoulos, Tina Dolinšek & Uroš Veber	
	I — Feral Ecologies & Decolonial Practices	II — Feral Labs, Communities & Artistic Methodologies
20	Experiments in Land and Water: Indigenous, Feminist, and Decolonial Traditions Prathima Muniyappa	106 Feral Conditions and Rural Futures: Engaging Hybrid Communities through Arts Engagement and Feral Lab Practices Emma Hallemans, Anna Isaak-Ross, Rita de Almeida Leite & Marta de Menezes
62	Rewilding Animism – Doing It With More-Than-Human Others Veroniki Korakidou	128 Projekt Atol: Practices for a Planetary Now Sabina Oroshi
84	Life-Art-Technology Beyond the Laboratory: Organological Practices, Poetics of Care, and Decolonial Perspectives Matheus da Rocha Montanari	142 Slow Travel, Symbiocenic Families and Re-Wilding Culture Gatherings towards Glocal Kinship Sergey Dmitriev & Andrew Gryf Paterson
		156 Why Was the Sea Serpent There? Steffan Jones Hughes
		160 What Making Tools Taught Me about Making Cultures Irene Posch
		172 Living Future: Biotechnological Aesthetics for New Ecological Imaginaries Mario Savini
		186 Nebulas, Forms, Forces: Lens-Based Perspectives Chelsea Coon
		196 Wet Witches and Rewilded Biotech: Bastard Protocols for How to Grow a Homunculus (Badly) WhiteFeather Hunter

III —

Critical Reflections &
Artistic Interventions

FERAL ARCHIVES

222	Permission to Be Ridiculous: Field Notes from a Scientist Turned Artist Clare Stott	310	Rewilding Cultures Project on the Path of Sustainable Practices Tina Dolinšek
236	Feral in the Face of Overtourism: Approaching Corfu From Within Sophia Vrioni	322	Rewilding Cultures Mobility Conversation
246	Manualism: Knowledge Through Touch — Tactile Boards as Tools in Artistic Pedagogy Martyna Groth	342	Feral Residencies
258	Feral Energy Infrastructures Camila Torralbo	353	Feral Labs and Beyond
276	Bioart Biopsy: Shared Specimen Obtained Adam Zaretsky	408	Partners Organizations
284	Legal Battle against Political Abuse of Art: Interview with Maja Smrekar Maja Smrekar & Ewen Chardonnet	409	Colophon

Dalila Honorato, Iakovos Panagopoulos,
Tina Dolinšek & Uroš Veber

The Primer to Fa Fa Futures (Prologue)

Dalila Honorato, PhD, defines herself as a facilitator of safe spaces, fostering the convergence of ideas on liminal issues within the realms of Art & Science. She is the creator of the Taboo-Transgression-Transcendence in Art & Science, aka TTT conferences, and a co-founder (with Marta de Menezes) of the project FEMeeting: Women in Art, Science, and Technology. She is the principal editor of the open-access TTT proceedings and co-EIC at the Technoetic Arts journal (Intellect). She is also the director of the Interactive Arts Lab at the Ionian University.

Dr Iakovos Panagopoulos is an Assistant Professor at the Department of Audio & Visual Arts, Ionian University. An academic filmmaker and award-winning director, he researches film practice and media studies, and has published internationally. Currently, he is the Head of the Student and Educational Programme of the Peloponnisos International Documentary Festival.

Tina Dolinšek is an independent new media art producer, curator, and cultural facilitator. She has collaborated with numerous Slovenian cultural organisations, contributed articles to various local media outlets, and edited several DIY art tutorials and booklets. She initiated the artistic research and production camp PIFcamp, which she has been leading ever since.

Uroš Veber leads the Projekt Atol Institute. Most of his work focuses on international productions in contemporary art, citizen science, and informal education. He co-runs two small music labels. He also serves as president of Asociacija, the Association of Arts and Culture NGOs and Freelancers of Slovenia, where he primarily works on cultural advocacy.

When we joined the Rewilding Cultures adventure, a few as fresh starters, others as veterans, it was 2022, and the Feral Labs Network legacy was epic and beautifully described in the first publication of the series *Feral Labs Node Book*, prophetically entitled *#1 Rewilding Culture* (Berger et al. 2021), released in March 2021. In the chapter Going Feral, Luis Campos wonders about the need for a theory of the feral: “We need only serendipitous inspiration from an assemblage of possibilities” (Campos 2021: 34). This was the starting point of this third volume entitled *#3 Fa Fa Futures* (Honorato et al. 2026), following *#2 Feralities* (Billimore et al 2024).

It is never too much to wonder about the object of these publications as part of the Feral Labs Network activities. Only a few things are the result of parthenogenesis (Mittwoch 1978), and, to a few readers, this moment might be the first contact with this initiative. Let us try to delimit what the meaning of Feral Labs is: “Feral Labs are events of transdisciplinary nature” organised by “a network of temporary dislocated hubs” (Feral Labs n.d.). Even without a concrete categorisation of what the layers of the “rewilding” process are, when the “feral” is applied to cultures, one may recall a common plot factor function in media art narrative.

Did we promise an epic? And so it happened; in the beginning, there were camps, summer schools, field trips, and retreats. For a decade, the world was witnessing the rise of maker culture across Europe, and the growth of Creative Hubs, Fab Labs, hackerspaces, and innovation centres. All, without exception, were dedicated to communal education, lifelong learning, and culture sharing guided by values related to peer-to-peer exchange, open-source practices, DIY and DIWO ethics. Different concepts used by multiple initiatives to name identical meanings, denoting spaces where emphasis was given to processing through the action of doing. What today could be defined, in short, as play spaces led by a strong awareness of the value of playing in relation to individual creative experimentation and to the development of human cultural artefacts.

Practically speaking, when designing a Feral Lab, one should focus less on visibility, outputs, and metrics and instead prioritise paths, processes, and the conditions that allow creativity, research, and learning to emerge. Since there are many forms of play, let’s try to define it through a game. Pause and Rewind then Play, 65 years ago, Roger Caillois begins his book *Man, Play and Games* (1958/2001) quoting Johan Huizinga’s definition of play in *Homo Ludens*, according to which “play is a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding; having its aim in itself and

accompanied by a feeling of tension, joy, and the consciousness that it is ‘different’ from ‘ordinary life’” (Huizinga 1955: 28). Should we continue?

Rule no. 1: About Time. A principle incorporated in the Feral Labs methodology, when proposing one- to two-week-long annual or biannual gatherings, being present (fully aware and engaged) in a common space, among others, is a demanding subject, defined by intensive time, in a limited frame. Clearly, now, play is serious and soaked in controversy. When freedom is being served, raw on the table, this suspension of the well-known path may either invoke past illusions of disclosure of a given structure or seek the application of a previously experienced order (and sometimes both). Because, well, you see, the player is not a spectator (Rousseau 1758/1959: 19, 25). Unproductive: only without the undermining stress of fabricating finalised objects ready for dissemination can “play” happen. Therefore, from a strictly qualitative point of view, labs that run wild are labs worth running. Too fast? Labs that clone themselves, in a boring generative reproduction of repetition or according to a recognisable quick laundry cycle formula, are doomed to limiting their game to unreachable dimensions because there is no spontaneous and meaningful connection between possible surrounding players. These so-called entertaining events may sell more places but have a shallow outcome. The impact factor in play is revealed through the possibility of being committed to letting information flow, where failure is a human right, as well as redirecting oneself if needed. Because the ideal is never real, many things can go wrong, and sensitivities will be constantly tested if one has a pre-designated game strategy or outcome expectations.

Rule no. 2: About Gravity. In the same way that reinforcement and punishment contingencies are part of the behaviourist agenda when dealing with individual motivation and stimuli, controlling the narrative to provide specific, pre-designated, likeable experiences (which is possible through careful design) is disingenuous creative art production. In such a case, this would not be “play”, characterised by self-organisation, non-hierarchical forms of collaboration, and often self-assembled programmes, but a service provided to a client demanding a specific degree of satisfaction based on a pornographic non-disclosure monetary exchange agreement. Beyond budgeting, under limited time of intense exposure conditions, care comes from being able, as organising agencies, to incorporate support for co-creative participants’ intra- and inter-processing within the facilitating structure. Honestly, to give a shit when one is losing it, because, WTF, it is hard to reach the sublime as individuals, but somehow to willingly click

together creates momentum, when the group reaches the aim of solidifying a common grammar of trust, and its members stick around even if they are under the weather. Organically, compassionately, with integrity: sometimes this is the way long-term collaborations are cemented.

Rule no. 3: About Space. Another principle incorporated in the Feral Labs methodology is the understanding of the importance of remote space to create a sense of release, equality, and solidarity, besides the expected tension and controversies that match permanence in uncanny groundings. In Feral Labs, urban centres and institutional spaces are replaced with (to a certain degree) remote locations in the mainland or coastal areas, because sometimes (without fantasies of untouched paradise islands), abandoned dystopian sites are the most romantic spots to reboot realism. As the same unfamiliar site, at different times and in various contexts, can become recognised and populated in multiple ways, it is essential to provide a sense of detachment from what is personally known. This allows for a focus on what is perceived, perhaps for the first time or with an unencumbered mind, free from everyday concerns. Space is a holder of possibilities and the texture where energy flows. To walk a path with full attention, in multisensorial deep listening, one must be elevated by the transcendence of recognition and reattachment, to be lost in wandering inside the no-spaces of one's own break room.

Rule no. 4: About Light. Calcification is not part of the vocabulary within Feral Labs methodology. As their knowledge is grounded in the terrains where they take place, advocating hacking beyond computation, these networks are porous to shifting from purely screen-based interaction, engineering, and construction into aggregating environmental sensing, field work, bodily presence, strategies of care, cultivation, and repair. The Feral Labs Network itself is based on partnerships formed among organisations that, despite their different contexts and methodologies, are united by their interest in promoting non-hierarchical co-creative research practices as well as accessible and sustainable educational platforms, committed to the open dissemination of knowledge and fair attribution of contributions, which highlights the publication of processes as much as results. This is the foundation of the Node Books format, developed within the Feral Labs Network with the conviction that neither transdisciplinary art-science nor field-based contexts develop linearly.

The Node Books

The Node Books express a variety of verbal and symbolic narrative styles: from theoretical reflection, artistic research, and ethnographic accounts to visual documentation, methodological notes, and speculative essays. Their common point is to contain a degree of practice-based content. Each segment is an individual contribution that can be perceived independently but gains a wider meaning through its relations to other parts of the publication, as interconnected nodes at a microcellular level. Intentionally, the Node Books establish bridges, interconnecting and cross-connecting new and previous contents, in continuity and disruption: as a challenge to pause and review the new meaning brought in by each volume. Within the context of Feral Labs, the Node Books resist the logic of completion. Each volume brings a renewed continuity to comprehend—in a physically tangible way—the structure of the network established by eight partners: Projekt Atol (SI), Bioart Society (FI), Cultivamos Cultura (PT), The Culture Yard (DK), Ionian University (GR), Makery (FR), Radiona (HR), and Schmiede (AT). With full awareness of the work developed within the framework of the project Rewilding Cultures (2022–2026) by the Feral Labs Network under Creative Europe, the editorial task is to sustain fluency, permeability, and heterogeneity. As nodes, unfinished, adaptive, and alive, as readers, we can only wonder what will be the theme of the next volume. The three *Feral Labs Node Books* already published trace the emergence, articulation, and operationalisation of seven years of feral practice. Each volume corresponds to a time lapse, but as a node, within the evolving ecology of Feral Labs and Rewilding Cultures, like a spiral, returning and shifting, offering a way to relate with feral practices and leaving space for the work ahead: from grounding (*Rewilding Culture*), through proliferation (*Feralities*), to modulation (*Fa Fa Futures*).

Feral Labs Node Book #1: *Rewilding Culture*. The first volume introduces ferality as an orientation and a necessity merging from transdisciplinary practices that resist categorisation, privilege process over product, and take place within temporary, situated communities. It functions as a genealogical and methodological anchor, articulating why Feral Labs exist and what kinds of conditions they seek to cultivate.

Feral Labs Node Book #2: *Feralities*. The second volume foregrounds ferality as a positionality and a practice understood as something enacted, inhabited, and negotiated rather than defined. Through heterogeneous forms and voices, it explores ferality as a process,

as a refusal, and as a way of working otherwise, tracking the network's thinking-in-motion and opening it to new affiliations and perspectives.

Feral Labs Node Book #3: *Fa Fa Futures*. The third volume is concerned with asking what feral practice demands when it encounters institutions, infrastructures, bodies, crisis, and law. It gathers practices that engage with accountability, survival, and continuation, where ferality becomes operational for sustaining care, negotiating constraints, and continuing work beyond the life of a funded project.

Fa Fa Futures

The second of two node books within the Rewilding Cultures cycle, *Fa Fa Futures* was conceptually launched in June 2025 with an open public invitation for international book chapter contributions. The theme, originally inspired by a Talking Heads' tune dedicated to anxiety and emotional disconnection, revealed itself in a Slavic context as a double entendre related to oral fixation. Qu'est-ce que c'est? Yes, a disparity of provocative symbolism, as futures are plural, and failures are "in everything, that's how the light gets in" (Cohen 1992). Editorially structured in three rhizomatic parts, *Fa Fa Futures* holds ferality as a cosmopolitical practice, moving between indigenous epistemologies, feminist technoscience, institutional critique, artistic research, and infrastructural survival.

Part I: Cosmopolitics, Care & More-Than-Human Methodologies establishes the conditions under which knowing becomes possible, bringing ferality into focus as cosmopolitical, relational, ethical, and irreducibly situated.

In **Prathima Muniyappa's** chapter, land and water are treated as epistemic agents, and storytelling operates as a method and responsibility, drawing on Indigenous, feminist, and decolonial traditions that demand accountability to a place (Muniyappa 2026).

In her chapter, **Veroniki Korakidou** activates cosmopolitics in practice through animism and relational ontology. Here, more-than-human relations unfold through assemblages in which materials speak, machines participate, and art becomes a living process (Korakidou 2026).

Through technobiodiversity, **Matheus da Rocha Montanari** reframes care as plural, situated, and decolonial, proposing alliances and conceptual displacements, and asking what Latin American perspectives can offer to a European-based project (Montanari 2026).

Part II: Institutions, Communities & Situated Ecologies reveals institutions as embodied, haunted, political, and vulnerable, reflecting on the consequences when ethics meet real locations and entities.

The chapter by **Emma Hallemas**, **Anna Isaak-Ross**, **Rita de Almeida Leite**, and **Marta de Menezes** presents rurality in all its complexity, where care becomes infrastructural, communication becomes epistemic, and community is layered, negotiated, and sustained (Hallemas et al. 2026).

In her chapter, **Sabina Oroshi** abstracts institutionality within grounded practice, inspired by lived relations, through the concept of the cosmo-gram, reading institutions as world-making devices—dynamic, distributed, and continually in formation (Oroshi 2026).

The chapter by **Sergey Dmitriev** and **Andrew Gryf Paterson** reframes travel as pedagogy and family as an ecological unit, where learning takes place *en route* and migration becomes a relational practice through which kinship replaces infrastructure (Dmitriev & Patterson 2026).

Like a dreamy legend lost in the centuries, the chapter by **Steffan Jones Hughes** repositions the narrative towards ecological justice by contrasting colonial modes of thinking with the practices of care, coexistence, and respect for more-than-human worlds embodied by the ArtLabo retreat participants (Hughes 2026).

Irene Posch turns her attention to tools as agents of collaboration, grounding relational claims in tactile specificity and framing knowledge as embedded in prototypes and material engagement (Posch 2026).

Bodies and environments become shared laboratories, where contamination, desire, and toxicity return as necessary provocations, by the hand of **Mario Savini**, who reintroduces risk and transgression through bioart as ecological speculation (Savini 2026).

In the chapter by **Chelsea Coon**, the sensing body presses back against space and affect becomes a structuring force, as the author, through auto-ethnographic lens-based practice, translates speculative risk into embodied perception (Coon 2026).

Institutions become co-agents, biotechnology becomes rite, and ferality becomes explicitly feminist and queer in the chapter by **WhiteFeather Hunter**, whose feminist technoscientific practice reclaims ritual, bodily fluids, and witchcraft as epistemic tools (Hunter 2026).

Part III: Protocols, Pedagogies & Feral Operations wonders what happens when ferality meets constraint, crisis, and law, proposing a few optimistic techniques on how to sit elegantly on a hot potato and how to fine-tune to overcome escapist attempts.

Ferality becomes a methodological stance in the chapter by **Clare Stott**, who proposes liberation through epistemic disobedience, reframing silliness and refusal of visibility as forms of epistemic courage (Scott 2026).

Locality becomes knowledge and ferality becomes rage against the pressures of overtourism in the chapter by **Sophia Vrioni**, who proposes care in the form of protective politics under economic constraint (Vrioni 2026).

Repair enters through pedagogy in the chapter by **Martyna Groth**, who proposes the exploration of tactility and manual knowledge, reclaiming the hand as a site of learning and continuity (Groth 2026).

Escalating the stakes, where repair, reuse, and justice become conditions of survival, is the object of the chapter by **Camila Torralbo**, who addresses infrastructural collapse through feral energy infrastructures (Torralbo 2026).

Direct auto-ethnographic confrontation in the lab/museum through the examination of bioart conservation is the topic of **Adam Zaretsky's** chapter, in which the author questions how the refusal of singular classification and continuity of life challenges institutional logics of containment (Zaretsky 2026).

Ferality meets law with **Maja Smrekar** and **Ewen Chardonnet** in an interview for Makery, where artistic freedom, gendered bodies, and non-human kinship collide with political violence and legal accountability. The publication of this chapter is an urgent call for immediate institutional action to stop crimes against cultural expression in Europe (Smrekar 2026).

At the rear of the book, readers will find the Rewilding Cultures Index, which presents information on residency artists, photo records documenting activities across the Feral Labs Network, and a dedicated Sustainable Practices section, presented through a concise text and a series of infographics that distil essential points from consortium reports on social accessibility and ecological sustainability, developed as direct outcomes of the project's activities (Dolinšek 2026). Together, these materials function as an extended methodological appendix—making visible the labour, negotiations, and care infrastructures that underpin the practices discussed throughout the volume. As with the first two editions of the *Feral Labs Node Book* series, **Rüdiger Wassibauer's** “Dare to Stop the Future” inhabits the edges of the book offering a quiet, persistent counterpoint that frames these concerns with constraint, responsibility, and the politics of possibility.

Fa Fa Futures closes the formal cycle of the Rewilding Cultures grant without sealing the work of the Feral Labs Network. What remains active

are the rhythms, methods, and responsibilities that continue to reverberate across practices, partnerships, and places. In this sense, *Feral Labs Node Book #3* modulates a project, carrying forward an invitation to pick up the pulse, refine the measures, and continue the work, attentively, imperfectly, together.

Bibliography

- Berger, E., Chardronnet, E., Dolinšek, T., & Veber, U. (Eds.). (2021). *Feral Labs Node Book #1: Rewilding Culture*. Zavod Projekt Atol.
- Billimore, Y., Dolinšek, T., & Veber, U. (Eds.). (2024). *Feral Labs Node Book #2: Feralities*. Bioart Society – Zavod Projekt Atol.
- Caillois, R. (2001). *Man, Play, and Games* (M. Barash, Trans.). Illinois UP. (Original work published 1958)
- Campos, L. (2021). Going Feral. In E. Berger, E. Chardronnet, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #1: Rewilding Culture*. Zavod Projekt Atol.
- Cohen, L. (1992). Anthem. In L. Cohen, *The Future*. Columbia Records.
- Coon, C. (2026). Nebulas, Forms, Forces: Lens-Based Perspectives. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 186-195). Zavod Projekt Atol.
- Dolinšek, T. (Ed.). (2026). Rewilding Cultures project on the path of sustainable practices. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 310-320). Zavod Projekt Atol.
- Dmitriev, S., & Gryf Paterson, A. (2026). *Slow Travel, Symbiocenic Families, and Re-Wilding Culture Gatherings Towards Glocal Kinship*. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 142-155). Zavod Projekt Atol.
- Feral Labs. (n.d.). <https://ferallabs.net/>
- Groth, M. (2026). Manualism: Knowledge Through Touch—Tactile Boards as Tools in Artistic Pedagogy. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 246-256). Zavod Projekt Atol.
- Honorato, D., Panagopoulos, I., Dolinšek, T., & Veber, U. (Eds.). (2026). *Feral Labs Node Book #3: Fa Fa Futures*. Zavod Projekt Atol.
- Huizinga, J. (1955). *Homo Ludens: A Study of the Play Element in Culture* (R. F. C. Hull, Trans.). Beacon Press.
- Hunter, W. (2026). Wet Witches and Rewilded Biotech: Bastard Protocols for How to Grow a Homunculus (Badly). In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 196-218). Zavod Projekt Atol.
- Hallemaas, E., Isaak-Ross, A., de Almeida Leite, R., & de Menezes, M. (2026). Feral Conditions and Rural Futures: Engaging Hybrid Communities Through Arts Engagement and Feral Lab Practices. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 106-127). Zavod Projekt Atol.
- Hughes, S. J. (2026). Why Was the Sea Serpent There?. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 156-159). Zavod Projekt Atol.
- Korakidou, V. (2026). Rewilding Animism: Doing It With More-Than-Human Others. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 62-83). Zavod Projekt Atol.
- Mittwoch, U. (1978). Parthenogenesis. *Journal of Medical Genetics*, 3, 165–181.
- Montanari, M. d. R. (2026). Life-Art-Technology Beyond the Laboratory: Organological Practices, Poetics of Care, and Decolonial Perspectives. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 84-102). Zavod Projekt Atol.
- Muniyappa, P. (2026). Experiments in Land and Water: Indigenous, Feminist, and Decolonial Traditions. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 20-60). Zavod Projekt Atol.
- Oroshi, S. (2026). Projekt Atol: Practices for a Planetary Now. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 128-141). Zavod Projekt Atol.
- Posch, I. (2026). What Making Tools Taught Me About Making Cultures. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 160-170). Zavod Projekt Atol.

Rewilding Cultures (n.d.) <https://rewildingcultures.net/>

Rousseau, J.-J. (1959). *Letter to M. D'Alembert on the Theatre* (A. Bloom, Trans.). Cornell University Press. (Original work published 1758)

Savini, M. (2026). Living Future: Biotechnological Aesthetics for New Ecological Imaginaries. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 172-184). Zavod Projekt Atol.

Stott, C. (2026). Permission to Be Ridiculous: Field Notes From a Scientist Turned Artist. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 222-235). Zavod Projekt Atol.

Smrekar, M., & Chardonnet, E. (2026). Legal Battle Against Political Abuse of Art: Interview With Maja Smrekar. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 284-306). Zavod Projekt Atol.

Torralbo, C. (2026). Feral Energy Infrastructures. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 258-275). Zavod Projekt Atol.

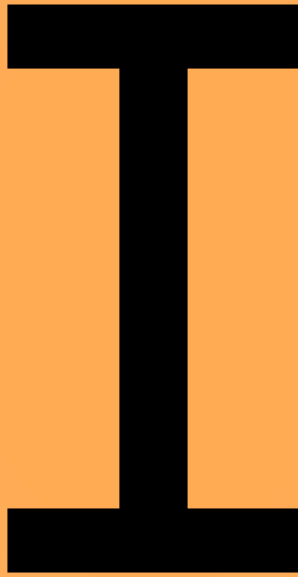
Vrioni, S. (2026). Feral in the Face of Overtourism: Approaching Corfu From Within. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 236-245). Zavod Projekt Atol.

Zaretsky, A. (2026). Bioart Biopsy: Shared Specimen Obtained. In D. Honorato, I. Panagopoulos, T. Dolinšek & U. Veber (Eds.), *Feral Labs Node Book #3: Fa Fa Futures* (pp. 276-283). Zavod Projekt Atol.

FA

FA

FUTURES



Prathima Muniyappa

Experiments in Land and Water: Indigenous, Feminist, and Decolonial Traditions

Prathima Muniyappa recently received a PhD in Media Arts and Sciences at MIT. She is interested in issues of social justice, democratic access for historically marginalised communities, and enabling indigenous agency. Her research investigates alternative cosmologies and cultural ontologies for their potential to contribute to emerging discourse on techno-imaginaries in the realm of space exploration, synthetic biology, and extended intelligence.

Abstract

This chapter, excerpted from the dissertation *Designing the CthulhuCosmos: Toward a Speculative Cosmo-politics of Indigenous Epistemology in Space*, is one of four ethnographic interludes structured around the elements: Ground, Sky, Flesh, and Threshold. Centring land and water, it weaves through lithium extraction in the Atacama, Mars Analogue simulations in Ladakh, and post-disaster ecologies in Central Asia. Written in an affective, experimental mode, it draws on Indigenous, feminist, and decolonial traditions that treat story as both method and cosmopolitical responsibility.

My Body's Water Is Yours (2024, San Pedro de Atacama)

Every second here desiccates me, nose bleeding, throat scratched, my skin cracks to resemble the cracked earth. In the two weeks that I have been in the desert, a lithic transformation has been terraforming me. *Madre Tierra* asks of you, your body's water¹. That debt is easily paid, and willingly given, a transaction; however, that is harder to stomach, is one posed later by Carlos on our way to the site of the ceremony. The day before was a day of flooding in Coyo². I saw for myself the material cast of a desert's thirst. I have never seen hunger like this, lust so utterly insatiable. A torrent of water coursed through his land, once every twenty-one days, only to vanish within the hour, slaked by a thirsting earth, traceless, even the memory of moisture consumed. It was his rationed inheritance. We drive past the yawning scars of the Sociedad Química y Minera de Chile's lithium operation, its evaporation ponds gleaming like mirrors beneath the sun. Carlos turns to us, almost casually, and asks: "How much water do you think it takes to make a single Tesla engine? Eight," he says. Eight Olympic-sized pools of lithium brine to conjure a single battery. Perspiration beads down my face as water is taken from me; this moisture implicates my body's hunger with the thirsting earth, with a drying river, with an invisible sky, with a flamingo's throat, with a rocket launch, with a billionaire's

1 So I am told by many interlocutors in San Pedro De Atacama.

2 The role of the celador, a traditional water guard or hydrological steward, is central to many Indigenous and campesino communities throughout the Andes, including in northern Chile, Peru, and Bolivia. They are relational authorities, tasked with ensuring equitable, ritualised distribution of water according to principles such as ayni (reciprocity) and minka (collective work). Their decisions reflect a hydro-social contract rooted in both cosmological and ecological accountability (Boelens et al. 2016). Carlos receives his allotment every 21 days, enough to make a flood in his two acres of land. The water comes gushing out of the channels and is directed to flood the crops that he has planted, zucchini, quinoa, chanar, and algarroba trees, the water pours out for 12 minutes and 37 seconds, the earth is dry in 86 minutes.

net worth, with a drying desert. “There are two ways to die in a desert,” Carlos tells me. “One is by thirst and the other is by drowning.”

These are questions that are hard to hold. Whose body’s water belongs to whom? In seeking intimacy with salt flats and dust storms, I watch myself reach again and again for a phone that has no reception and worry about these gestures of yearning for a device that is now my body’s language. I turn to my devices to document, to hold time, to record a story, and in my hand lies a tiny piece of a transaction that robbed bodies of water from Madre Tierra. One sixteenth of an Olympic-sized brine pool in San Pedro, the death and labour of 0.0342 children from the mines of Cerro Rico in Bolivia, seven acres of an old-growth forest in the Congo³ (Grossman 2006; Statler 2017; Taffel 2016), and a heaviness of downstream tolls that I barely have the courage to hold is the hydrological entanglement of my research. This is capitalism’s crooning song, I remind myself. The foreshortening of sight, the severing of one’s senses as a nested ecological self, the insertion of an affective field of non-relation between the instant of consumption and the site of production. It is a hard truth to hold, how I sanction ecological devastation with thumbs swiping right, callous, casual consumption. Whose body’s water does the gesture draw from? Whose body is it forcibly taken from? The thought sends shivers down my spine; it registers in much the same place in my body that reacts to an encounter with rape culture. Pierre Bélanger speaks about the pornography of an open pit mine (2016), the textual portmanteau collapsing the distinction between earth bodies and bodies of sex work, both ripe for extraction, kink-heavy for voyeuristic gaze. It collapses what little I know about the notion of consent; a hydrofeminism, as Neimanis reminds us, refuses the discrete fantasy of bodily autonomy and insists on entanglements, co-mingled, leaky, absorptive, and porous, “caught in the swell of extractive regimes where consent is neither asked nor given, but absorbed and wrung from us like sweat from the earth’s fevered skin” (2017).

A flamingo cuts a pink arc across the sky, a descendant casualty of the lithium mines. He tells me of the times they used to go as a family into the salt flats to forage for flamingo eggs, a soft-footed pilgrimage across the *salar* to learn the rules of the gift economy. His grandfather taught him how to read the salt flats like scripture, to discern which eggs were

3 The shift from lifeline to tombstone marks what Deborah Cowen calls the infrastructural uncanny, when distant harms crystallise inside intimate objects. As scholars of critical logistics show (LeBillon 2014; Tsing 2005), supply chains do not simply move goods, they sever feeling from harm, rendering extraction frictionless, unseen.

offerings for him and which were offerings for the land⁴. “That was the most important lesson I ever learned,” he recalls. “To never touch what isn’t yours, especially if it’s been given to the earth. The eggs speak,” he says. “They tell you whether they are able to feed your body. The ones that belong to the land cannot feed you; they create even more hunger upon consumption.” I grasp between his words, between translating to understand what register the eggs use to announce their place in this burgeoning calorific conviviality, what corporeality captures this listening aspect and falls short. I cannot speak in this land’s covenant of honourable harvest. This intimacy of scrutiny has not yet been granted to me. The eggs to nourish, the feathers to trade, to adorn, and for ceremony, for water. As *Yatiri*, Carlos is a water protector and master of the *Talatur* ceremony, a title inherited from his wife’s grandfather. The *Talatur* is a ceremony for the water, still celebrated in some villages in Coyo, Socaire, and Peine. It is a ritual acknowledgement to the spirit of the gift, to the hydrosphere. The ceremony takes place in the second week of October at the site of confluence where the channels merge into one, caretakers and landowners come with offerings of aloha, fermented liquor made from the *algarrobo* fruit, they bring the fruits of the earth, fecundity-made grain milled into flour to look like sand. Quinoa, maize, and wheat are sewn into parcels adorned with feathers from the underside of the parina flamingos’ wings and offered up as gifts for the cantal mayor, the ritual interlocutor, a being of spiritual and medicinal power who is accorded this designation and position by virtue of their abilities to operate at the interstice. Who, in their role as middleman, returns these gifts to the more-than-human earth⁵. The gathered people clean the channel upstream, and the land comes alive

- 4 Carlos’s account transposes Marcel Mauss’s foundational theorisation of the gift into a cosmopolitical grammar where reciprocity is calibrated by attentiveness to place. Mauss’s *Essai sur le don* (1925) was written as both an ethnographic study and a moral intervention, a critique of capitalist individualism and utilitarian economic rationality following the First World War. He offered the gift economy as an alternative social architecture, grounded in obligations to give, receive, and reciprocate, as the connective tissue of collective life. Yet where Mauss often abstracted the spiritual dimensions of gifting into symbolic exchange, Carlos’s grandfather articulates a more-than-human ethic of refusal: an egg may be offered, but not every gift is yours to receive. The distinction between edible and inedible eggs, between sustenance and rot, rehearses a vernacular epistemology of consent, where listening sustains relational balance. This reframes the gift as an interspecies ethics of discernment.
- 5 The cantal mayor serves as a cosmopolitical mediator in Marisol de la Cadena’s sense: one who navigates ontological in-betweens, human and more-than-human, legal and spiritual. In the *talatur* ceremony, they enact a politics of relation by returning gifts to the hydrosphere, a ritual negotiation with entities like clouds, hills, and ancestors. what de la Cadena calls “earth-beings”. Far from inert, these beings co-constitute life. The cantal mayor sustains a governance model rooted in reciprocity.

with feet that move to the rhythm of the ceremonial dance. Ears fill with chants in the Kunza language, ancient music, *cencerros*, cow horns, and the Clarín. The song supplicates the spirits of the hills, Licankabur and his six siblings, the kabures. These enspirited hills are the source of water, they hold water, direct its movement across the arteries of the thirsting Madre Tierra. There are male, female, and other entities, they are known to the elders, familial; ritual makes them dialogic, they are called to croon to the clouds, make love to the rain, catch the water, release it and bring moisture to the lips of humans, llamas, foxes, vicunas, toads, snakes, beetles, scorpions. For mouths that are here and mouths that will one day be, moisture that was taken is returned to the body, but in the middle, there is a moment of silence. There is a moment of listening, ceremony and supplication. Kunza⁶, like many other indigenous languages, is suffering the slow descent into silence, like the moisture wicked off a tongue, it too seems forcibly wrested away by time and the teleology of a different tide. Tomás Vilca, though a school teacher in Calama's primary school, turns to song and story as a site for excavation and extraction, his school, slumbering in the shadow of the tailings heaps from Chuquicamata, the largest open-pit copper mine on Earth, is a site for retrieval and renewal, recovering new words and concepts from old songs like the ones sung during Talatur.



Image 1. CthulhuCosmos. Photo credits: Prathima Muniyappa.

- 6 The presence of Chuquicamata as a silent backdrop remains a curious specter. Its presence haunts Vilca's classroom like Avery Gordon's notion of unresolved history, an extraction site that lingers as an active agent of toxicity and whose tailings leak time. And yet, amid this atmosphere of slow violence, Vilca's restoration of Kunza exceeds salvage infrastructure akin to a counter-mining.

Supplicating The Lithium Saints (2024, San Pedro de Atacama)

When I last came to this land, I strained my neck and turned my eyes skyward to learn about the Andean dark constellations, the burgeoning light pollution and vanishing night occupied much of my imagination. I was on the filmmaking crew for the documentary film *The Sky Commodified*, directed by Francisco Lobo, Romea Muryn, and Maya Shopova, exploring the evolving “astro-industry” in Chile’s Atacama Desert, and my fellow collaborator in the Myths of the Cosmos project for the Space Exploration Initiative at the MIT Media Lab was Nicole L’Huillier. I arrived then as a stranger to the land, laden more with instruments than intention, more questions for the sky than the soil. This time around, my gaze is drawn to the earth. Meeting with Carlos is to engage in ceremony first. He introduces us to Likankabur and the enspirited beings here⁷. Madre Tierra asks of you, your body’s water. That debt is easily paid. I’m starting to trace other invisible constellations with Carlos’s help as he co-dreams with hydrological bodies. The stolen water desiccates my body to build cyborg appendages. It desiccates the salt flats to simulate the singularity of the posthuman promise. It reduces the reflective observatory of the river to rupture the reading of sky from earth and redirects infrastructure for launch

- 7 We arrived in Coyo under the cover of darkness, on a moonless night into a geography without any bearings, the tunnel vision of headlights illuminating an endless road, a flash of tail, blurring rocks, sleep-lidded eyes, more endless road, nothing distinctively announcing its place in the world of things and beings, the night was all a blur, a bed, short dreamless sleep, only to wake again in darkness for ceremony. Carlos says that to begin any work in desert, you must introduce yourself and your intention to the land, and proceeds to explain the ceremony to us. Simple in material mise en scène and radical in relational affect, the ceremony consists of offerings, of coca and wine—that which nourishes your body has to be offered to the earth too. I kneel in front of Volcano Likankabur and introduce myself, I dig a hole in the earth and press my lips into that empty space and whisper into it my intentions and ask for assistance in the creation of my work. It is a curious feature of the landscape that no matter where you are in the region or how you move, the Volcano Likankabur’s gaze rests on you like a geographical panopticon, the Mona Lisa effect. I seal the hole with the promise that the land holds me to my desire, and as first rays of light fall, the land is finally revealed to me, in introduction, in ceremony, in self-introduction. Later that evening is another ceremony for night, Carlos knows that I came to document Likan Antai cosmology and I’m not allowed to begin my research without a proper orientation. This orientation in question is literal, I lay down on the earth in alignment with the Chakana, the Andean cross, an axis that folds the verticality of the cosmos into the flesh of the land. My spine rests as a meridian, a bridge between the upper world (Hanan Pacha) and the underworld (Ukhu Pacha), the body as a breathing conduit for celestial and terrestrial conversation. Methodology in this context, even the intent to work with this cosmology is filtered through the gateway of ritual. Introduction, orientation, permission in corporeal choreography. Of listening, of laying down, of putting lips to hollow spaces, of aligning spine with volcano, heartbeat with starlight, intention with the unfathomable patience of rock, in keeping with the land as interlocutor for pedagogy, a mode of inquiry that Leanne Betasamosake Simpson suggests in her work with Nishnaabeg communities.

into the low Earth orbit. The flamingoes rarely hatch now⁸, the gifts dry up, and the ceremony endures now with strained throats. Supplicating spirits in a language called out of extinction. Kunza now chants with a faint hum of a silent Tesla engine. Constellations of an otherwise.

Where else in the galaxy will we mine lithium? Interplanetary resource wars are a future that will likely come to pass, as the prophets of popular science fiction portend. Lithium possibly abounds in the oceans beneath the icy surfaces of Jupiter's moon Europa and Saturn's Enceladus, just as it can be found in seawater on Earth, or in the Occator crater on Ceres⁹, or in stellar explosions beyond the reach of our solar system. In the ceremony, when the circumstances demand, Carlos enters the salt flats and consumes, in ritual affect, the lithium-laden salt. Lithium has long since afforded itself as a panacea for a bipolar brain, reducing the severity and frequency of acute mania and helping bodies enter into balance¹⁰.

- 8 The sharp decline in flamingo hatchings across the Atacama's salt flats signals lithium extraction's hydrological violence. Brine pumping for evaporation ponds disrupts salinity and water levels, fracturing the migratory and nesting cycles of Andean, Chilean, and James's flamingoes (Caziani et al. 2020; Díaz et al. 2018). These birds, once attuned to rain cycles and ancestral wetlands, now hover in sacrifice zones, caught between conservation imagery and extractive realities. Their unhatched eggs echo what Eduardo Gudynas terms a broken biocultural memory.
- 9 The anticipation of off-world lithium reserves reflects a broader trend in extraterrestrial extractivism, where the logics of terrestrial resource frontiers are projected onto celestial bodies. Current planetary science suggests that trace elements such as lithium, sodium, and magnesium may exist in subsurface oceans of icy moons like Europa and Enceladus, based on spectroscopic and magnetometric data from missions such as Galileo and Cassini (Hand et al. 2009; Postberg et al. 2018). The Occator crater on Ceres, known for its reflective salt deposits, is likewise theorised to contain brine-rich subsurface reservoirs, rendering it a speculative mineral target (Nathues et al. 2015). These projections are echoed in science fiction and futurist policy discourse, often without attention to the ethical, cosmological, or ecological implications of turning otherworldly oceans into mining sites. The trope of the "resource war" has migrated from Earth-bound geopolitical frameworks into the domain of space governance, forming the speculative bedrock of what scholars like Julie Klinger (2017) describe as astropolitical mineral futures, where the horizon of scarcity is extended into the vacuum of space under the guise of inevitability and scientific destiny.
- 10 The ritual ingestion of lithium-laden salt opens a scalar meditation on balance, a term that circulates through both psychiatric medicine and planetary metabolism. Lithium, used for decades to stabilise bipolar affective states, has served as a pharmacological metaphor for equilibrium, often without attending to the ecological and geopolitical imbalances entailed in its extraction. Anne Marie Mol's work on the logic of care (2008) reorients medical practice from control towards attunement, suggesting that bodies and technologies are not stabilised through singular interventions but through ongoing relational adjustments. Extending Mol's insights, we can trace how balance itself becomes a contested terrain: who absorbs the costs of stabilising others, and whose body becomes the substrate for systemic recalibration? In this scene, Carlos performs a form of ritual pharmacology, drawing attention to the energetic entanglements between medicinal efficacy and sacrificial geographies. Lithium's journey from Andean brine pools to neural pathways is rarely framed as ceremony, yet it implicates both spirit and flesh.

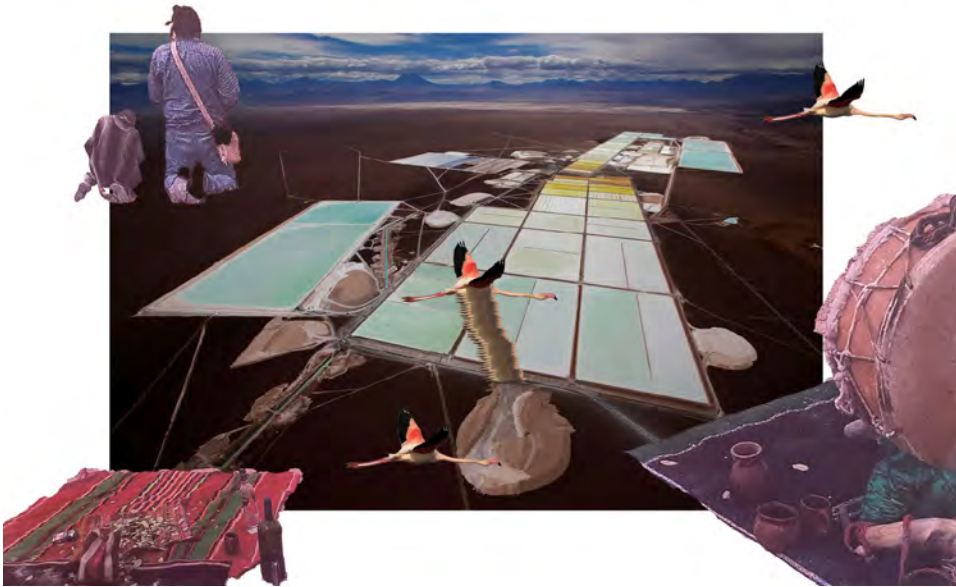


Image 2. Supplicating the Lithium Saints. Photo credits: Prathima Muniyappa.

From the quantum to the cosmic, we need to ask ourselves whose bodies hang in the balance? I wonder at the cost of these transactions, at what bodily strength it would take to hold the cost, whose body will they be drawn from? What songs will we sing to what spirits? What forces shall we supplicate in the quest for balance?

These Are Our Constellations Now (2023, Aral Sea)

The cognitive dissonance of seeing ships moored in dust is a strange sight to confront, as if the water beneath them vanished before they could return home. An optical trick of imperial scale. Now speed, power, and force are no strangers to water's ways, but it evokes a temporal vertigo to contemplate the erasure of an entire sea in the blink of an eye. There are nine ships now rusting in the sand, in the gravesite of the Aral Sea. One can visit

The salt ingested is neither inert nor benign; it carries within it a cosmopolitical weight, demanding a new ethics of supplementation, where the body's regulation is tethered to a global and geologic sacrament.

them by buying a ticket to the Nukus Museum; they, too, are artefacts of political choice, remnants of a vanished sea, sacrificed to feed the appetite of an empire. When I stood in the missing body of the Aral Sea, the weight of the disappeared water crushed me, the heaviest of hauntologies¹¹ held. To witness the death of a sea is to inherit a grief too vast to name and too intimate to ignore. I did not leave the sea the same person who entered, and yet here I add my voice to silence, witness to the disappearance of water, my own and others' forcibly taken. I cannot shake the thought of this aridity line, an umbilical cord that holds the memory of a missing sea.

In 1950, the Aral Sea was the fourth-largest inland body of water on Earth, spanning over 67,000 square kilometres between what is now Kazakhstan and Uzbekistan. Today, it is a desert. The sea's disappearance was not the result of drought or tectonic shift but of deliberate, slow violence, an ecological catastrophe born of imperial appetite. Beginning in the 1960s, the Soviet Union undertook massive irrigation projects to fuel its cotton industry, diverting the Amu Darya and Syr Darya rivers, the lifeblood of the Aral, into an expanding patchwork of monocrop fields. Cotton, called "white gold", was deemed essential to Soviet economic planning, and the sea was sacrificed at the altar of industrial autarky¹². Within four decades, one of the largest inland seas on the planet had almost entirely disappeared. The result was one of the greatest environmental disasters of the Anthropocene. The shoreline receded by hundreds of kilometres, leaving behind rusted ships marooned in sand, ghost harbours, and a rising tide of salinisation and toxicity. In the dust-choked town of Nukus, the once-thriving fishing industry is now a memory, curated behind glass in museums that feel more like mausoleums. Photographs of bustling ports and children playing by the shore present a jarring dissonance when set against the barren landscape outside, where wind-blown salt and pesticide-laced soil corrode lungs and livelihoods.

11 The use of hauntology here draws from Jacques Derrida's original framing in *Specters of Marx* (1993), where haunting emerges as a temporal disjunction, a presence that insists despite its erasure, a future that arrives already broken. The rusted ships marooned in sand exemplify what scholars like Deborah Bird Rose and Thom van Dooren call extinction as a form of ongoingness, a continuing demand for attention, grief, and accountability.

12 The disappearance of the Aral Sea exemplifies Rob Nixon's "slow violence", a gradual, invisible devastation disproportionately affecting marginalised ecologies. Orchestrated through Soviet hydraulic modernity, the rerouting of the Amu Darya and Syr Darya rivers reimagined rivers as tools of statecraft and landscapes as extractive metabolisms for cotton monoculture. Kate Brown and Julie Cruikshank show how such imperial interventions erase relational cosmologies, replacing them with the technocratic logics of "white gold"; a stark reminder that ecological collapse is rarely accidental. It is engineered, mapped, and scaled.

67300 km³ of water, gone, and this memory still endures. This region's trauma saturates the air, its absences cling like a second skin, haunting made material. In bodies, the loss endures through riverine flows, in arteries, across generations. Blood samples from pregnant women and umbilical cords show high amounts of dichlorodiphenyltrichloroethane (DDE), and hexachlorocyclohexane (HCH) has been found in breast milk. Leaky land, leaky bodies, effluvia of blood, water, milk, salt, sand¹³. Measured in millilitres now, these downstream flows of a missing sea. Salt. Sand. Blood. Chitin. DDT. DDE. PCB. PCDFs. PCCDs, HCH¹⁴. Hydro-chemical elegies: water converted into toxin, memory into mutation. Remnants of a missing sea. Man-made. Capital-made. These are our constellations now.

The story is served to me with a side of *deja vu*. Is this a new story, I ask myself. Why does my body know how to respond? What memory of mine recalls the particular contours of this grief? In the 17th century, what is now the Indian State of Maharashtra earned the moniker “Manchester of India”, supplying white gold to British mills. The rich alluvial soil and its abundant aquifers synthesised cotton from sunlight and saturated the Imperial circuitry of extraction. Four centuries later, The Vidarbha region, once a flourishing cotton belt, is now infamous for agrarian distress and farmer suicides. The land is capable of producing cotton, but the hands that tend it do not survive. According to the National Crime Records Bureau of India, over 60,000 farmers in Maharashtra alone took their lives between 1995 and 2020. 26,566 deaths occurred in Vidarbha between 2013 and 2022, an average of seven per day, breaths caught in the coils of a tightening cotton noose. Vidarbha is still an open wound, festering with chronic

13 The presence of persistent pollutants exemplifies what Haraway and Alaimo term *transcorporeality*, a shared chemical common where human and ecological bodies interpenetrate. “Leaky bodies” becomes a forensic condition: toxicity enters through breath, skin, ingestion, sedimenting harm into kin-making processes like pregnancy and lactation. Environmental studies confirm bioaccumulation of organochlorines in reproductive-age women, with generational consequences (Ataniyazova et al. 2001; Glantz 2005). Injury here travels via fluid media, milk, blood, salt, and it persists. It demands a broader notion of reproductive justice. Loretta Ross and the SisterSong Collective remind us this justice entails not only rights over reproduction, but also the ability to parent in safe, sustainable environments. In extractive contexts, this includes protection from environmental violence and endocrine disruption. Kyle Powys Whyte and Kim TallBear extend this frame, insisting kin-making is inseparable from land, ceremony, and multispecies relations. The reveal of contaminated breast milk and umbilical blood mark ruptured relational geographies more than mere toxicity; they are evidence of broken covenants and a call for reparative cosmologies.

14 Dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethylene (DDE), polychlorinated biphenyls (PCBs), polychlorinated dibenzofurans (PCDFs), polychlorinated dibenzo-p-dioxins (PCCDs), and hexachlorocyclohexane (HCH).

indebtedness, dwindling water tables, and erratic rainfall. A region locked in a lethal feedback loop, where ecological precarity compounds economic despair. Disappearing water disappears bodies; as hydrological systems collapse, so too do social structures.

Visiting the region in 2019, I found it marked by armed conflict and militia control. The violence sedimented by histories of extraction, a response to state abandonment and ecological disarray. Vidarbha has thus become both a cartography of neglect and a crucible of resistance. Tracing the tectonic undercurrents of this region's violence is to treat violence as a construction whose journey began quite literally downstream, in the groundwater. Sai Balakrishnan has demonstrated how regions like Vidarbha were not natural backwaters but rather became peripheral through planning logics that privileged industrial and agrarian capital. These territories were systematically disinvested in, transformed into labour reservoirs and sacrifice zones. Reports by scholars and journalists note the rise of Maoist insurgency in these areas as an outcome of long-term disinvestment and dispossession (Bhattacharya 2025; Gudavarthy 2012; Roy 2011; Singh 2025; Shah 2018; Sundar 2016). Villagers, unable to survive through farming, turn to forest-based livelihoods, which often place them in conflict with the state and with industry¹⁵. Disappeared water from two centuries ago enacts a succession regime, as political spectres and poverty trap criminalised villagers for seeking strategies of survival. Industry, in concert with a corrupt state, lays claim to land, while resistance is recast as insurgency, a semantic sleight that justifies the deployment of military force against the most marginalised citizens of the nation. What emerges is a choreography of extraction and erasure, where profit is shielded by camouflage and dissent is criminalised into silence. As Arundhati Roy writes in *Walking with the Comrades*, could it be that we “far more comfortable with the idea of poor people killing themselves in despair than with the idea of them fighting back”? This is

15 Maoist-state conflict in central India persists as a strategic choreography of control. While official data notes a sharp decline in incidents from 1,936 in 2010 to 374 in 2024, this numerical shift conceals intensifying militarisation. The CPI (Maoist) reported 357 cadre deaths in the past year, including 136 women, many in the “Kagaar” counter-insurgency campaigns in Dandakaranya. Rather than treating insurgency as a cry for justice, the state reconfigures resistance as criminality. Roy warns that the state remains far more comfortable with despair than dissent, while Balakrishnan's analysis of infrastructural disinvestment reveals how regions like these become sacrifice zones for extractive capital. Here, the state's deployment of force enacts an infrastructural claim-making, which recasts resistance as insurgency, rendering local struggle illegible within official grammars of governance.

a complex story deserving of more than a paragraph, but it is not my intent to open it only to mark my own passage through it and flag the contours of asymmetry at play here. It is a dangerous place to visit, I was warned before I alighted from my bus to the area. On my first night there, sleeping in the only guest house in town, some men attempted to force entry into my room. I spent the night barricaded inside, a bed frame resisting the door, with the weight of my breath caught in my chest. Extraction's gaze extends its benediction beyond rivers and soils; it penetrates bodies and behaviour. The same logic that siphons groundwater without consent exults in the violation of women. Extraction is a colonial grammar of entitlement, a systemic structure of dispossession that arranges vulnerability unevenly across flesh and land. What is poetic in its cognitive dissonance is that what drew me to Vidharba was to study sacred groves, fragments of primaevial forest preserved by local communities through spiritual significance. Amidst all this violence, the groves remain pristine, untouched by extractive hands for centuries. Rich with biodiversity, they are preserved not by top-down conservation policy but through embodied cosmology, folded into prayer, into ritual, into daily life. How curious that in a region of disappeared water, where so many bodies are desecrated, a body of forest endures, protected by reverence alone.

To stand at the shore of the missing Aral Sea in the fallout of the banality of evil is to confront the material aftermath of abstraction, the myth of the inert landscapes, the necropolitics¹⁶ that render people into resources, and the enduring lie that progress justifies any price. The sea was drained by paper and policy, hectare by hectare, decision by decision. Its loss persists in dust, in blood chemistry, in bodies still metabolising the legacy of conquest. To stand in the ruins is to demand a different ethic, one that refuses the false binary between preservation and participation, one that strives for equilibrium. Carlos will speak of balance, about the principles of honourable harvest. He believes the Earth has energetic fields, concentrations of mineral force that sustain equilibrium. When lithium is extracted and scattered across the globe, accumulating in urban

16 The Aral Sea's disappearance stages what Achille Mbembe (2003) terms necropolitics, the exercise of sovereignty through the power to expose populations to death, to regulate who may live and who becomes available for sacrifice. In this context, necropower operates not through spectacle but through attrition, through the quiet allocation of harm across space, time, and body. Mbembe reminds us that necropolitics often masks itself in administrative reason. In that sense, Arendt's banality of evil still flickers in the margins as the clerical rhythm beneath empire's extractive beat. It is the rhythm of the paper trail, the irrigation canal, the agricultural plan that asks what can be taken and never who it is taken from.

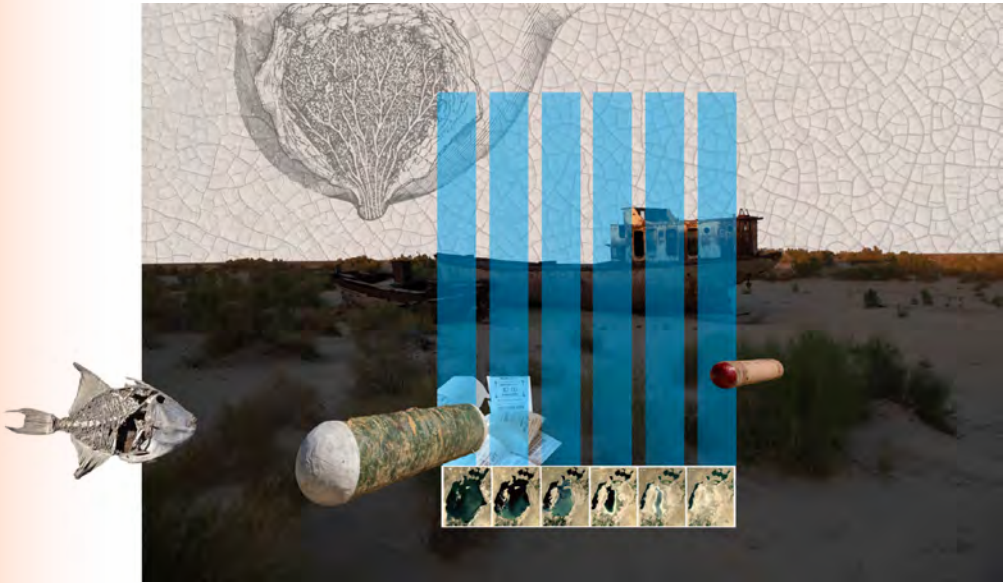


Image 3. These Are our Constellations Now. Photo credits: Prathima Muniyappa.

infrastructures, batteries, and data centres, it alters these fields. Echoing Deleuze and Guattari's notion of the body without organs¹⁷, the Earth's interior is being energetically reconfigured. These are our constellations now: cobalt, salt, GPTs¹⁸, blood, chitin, LLMs¹⁹, rare earths, pesticide residues. Cartographies of global supply chains and toxic geographies.

17 The invocation of the body without organs (BwO) here draws from Deleuze and Guattari's formulation in *Anti-Oedipus* and *A Thousand Plateaus*, where the term denotes a deterritorialised assemblage, a body stripped of hierarchical organisation, free of stratified function, open to flows, intensities, and multiplicities. Within the context of lithium extraction, this concept takes on a mineralogical and planetary register: as lithium is mined from concentrated geologic strata and diffused across planetary infrastructure, into batteries, servers, and the circulatory systems of technological life, it produces a kind of energetic detachment, a scattering of vital force that disturbs localised fields of balance. Carlos's perspective echoes a parallel but distinct ontological model, wherein earth is understood as an energetically cohesive being. The scattering of lithium enacts an ontological rupture, producing a planetary disorientation. Where Deleuze and Guattari imagined the BwO as a horizon of becoming, here it suggests a cosmopolitical fracture: a disarticulation of site, force, and relation.

18 Generative Pre-trained Transformer.

19 Large Language Models.

We Killed a Fetus (2023, Nashulai)

This was a difficult day for me. I watched Lepore make the kill. In barely 50 seconds, a life was snuffed out. It was clean, one single slice to the spinal cord to make it painless and then another to end its life. It was very elegant, but I couldn't help myself; I was in tears the whole time.

It started innocently enough. The *Orpul* ceremony began in the cattle pen. I added my body to the winding mass of bodies that was snaking through the pen. Deep-throated chants reverberated through our chests, call and response braiding us into a single, serpentine instrument. We undulated in rhythm, a living, coiling liturgy. The Masaai *Adumu* (dance) is polyphonic prayer made flesh. Each leap, each sway is an embodied prayer, an offering of strength and grace to *Enkai*, to the ancestors, to the world. The movements are still alien in my register, I try valiantly to emulate their grace all the way to the clearing where the *O'le'leshua*-laden thicket was waiting for us, but my body betrays me. Then they brought the cow, which was selected for sacrifice. Brought is a gentle word; the creature was harried. It came running towards us, and I could feel its panic affect me, and before I knew it, it was surrounded and then slaughtered. It was laid on a bed of *O'le'leshua*, the same plant that we would rest our bodies on later that night. There was an economy of elegance in the butchering; the blood pooled into the stomach lining, skin transformed into a vessel, and that was quickly consumed by the people around. I was invited to drink the blood, but I refused; they were amused by my discomfort. Every part of the cow would be consumed over the next three days, every tendon, every organ, every strip of meat except the hooves, which were taken back to the village to be boiled down to become glue. Even the spine was boiled into soup to be consumed on the last day, there was an order to the eating: first the blood, then the marrow, and at the very end the spine soup. Cartographies of the flesh, making worlds, tongue, teeth, and gastric juices to metabolise. The day wore on, and the labour of butchery continued alongside the cooking of the meat. As a guest, I was offered parts of the ribs, the choicest cut. I ate a little so as not to be disrespectful, but I mostly starved for the next three days. Eating is a cosmological act; to chew chooses a world, to bite draws a border, and to swallow is to draw the contours between inside and outside. Eaters have made the Anthropocene. If devouring is a form of kinship, eating is a means of participating in becoming. In the evening, Javan brings me back to the carcass, flagging my attention to something, something unexpected. The cow

had been pregnant. Nestled inside her was a fetus, still and untouched. The unborn one would not be eaten. It would be buried in the earth.

I doubled over in the bushes and vomited.

How could the Masaai, who claim to know cows better than anyone, have missed seeing this pregnancy? “It was a mistake. Maybe we will suffer some bad luck,” Javan tells me while offering me some more meat. I take the smallest piece so as not to be rude and chew it like penance; it tastes like ash in my mouth. The night is thick with the smell of roasting fat and animal juices dripping over fire, mingling with the sharp, almost sweet fragrance of *Ol’leleshua* leaves crushed underfoot. We’re gathered in a small clearing, more than forty bodies in the thicket, mostly men. I drift around the edges, scouting for a place to fold myself into the scene, into the shadows. I spot a quiet patch that seems less crowded. I clamber over a tangle of limbs, knees, hands, and shoulders until I reach it. And then I sit. Sharp. Sticky. Wet.

I look down. A wet sheen glints under the light of my cellphone. To my horror, I realise I’ve planted myself directly on the decapitated head of the cow. Its eyes are still open, vacant. The uneaten organs, slick and glistening, cradle me like an unholy cushion. I lurch back, heart in my throat, the world tilting. My stomach turns. It’s not going well for me. I step away from the crowd, away from my notes, my questions, the observer-self I had rehearsed. I decide that research can wait; my stomach needs me. That night, sleep was far away. I could feel a hyena’s breath waft across my cheek as it scavenged for pieces of discarded meat just on the other side of the thin Balanite barrier. Between sleep and waking, I fell into a liminal dream: bodies curled in the ash, fragments of bone and moonlight, the unborn calf slipping through my fingers like smoke. The chants from earlier still echoed faintly, their rhythm slowed to a pulse, but still within my body, the ceremony continued somewhere beneath the skin. In the morning, I ask Javan about the kill, about the absence of visible ritual or spoken prayer for the creature’s passing. Laughingly, he says: “Everything is prayer. In every movement of the knife, we give thanks. The prayer is inside the body.”

Later, I remember Derrida’s meditation on the violences we render edible. “It is a matter of discerning a place left open in the very structure of these discourses, which are also cultures, for a non-criminal putting to death. Such are the executions of ingestion, incorporation, or introjection of the corpse. An operation as real as it is symbolic when the corpse is animal.” In the ritual relating of the *Orpul*, gratitude is not separate from gore;

divinity simmers through digestion²⁰, collapsing my rudimentary constructions of binaries into breath, into smoke, into flesh made sacrament.

Where Else in the Cosmos Shall We Dine? (2024, San Pedro de Atacama)

The Atacama, with its rust-colored dunes and scorched salt basins, bears such an uncanny resemblance to Martian terrain that it has become a favoured site for analogue Mars missions. Rovers are tested here, instruments are calibrated, and human endurance is rehearsed for extraterrestrial conditions. In a curious symmetry, the very landscape chosen to simulate other worlds is already scarred, its subsoil emptied for lithium, its aquifers siphoned for batteries that will power downstream futures. Today, the Atacama Desert hosts nearly 70% of the world's astronomical infrastructure. The region's high altitude and dry air render it one of the most transparent skies on Earth, and international consortia have turned it into a planetary observatory. From the 66-dish ALMA array to the Very Large Telescope and the forthcoming Extremely Large Telescope, machinic sentinels of deep space, the Chilean desert is often celebrated as the eye of the universe. A gaze that Mi'kmaw astrophysicist Hilding Neilson contends encodes a settler optics; a way of seeing that recapitulates the empire's extractive gaze (2020)²¹. This region is a launchpad, literal and symbolic,

20 The Derridean notion of “non-criminal putting to death” resonates powerfully with Eduardo Viveiros de Castro's theory of Amerindian perspectivism, where the act of consumption becomes a cosmological mode of relation. In *Cannibal Metaphysics* (2014), de Castro outlines how for many Indigenous Amazonian cosmologies, eating is not the annihilation of the other but the incorporation of its perspective, a metaphysical event that alters the eater, a becoming through flesh. Cannibalism, in this frame is world-making, is how worlds know each other, through the digestive labour of transformation. In the orpül ceremony described here, where gratitude mingles with gore, Derrida's sacrificial ingestion meets Amerindian cosmopolitics: digestion is not separate from divinity, and flesh is not mute. The sacrament is not deferred; it is chewed.

21 Our gaze has always preceded our appetites; sight, after all, is the signal response for producing saliva, so does the way we image and visualise planets reproduce the mouth feel of conquest-era flavour profiles? While some scholars hold that the “Blue Marble” and Earthrise ignited a planetary affect, conjuring Earth's fragility in a single glance, others like Elizabeth DeLoughrey insist that these images emerge from apparatuses of military-scientific gaze, and that they enact a visual prelude to possession. “Satellite planetarity”, as she calls it, is a gaze borne of orbital optics and atomic dread, which naturalises global surveillance and a sublime control from above. While Frank White's “overview effect” offers the astronautic gaze as transcendental awakening, Donna Haraway warns of the “god-trick” as a view that privileges power. Lisa Parks critiques this logic of “vertical mediation”, where power proliferates through the vertical axis of satellite-based observation. She traces how “orbital imaging and surveillance technologies are complicit in military and economic strategies of control”, especially in the Global South, showing how satellites do more than render ranges of resolution—they construct geopolitical

for the extraplanetary imperative to extract. The desert is a simultaneous duality, a sacrifice zone for the green energy transition and a rehearsal stage for off-world extraction fantasies. It is in this paradox that the appetite and aspiration for the entangled futures of Earth and space unfold. How we treat these analogue sites will prologue how we treat other worlds.

The space industry, with its glittering dreams of planetary escape and post-terrestrial futures, has quietly tethered its ambitions to the dry veins of deserts like the Atacama. Lithium, light bearer, electrolyte of empires²², is now the sacred fuel of this ascent. Its properties render it indispensable not only in terrestrial battery production but also in propulsion technologies, satellite systems, and the storage arrays that sustain extraterrestrial computation. As the global demand for lithium surges under the weight of electric vehicles and the infrastructure of space exploration, new frontiers are being scouted. Where else in the cosmos shall we go to dine? The table is set in salt flats, but also on the moon, on Mars, in the metallic asteroids of the Kuiper Belt. In these celestial landscapes, dreams of extraction repeat old colonial scripts now recast on a cosmic scale. ESA and NASA eye the Occator crater on Ceres for its briny lithium deposits. Private companies draw up speculative maps of Europa's subsurface ocean, AI prompts generating storyboards of robotic drillers and brine harvesters orbiting Saturn²³. The cosmotechnics of our time, including anchors, satellites and rovers, emerge from the remnants of desiccated landscapes and displaced matter.

This lithium constellation now finds its twin in the helium-3 imaginary, as the extractive frontier leaps from scorched desert to lunar regolith. By 2025, helium-3 mining has taken hold with the global market valued at \$11.5 million and is projected to surge at a 37.6 % CAGR through 2033. On the Moon's sunlit surface, an estimated one

knowledge and operationalise it as force. Trevor Paglen similarly unmask the visual cultures of the "military-industrial-surveillance complex", showing how the infrastructures of orbiting satellites, data centres, and classified optics embody a techno-spatial regime of secrecy and control. If planetary visualisation can become a provocation for proprietorship, cloaking territorial motivation in the aesthetics of wonder, it is interesting to ask if rendering the whole earth as spectral maps further underscores epistemologies of conquest under the guise of observation.

22 Here, empire refers to the future empires of space colonisation.

23 During my time at the Space Enabled group at MIT, I learned from a colleague, once a Disney animator, that NASA and JPL regularly employ animators to storyboard future missions to the Moon, Mars, and beyond. This revelation clarified for me how cosmic infrastructure is not only engineered but imagined: rendered first as cinematic sequence, as speculative choreography of robotic limbs and celestial surfaces. The visual scripts of exploration participate in a broader colonial optics of resource fantasy.



Image 4. Where Else in the Cosmos Shall We Dine. Photo credits: Prathima Muniyappa.

million tonnes of helium-3 held in irradiated dust at concentrations up to 50 ppb have stirred the ambitions of both states and start-ups. Yet, extracting a single gram demands sifting through more than 150 tonnes of lunar soil. Interlune Corporation's deal with the U.S. Department of Energy promises to return the first litres by 2029. At \$2,500 per litre, helium-3 is billed as the new gold, with projected revenues soaring into the billions should fusion become commercially viable²⁴. I encounter these numbers at MIT's New Space Age conference at the Sloan School of Business, where capital's clout flares like a launch plume.

Beneath the gleam lies a familiar alchemy: scarcity transmuted into spectacle, and sacrifice made palatable through the grammar of progress. What unites lithium and helium-3 is not merely their promise to power the future but their narrative scaffolding, speculative abundance tethered

24 According to a January 2025 report released jointly by McKinsey & Company and the World Economic Forum, the global space economy is projected to grow from approximately \$630 billion in 2023 to \$1.8 trillion by 2035. Scholars such as Julie Michelle Klinger (*Rare Earth Frontiers*, 2017) and Peter Redfield (*Life in Crisis*, 2013) caution that such techno-futurisms often obscure geopolitical entanglements and environmental precarity. As critical theorists like Kathryn Yusoff remind us, the mineralogical fantasy of the Anthropocene is intimately bound to histories of racialised extraction and planetary ordering (*A Billion Black Anthropocenes or None*, 2018).

to colonial logics of emptiness, where silence is mistaken for consent. Together, they chart a cosmic ledger of thirst, one that tallies not just mineral yields but the deep costs of forgetting to ask who is being written out, again. The lithium constellation binds rocket fuel to ancestral thirst. In this era of off-world mineral fever, the same logic that drained sacred wells to build smartphones now threatens to puncture icy moons in search of futures engineered with a short-term memory. What ceremonies will accompany these interplanetary extractions? What reparations will be made to a galaxy that listens? And how might a cosmopolitics rooted in reciprocity interrupt the silent hum of resource imperialism rebranded as manifest techno destiny?

**You Must Make Yourself Recognisable
(2024, San Pedro de Atacama)**

The desert is a place where the land can blister the skin and burn through certainty, where wind scours the bones of the mountains and enacts a lithic transformation, ossifying you. Dwelling here goes beyond the rhetoric of endurance into a praxis of participation. The desert is a will that can refuse you to become indigenous to such a place; to be received by that which initially sees you as foreign, you must change. Not unlike a body confronting a transplanted organ, where the immune system rises in defence, interpreting the new arrival as a threat. Unless the organ is recognised by the host as essentially itself, it will be rejected. So too, Carlos says, must we undergo transformation before we can be accepted by a land not yet our own. You must make yourself recognisable to it. “You must croon to it, slowly, with humility, until it no longer sees you as invader but as relation.” This is what it means to become indigenous outside the teleology of ancestry, through reverence and reconstitution. He alludes towards a practice that I read as a kind of somaforming, collapsing the distinction between body, community, and the spirit. He says that if you take a penguin from the Antarctic and place it on the equator, it will die. You might delay this with technology, with artificial cooling or atmospheric regulation, but ultimately, the land will reject it, and the people who belong to that place will resist. “There will be contention,” he says. “People will fight.” From this, he draws a lesson for space exploration: before sending humans to distant planets or moons, we must understand what kind of human is being sent. Adaptation must begin here, on Earth, in our deserts and ice fields, in the crucibles of extreme ecosystems that already test the limits of life. But he insists it cannot be only physical or social adaptation that prepares us.

There is also a spiritual preparation required. “When we arrived here,” he says, speaking of his ancestors’ relationship to land, “we introduced ourselves first, not with machines, but with respect for the technology of the language, of the desert’s own tongue, we sang our dreams with the land”²⁵. That spiritual dimension, often neglected by science, is essential. He speaks of *Ayni*, the Andean principle of sacred reciprocity, as a way of entering a new place through relation rather than conquest. Carlos thinks survivance²⁶ in alien environments will demand more than engineering, that it will require humans capable of psychic communication, of connecting through thought rather than wires. Carlos explains that thought itself is like water, like a river, it has direction, speed, a source, and a destination. It can travel across vast distances, unbound by space. “To live well in another world,” he says, “people must be psychic. They must also be pure of heart.” In the presence of other intelligences, for those who are more evolved, who no longer dwell in violence or deceit, it is not strength or knowledge that earns passage, but integrity. “Evolved beings do not live in evil,” he says. “They won’t tolerate it. You cannot carry harm in your heart and expect to be welcomed.” Adaption is a spiritual threshold, becoming worthy of entering the sacred ecology of another world.

I ask Carlos if he would do a ritual on Mars, what would it look like. He answers without hesitation. “For me, as Likan Antai,” he says, “if I were to arrive on Mars, I would have to do an *Ayni*. I’d have to introduce myself: Who am I? What is my purpose in this land? What do I want to

- 25** Indigeneity offers a counter-map here. Like Sherpas whose expertise in exploration and extreme environments is analogous to extraterrestrial exploration. There are so many lessons to be drawn from the world’s poor, whose resilience in extreme environments mirrors the demands of off-world life, the refugee whose knowledge of liminality of belonging nowhere and everywhere sheds a wealth of nuance on how to learn to be indigenous to alien hostile land. What would it mean to take seriously the techno-poetics of the disenfranchised? To invite them fully into consultation and authorship? We cannot afford to dream futures that replicate the exclusions of the present.
- 26** The concept of survivance, as articulated by Anishinaabe scholar Gerald Vizenor (1999), frames Indigenous presence as an active, generative refusal to be positioned as merely surviving. It is not survival in aftermath but a form of creative, narrative continuity, “an active sense of presence, the continuance of stories, not a mere reaction”. Carlos’s articulation of *Ayni*, the Andean ethic of reciprocal becoming, resonates deeply with this mode of relational persistence: survivance as spiritual protocol, not conquest. Lakota artist Cannupa Hanska Luger further expands survivance into the realm of speculative art and embodied futurism. For Luger, survivance is a technology, it is a method of “becoming a good ancestor”, of designing futurity through relation rather than rupture. In this sense, Carlos’s invocation of survivance in “alien” terrains is methodological. To approach space, or any new landscape, through *Ayni* and survivance is to cultivate the ethical conditions for shared existence. It is a cosmopolitical act of dreaming with land, of entering planetary entanglement through respect rather than extraction.

learn, or offer, or repair?” I press for more material texture, what would he offer, who would he call upon? He smiles and lifts one of the stones from his necklace. “Each one of these,” he says, “is a *hualca*, a mountain stone. We leave them in places when there is nothing. When you’re walking through the mountains and you have no food, no shelter, you leave a *hualca*. It is a way of giving something, even in scarcity.” On Mars, he tells me, he would carry a *hualca*. And he would bury it. Even if there were no life, no soil, no breath, he would leave that stone as an offering. A signal that he had come in reciprocity. “These stones,” he says, “they’re are relation. If I give you one, it means you are part of my story now.”

Coca, he adds, is another kind of companion. A plant that walks with the body in altitude, that knows how to negotiate thin air and sharp wind. “You asked if coca could be useful in space,” he says, and then he smiles. “Let me tell you a story.” He speaks of the bodies found by archaeologists high in the Andes, those frozen figures often called mummies. Carlos thinks of them as messengers, still asleep. “They weren’t dead,” he tells me. “They were in a kind of hibernation. They had to deliver a message across time.” To enter that state, Carlos explains, you had to eat only three things: *coca* leaves, corn, and potatoes. No other food. *Coca*, in particular, is the key. It alters the body’s relationship to cold, to time. “It is the secret of not freezing in the mountains,” he says. “When it’s minus 20, minus 40 degrees, the body doesn’t freeze if it’s full of starch, not water. Starch doesn’t break like ice. You change your cells. You become someone else. That’s how our ancestors survived.” He pauses. “These are stories. I haven’t tested them. But I carry them. This is knowledge that hasn’t yet been used. Maybe one day, when the waters rise, when we have to return to the high mountains again, we will remember it.” He looks at me and adds: “Maybe it will be useful on Mars” Carlos challenges our categories of technology, of journeying, and of temporality when he cites the confluence of starch and *coca* and the breath of a mountain stone as a generative force for survivance²⁷.

27 Carlos’s evocation of starch, coca, and mountain breath as speculative technologies of adaptation resonates with emerging queer and decolonial critiques of space exploration that call for a transformation of human embodiment before expansion. Scholars such as Susan Stryker, Mel Y. Chen, and Hil Malatino have theorised trans and disabled bodies as already-alien embodiments, structures that disturb the liberal humanist ideal of the self-contained, rational explorer. In speculative feminist contexts, Sophie Lewis and Paul B. Preciado have likewise suggested that rather than exporting a colonial body-model into extraterrestrial domains, we must first engage in somatic fugitivity, reconfiguring our metabolic, affective, and relational architectures to be adequate to non-Earthly ecologies. This aligns with Luciana Parisi’s suggestion that post-human bodies must become

Our Debts are so very deep (2024, San Pedro de Atacama)

Dust gathers in the canal's corners, a river runs thin today, light descends on us fiercely in tones of overexposure, burning stone, bone, and canal with the long memory of ongoing drought. Beside me, Orlando Martínez lights up a cigarette, and I wonder if his knees carry an imprint of channel stones; his palms, though, look like they have weathered a few dry seasons. The sky above us stretches wide without pause. Orlando is the *Celador* (caretaker). "In Kunza, the name is *purikamani*." *Puri*-water. *Kamani*-guardian, interpreter, judge, steward. One who listens at the mouth of the river and measures the fairness of its gift. His labour is to divide a river into bite-sized portions, two hours for each hectare of land, one hour for a half. Time arrives here as a serpent of water, the *celador* crafting its choreography, directing moisture by design into the roots of maize, into the soft mouths of llamas, and the community. Does this choreography extend to the pads of foxes and the thirsted bellies of wild things like Chilean woodstar, one of the world's rarest hummingbirds?

I listen, and I think of a different kind of allocation. What is the price of a hummingbird? Trying to make a hummingbird compliant with market-based logic is how most governments approach the climate crisis. It captures the absurd and brutal way that economics engages with nature, living things that only become meaningful when rendered into data, the miracle of pollination, mitochondria, and sentience rewritten as ecosystem services. Gratuity not included. Our debts are deep. Our debts are so very deep. When NASA's perseverance captured the sound of ingenuity flying a 872 ft round trip on the surface of Mars on April 30, 2021, all I heard was a cyborg hummingbird. The little Martian spacecraft drew deeply from the form of this earthly creature, light wings, light bodies, increased wingbeats and blades/wings that mimic the bird's alula to fly in the thin air of the red planet. 20 million years of the evolutionary wisdom of a creature that weighs less than 18 g that helped fly another critter on a planet 311 million kilometres away. Does a *celador* suffer the indignity of this transcription? Is the *purakamani* able to resist this reduction? The San Pedro River flows through a skeletal network of open channels. Official documents describe

computationally permeable and with Avery Gordon's theory of haunted flesh as that which remembers prior violences and resists repetition. In this framework, Carlos's speculative ancestral technology is not folklore but ontological rehearsal: knowledge "not yet used", held in reserve for a time when survival is not conquest but transformation. The refusal to rush towards Mars without such transformation echoes what Octavia Butler dramatises as the slow unfolding of a body-learning, where flesh must change before terrain can be claimed. These thinkers together invite a radical question: what if the future astronaut is not a hero but a shapeshifter?

an allocation of 100 litres per second for Coyo. Orlando speaks of what his body knows: 60 litres, sometimes 80, reaching the canal's edge. The rest disperses elsewhere upstream to slake the thirst of industrial polydipsia or melt into the air. Madre Tierra asks all of bodies, their water, and it is given. I ask what water means here. "It is life," he says. He speaks of Vilama and San Pedro. Two rivers that have shaped this valley, both carrying history. Vilama's waters once grew a whole orchard of shade until the slow coil of the heavy metal run-offs from industry turned leaves into fists, tree roots flinching at the snaking streams of arsenic in its veins. Petrochemical Atacama, tributary of toxicity. I gesture towards the flaccid stream in front of us and I offer a thought: bryophytes are a species shaped by extreme attention, their mossy leaf margins finely evolved to cradle moisture with unmatched precision. Moss leaf edges have evolved seventy-three distinct variations, an entire vocabulary of edges that are fine-tuned to the task of holding of water. Of holding water. "The edge of a leaf is not simply uneven," Robin Wall Kimmerer writes. "There is a glossary of specific words for the appearance of a leaf margin: dentate for large, coarse teeth, serrate for a sawblade edge, serrulate if the teeth are fine and even, ciliate for a fringe along the edge." This ancient conversation between moss and its longing for water is reflexive, desire remakes the seeker, and the moss wears the identity of its thirst. "Every nuance of moss architecture has a word." (2003) Orlando nods. "In the past," he says, "we brought the water with our hands. We made offerings, *coca* leaves, *loja*, *quilabana*. We carried these to the hills—Licancabur, Lascar, Pután. These are our guardians. They direct the clouds. They send the rain."

Ceremony moves in a system of reciprocity. Rain is invoked by songs, by fermented breath and the voice of the mountain. The lithium fields shine across the horizon somewhere, turquoise mirrors spread across the desert like a wound dressed in disarming beauty. I wonder if these reflect the dark constellations as clearly. Orlando speaks without bitterness. "They take the water," he says. "They bring money to nearby communities. People accept it. We live close to the river, so we feel the loss more quickly. It dries around us first." I ask Orlando if he can imagine his knowledge carrying forward, maybe even to another planet. To Mars. To a place shaped by similar dryness, similar extremity. Could a *purikamani* choreograph the flow of water in an extraterrestrial future?

He doesn't answer. His gaze remains intent on his cigarette as if annoyed at its exhaustion, the water channel trickles before threading through sun-scoured stone. The silence stretches, dense resistance from

him. This is a stillness that I'm becoming familiar with, the stillness that follows in the wake of an uncomfortable question. Akin to a stunting of speculative futures-based imagination. This stifled imagination is not a question of capacity but emerges from a lack of invitation. I ask again, softer this time: "Do you think, if humans ever live there, they will need someone to portion water with care? Someone to listen for what belongs to the land and what might be shared? Someone who knows that not every gift is ours to take?" He turns towards me slowly, his expression unreadable. He draws the last puff on his cigarette and exhales. The smoke rises like a fragment of a rainless cloud. "That would be beautiful," he says, finally. "To begin again with protection." And then, after a pause: "But first, there must be a listening. there must also be offering." And that is all he is going to say on the matter.

Hydrofeminism Incarnate (2019, Cambridge)

The Community Bio-Summit is an annual gathering that takes place at the MIT Media Lab. Synthetic biology is an emerging discipline that applies engineering principles to biology. It aims at the redesign and fabrication of biological components and systems that do not exist in the natural world. The summit teems with bio-hackers, bio-makers, dreamers, post-naturalists, DIY scientists, their creativity tuned to conjure life in silicon and petri dishes, dreamers trying to recreate woolly mammoths from strands of fossil DNA, distilling the scent of extinct flowers into molecular echoes, splicing jellyfish genes into rabbits to make them glow like submerged creaturely chimaeras. The air hums with optimism. But towards the end of the day, a different frequency enters the room.

One person draws my gaze. The water protector, this is the title she chose. She takes the stage like the force she is, adorned in ceremonial jewellery that catches the fluorescence of the auditorium lights. LaDonna Brave Bull Allard. She was a Dakota historian, an Indigenous archivist of memory, and the force behind the Sacred Stone Camp, the first of the resistance camps that rose against the Dakota Access Pipeline in 2016. Her homeland, the Standing Rock Sioux Reservation, was violently trespassed by the black veins of oil infrastructure, burrowing through sacred burial grounds and slicing across the Missouri River, the source of drinking water for her people. The pipeline, like so many extractive infrastructures, was a violation of land, a desecration of ancestral memory, of kinship, of water as relation. She begins to speak, fluent in the syntax of Earth. She tells stories of the land as a sentient being. Of coyotes who

bring messages. Of corn as elder. Of water that remembers the shape of every body it has ever passed through. She says that Indigenous peoples have always been scientists, that they have always known how to listen, not to extract, but to attune. That Western science, for all its instruments, still does not know how to listen to Indigenous knowledge. Her words move like groundwater, slow, persistent, nourishing and eroding all at once.

Then, someone in the audience asks what she thinks about space exploration. Her cadence falters, her body, moments ago fluid with story, actually begins to rage. “We have broken our mother,” she says, voice cracking. “And now you speak of leaving, to go break someone else’s home?” Her anger is palpable, I have never heard someone so angry in public on the Media Lab stage. “Even if everyone on Earth leaves, I will not leave. Our people will not leave. We will stay to heal the Earth. I will stay to heal my mother.” They are all clapping, but I can hear the silence. It is deafening.

Hydrofeminism incarnate. Hers is a cosmopolitics that resists the lure of escape velocity, of gravity, it stays with the trouble²⁸. For 320 days, she put her body on the line as a tool of resistance. Despite intense confrontations at the business end of rubber bullets, where water cannons shattered the winter air, and tear gas choked the lungs of peaceful protestors. Over 300 bodies were marked by violence, 26 were hospitalised, and hundreds more carried fractures, hypothermia, seizures, and soft tissue trauma (Amnesty International 2017). This is just a record of trauma enfolded, there were other violences too, to land and conscience, moving in multiple registers, a fracture in the ethical fabric of relation. The Dakota Access Pipeline advanced like a scalpel across burial grounds and sacred geographies, carrying with it the contagion of amnesia, slicing through cosmologies with the cold logic of extraction. It treated water as asset, land as corridor, memory as obstruction. The river long known as elder, as sustainer, as witness was made into ledger entry, stripped of voice. A corporation asks for your body’s water. Forcibly taken.

When LaDonna’s words collide with the techno-optimist’s ecosystem, they reveal a fracture at its heart: the question of how to engineer life with ceremony. Her refusal draws a line in the dust, inviting us to imagine a space program grounded in the ethics of staying, of tending to soil and water, of remaining accountable to the wounds that it produces. It pierces the seductive

28 The phrase “stays with the trouble” references Donna Haraway’s (2016) call to resist the seductions of transcendence, resolution, and planetary escape in favour of situated, messy, and co-constitutive entanglements. Her work proposes response-ability, a form of ethical attunement grounded in ongoing relations rather than techno-fixes or linear progress narratives.

fantasy of molecular chauvinism, a fantasy that, when pursued to its logical extreme, swells into the god complex, the Lazarus trope of resurrecting the woolly mammoth. This gargantuan project of de-extinction unfolds across the fossil record, lab-synthesised embryos, and speculative synthetic wombs²⁹. It is a spectacular project, indeed a spectacle, too. From what little we know about elephant consciousness, the pachyderms are creatures capable of kinship, culture, memory, and even history. In the Velds of South Africa, adolescent bull elephants who had grown up knowing nothing but the language of violence, orphaned by colonial-era cullings, had grown wild and violent in the absence of elders, attacking rhinoceroses, vehicles, and one another³⁰. At their wits' end to control these young adults, the government ordered the mass killing of these rogue elephants. Some scientists and conservationists intervened with one last-ditch effort to prevent their deaths. They suggested that older elephants from regions that had not known conflict be introduced to these adolescents, and when they did, it was as if a balm of peace descended on the land. As if the elders arrived with a story and a code of conduct that repaired adolescent pachyderm trauma. Their presence offering a living archive of culture, restraint, and social rhythm. It was the return of memory. If this story illustrates anything, it is that we already know what violence it inflicts to extract a creature from its history.

- 29** The reference points to the de-extinction work led by George Church's lab at Harvard Medical School and the company Colossal Biosciences, which aims to "revive" extinct species such as the woolly mammoth through CRISPR gene editing, interspecies embryo synthesis, and speculative gestation technologies including artificial wombs. Their work straddles the boundary between speculative biotechnology and cinematic spectacle, a blur amplified by their collaboration with Netflix for the documentary *Return of the Mammoth*, produced in 2022 by Unrealistic Ideas (co-founded by Mark Wahlberg). This media partnership serves not merely as public science communication but as infrastructural myth-making, an attempt to narrativise de-extinction as both inevitable and desirable. The project has been critiqued by scholars such as Claire Colebrook, Eben Kirksey, and Carrie Friese for its alignment with post-natural capitalist fantasies and the instrumentalisation of reproductive technologies for planetary-scale ecological restoration without political or cosmological accountability.
- 30** The story of the adolescent elephants orphaned by apartheid-era culling and their rehabilitation through the introduction of older males has been cited in conservation biology and ethology as compelling evidence for the cultural transmission of behaviour among elephants. Researchers such as Joyce Poole and Cynthia Moss have documented that elephants learn emotional regulation, migration routes, and social etiquette through intergenerational knowledge, what Barbara King calls "animal culture" (2013). In the context of de-extinction, this story becomes a cautionary allegory. The revival of mammoths or any extinct species through genomic reconstruction typically isolates genetic code from relational code overlooking the kin networks, sonic grammars, migratory patterns, and ancestral mourning practices that constitute a species' cultural lifeworld. This critique echoes Indigenous epistemologies that refuse this separation. As scholars like Kim TallBear and Vanessa Watts remind us, existence without kinship is not life but spectral occupation.

It is into this ahistorical time now that we summon the mammoth, coaxed out from extinction and placed into a world that no longer remembers it. Solitary, no kin left alive to teach it the etiquette of tundra winds, the choreography of migration, the long mourning of ice. What violence accompanies such a return? A species capable of using the earth itself as an instrument to communicate, while the land is deaf to its longing for its kin.

And yet, memory need not always take the shape of resurrection. Orchids remind us of other strategies, *Ophrys apifera*³¹, the bee orchid, petals describe in cellulose and chemistry the intimate curves of its corresponding (chosen) female bee or wasp's genitalia. A resonant ode to the very site and infrastructure of creation, whose evolutionary entanglement persisted despite the rupture of its pollinator's compact. The bee who once pollinated its petals is long since extinct, vanished utterly from the earth, and yet its memory remains to us in the language of pollen, petal, and pheromone. And we are left with a reminder that in our own creaturely entanglements, we carry both memory and obligation. We are "involved" intimately, inextricably in the lifeways of other species. There are other ways to be haunted.

LaDonna reminds us that there is productive potential in refusal³². Refusal of amnesia. Refusal, too, can be a generative act of creation, non-making as a making act, a making otherwise. Just as cosmological

31 This botanical fidelity enacts what Anna Tsing (2015) calls the arts of noticing, a form of multi-species memory amidst ecological rupture. Natasha Myers (2017) frames such floral gestures as plant knowledge, acts of world-making through form and affect. Here, the orchid becomes a floral semiotician, remembering lost intimacy through scent, pigment, and posture.

32 Meanwhile, Mohawk scholar Audra Simpson thickens the materiality of resistance through her theorisation of "refusal", outlining political strategies that counter the extractive imperatives of colonial authority. In *Mohawk Interruptus*, Simpson demonstrates how the Kahnawà:ke Mohawks at the US-Canada border practice a politics of refusal, rejecting Canadian citizenship by travelling on their own passports and resisting the frameworks through which the settler state seeks to recognise and contain them. Practising Refusal can be an epistemic posture and an assertive modality, a method of sustaining Indigenous sovereignty both within and against the jurisdictional fictions of settler states. What would it mean to refuse the colonial terms of space science? It could mean rejecting the reflex to plant flags on extraterrestrial land, refusing the doctrine of first possession, declining the invitation to mine and desecrate before we know how to consecrate, a multispecies refusal might reimagine planetary contact not as possession but as co-presence. Civil disobedience once drew the venom of colonisation out from Indian bodies, coaxing sovereignty through embodied defiance; refusal can serve as crucible for generation, a site where resistance ripens into relation. What this framework can do is to insist that the calculus of space development include the debts still unpaid on Earth, the unpaid labor of colonised peoples, the extractive scars slashed into Indigenous homelands, the epistemicides that cleared the way for STEM imperialism, it demands a vertical reparative justice transected across groundwater table to the exoplanetary, where extractive endeavours beseech community consent and cultural consultation, with global profit-sharing mechanisms that centre those most impacted by the legacies of conquest.

attunement to space can root itself in the gravity of staying put, in honouring the entangled weight of earth rather than reaching blindly skywards, so too can synthetic biology cultivate a praxis of ceremony and restraint, calibrated to the scale of interdependence. From this, a different kind of bioethics might emerge, less obsessed with invention, more attuned to relational continuity. Bioethics informed by reverence rather than one governed by regulatory frameworks. Only through that praxis might we begin to understand our obligation when we bring creature, idea, future into being.

To Be Truly Lost (2021, Ladakh)

It is apricot season in Ladakh, the trees are bursting with fruit, and in the valley below, the villagers are plucking, pickling, simmering, stewing fruit for family, friends, and neighbours. Here in the high-altitude reaches of Puga Valley, we search for signs of life as subterranean abundance. This morning, we are on a walk led by astrobiologist Dr Siddharth Pandey of Amity University. His undergrad students are sampling for tardigrades in this geothermal field, searching for extremophiles. The day's events are part of a curriculum to teach skills in analogue exploration, it is a lesson in astrobiological training and the slow art of fieldwork. I follow silently through a valley of ancient geysers, where steam shoots out the earth in stochastic interludes, and try to step gingerly, with regard to my pants and my camera, careful not to disappear into the soft mats of moss and microbial life, thick carpets of orange and green clinging to mineral-rich soil, a primordial soup whose matter might recall the genesis of all life. These hot springs are simultaneously a geological archive and laboratory, serving as proxies for the early Earth, potential Martian terrains, and the bio-possibilities of other worlds. Their fumaroles, hot springs, and mineral-licked mosses offer glimpses into the evolutionary resilience of life. This is one of the sites we are recce-ing with the aim of establishing a permanent base for India's first Mars Analogue Space Exploration mission. Alongside the scientific and institutional endeavour, my research concerns itself with the local Changpa community, wondering how to invoke community knowledge into the architecture, and meta-architecture, of the research station and its constituent science itself. The days blur with the double exposure to dual epistemes, one landscape seen through the lens of planetary science, the other through the grammar of kinship. Alongside the scientific surveys, I spend time with Jigmet and see a glimpse of daily acts of orienting to the cosmos; in the pitching of the *rebo* (yak hair tents),

every act of settling for shelter is a daily act of alignment, drawing an axis mundi from earth to sky, tethering the self to the cosmic. The tent is both compass and cradle, tuning fork and altar. It's a nomadic step, theirs, footfalls that step lightly on the earth, leaving very little trace behind. The science shares a fleeting intimacy with landscape, drawing transects, gathering samples, and returning to base camp when the work is complete. But the land, as an interlocutor, speaks differently to each. The cardinal directions in Changpa cosmology are relational. Dawa, Jigmet's grandfather and the eldest elder in the community, tells me there are two categories: one set of directions remains fixed and unwavering, while the other shifts in response to ecological omens, a flight of ravens, a formation of clouds. These signs announce movement and meaning. For the Changpa, navigation is always relational, an interstitial dialogue between fixity and temporality. As long as one carries the map, they possess the ability to orient themselves to a plane composed of earth sky. Theirs is an indigeneity that is not inherited by accident of birth alone nor enacted through possession of land; what makes their indigeneity possible is to possess this map, decrypting every day the architecture of reflexive relation. Dawa worries that as this knowledge dies out in his great-grandchildren, they will find themselves unmoored. Then, he tells me, "they will be truly lost".

What does it mean to be truly lost for Dawa? I reflect on this. What density does the losing of bearings enact on a body? Is the loss of gravity a removal of that density? Is the uncertainty of where home lies a quiet exile from meaning itself? For the Waorani, to be lost and alone is to be unmoored from the web of relations that compose them. Upon finding the Ceiba tree, they pound at its elephantine buttress roots (the way we might pound at our chests to give our grief a voice) in a gesture that vibrates the whole trunk in a "botanical basso profundo call to friends and family", an audible signal fire to reforge the bonds that were broken upon loss. The tribes usually know where the great Ceiba trees are in the forest, the ones big enough to act as homing beacons, and soon the lost one is reunited³³. This creature, which is itself an entanglement of bursting bromeliads, mycelium, and armies of farming leafcutter ants, is the symbolic centre where the individual dissolves into the network, where the lonely go to be found.

33 This gesture exemplifies what Eduardo Kohn calls a semiotics beyond the human, in which trees and their acoustic affordances are active participants in the communicative web of the forest (2013). It also aligns with relational ontologies where personhood is distributed across species and matter, where to be "lost" is not a failure of direction but a rupture in relation. In this cosmo-ecological frame, it is vibratory wayfinding that repairs the social fabric through vegetal resonance.

Sound travels at 8859 miles per hour through wood. Maybe Stradivarius knew this. Maybe he even knew this as he hollowed out the inside of a Sitka spruce pine to build his beautiful violins. Maybe Lord Bryon also knew this when he bought one of those violins for his daughter. Ada, who developed the first algorithm intended to be processed by a machine, making her the first computer programmer, seeded the foundations of modern computation: the very mathematics that make spaceflight possible, that calculate trajectories, steady bodies in orbit, and offer us, even now, the tools to ensure we are *not lost* in space.

In Campbell Island, New Zealand, the world's loneliest tree is a single Sitka spruce, which holds within its heartwood the record of radiocarbon fallout from the above-ground nuclear testing that began in 1945. Supposedly, this signature marks the beginning of a new geological epoch, the start of the Anthropocene, the indelible scar of the atomic age, our clean break with the history of the earth when we became other from the happenings of the planet, from the caress of our animal bodies, from the creaturely migrations that are our planet's very breath, from inside skin and outside skin, from sensual ecology and reverent relationships to everything else. This was one moment of loss, echoing the loss of water, our still-festering open wound. What is the aural quality of loss? Is it the silence of the wind, no longer a passerby through the *rebo's* aperture³⁴, or the deafening bloom of an atomic mushroom cloud? The lost and

34 For the Changpa, the sky is active with suggestions of temporal markers that insist in the labour of survival and care. The domestic then sites the (micro)cosmos. Life in the *rebo* (tent) mimics the cosmos. The placement of hearths, the opening of flaps, the orientation of the *rebo* itself, calibrated in relation to sacred mountains, cardinal directions, and the anticipated paths of celestial bodies, ensure that the household remains in harmony with forces beyond the visible. The hearth, a symbolic and practical nucleus, is carefully positioned not only for warmth or efficiency but for its alignment with cosmological forces, embodying a spatial ethics that binds domesticity to the divine. The *rebo* is outside skin, architecture that is itself a cosmological instrument. A tuning fork for ceremonial orientation. Openings in the *rebo*, flaps, smoke holes, or thresholds are also conceived as metaphysical portals that regulate the flow of energies. Morning light, moonlight, and wind directions are often read and integrated into the household's design choices. These alignments help mediate the balance between protection and permeability, anchoring the household in a reciprocal relationship with its environment. Placement of sacred objects and domestic altars within the *rebo* also reflects a relational cartography, one in which every object has a role in sustaining equilibrium. Items are often arranged in directions that correspond to specific spirits, deities, or elements. These spatial arrangements are reconfigured in accordance with seasonal changes, astrological readings, and major life events such as births, illnesses, or pilgrimages. In this way, the domesticity of the microcosmos becomes a living site of negotiation with the cosmos. As Ingold reminds us, for the Changpa, the act of dwelling is attuning to land and sky and the unseen but never unknowable forces that pass between them.



Image 5. To Be Truly Lost. Photo credits: Prathima Muniyappa.

excommunicated begin their quest in the Anthropocene, searching for the metaphorical ceiba trees in silence. One tree to mark our bereavement and one more to mark our belonging, both their histories written in song. When what you stand on is no longer what you stand for, the fracture becomes ontological. Will a de-extinct woolly mammoth, creature of ice, capable of complex kinship, creature that uses the earth itself as a medium of seismic communication, feel something similar if called out from non-being and released into a world that no longer remembers it? A species plucked out of history and abandoned in ahistorical time, tasked with making meaning in a land unprepared to receive it.

The analogy is intimate; to confront land without story, without being able to hear its resonant rhythm, is to move like a ghost through terrain that does not speak back. Our recce takes us to sites where we project fantasies of terrain that is a-historic, a-cultural, life-`vacant. Our search is charged with the electric thrill that is characteristic of undergraduate curiosity, a pulse that animates every soil sample and site speculation. But this enthusiasm resonates with a more dangerous beat, the corporate dream of extractive futurity. This is where so many off-world fantasies begin, dreaming of arrival upon a clean slate, a resource-rich silence. What if extraterrestrial exploration demands a different kind of beginning, one seeded in post-disaster reckoning, in the long mourning of what has already been lost? A post-disaster world where no tongue has ever known an apricot.

Half-Life of the Long Tomorrow (2023, Central Asia)

One of the most disorienting seasons of fieldwork I undertook during my dissertation was in the summer of 2023 across Central Asia, naively assuming that plains peoples, ever exposed to the fecund firmament of an open sky, would probably be a productive place to seed my own research. That summer, I followed an anthropologist, Dr Tobias Marschall, whose work on circulations and endangerment tropes traces the migration lines of the Kyrgyz pastoralists (2025). Tracing invisible lines from one nomadic encampment to another, I searched for people who could tell me about their cosmology, and I kept coming up short, haunted by the void created by history's violent erasures. Cultural sterilisation followed swiftly by the spread of monotheistic religion, Soviet re-education, and the imposition of atheism, Russification, and scientific rationalism. Waves of epistemic reformatting swept through the region, each one scrubbing the sky of its inhabitants. What was left were faint etchings, barely legible stories, ghost constellations of what had once been spoken freely. At Lake Issyk-Kul, the sky seemed to drop into water, a deep blue reflection without grasp. One of the managers of the campsite told me, "we used to know them by heart". There are archival traces, anthropologists have recorded fragments of old Kyrgyz cosmologies³⁵. Those records speak of Er Töstük, the hero who journeys into the underworld and back. It is said he carries a star on his forehead, a gift from the upper worlds. In some variations, he travels across the sky on an eagle's wing. In others, the stars are ancestral spirits who descend to earth as fire. The heavens are touchable, tangible, and above all, there is Tengri, blue sky, unbounded and awake, the supreme force that gatekeeps order and time. Its rule enacted through the seams of the world. The sky, imagined as a yurt: *tengir-ööi*, the heavenly dwelling. The North Star as *shanaraq*, the central opening, the constellations seated like kin in a circle around the smoke hole. The night sky mirrored their

35 Ethnographic work on Kyrgyz cosmologies, ritual astronomy, mountain-based sky beliefs, and seasonal migration guided by constellations has been documented by scholars such as Kairat Osmonaliev, Klara Moldobaeva, Aitalina Semyonovna, and Elmira Köchümkulova. Köchümkulova's work, in particular, traces cosmological memory through epic poetry, funeral chants, and yurt symbolism, recovering fragments displaced by decades of Soviet re-education. As Bruce Grant and Alaina Lemon have argued, Soviet epistemic regimes often repressed Indigenous cosmologies through boarding schools, censored curricula, and museum ethnography repurposed as ideological apparatus. Yet, the Soviet project was also paradoxically conservationist: it undertook systematic efforts to record Indigenous knowledge, even as it dismantled the conditions for its reproduction. This ambivalence between archival preservation and cultural silencing demands a more textured account than I can offer here. What I can say is that over three months of fieldwork, I found it hard to encounter Kyrgyz cosmology in the first voice.

dwelling place on earth, a recursive architecture where the divine and the domestic met in the curvature of ribs and cosmos. Navigation was celestial and etched into the arteries of circulation that came before; to follow the stars was to move along the paths people had walked before, a muscle memory of sorts. And I know something of muscle memory. Years before, in a fluorescent-lit physiotherapy room, recovering from an ankle broken clean, my therapist instructed me to move my ankle two inches to the left. I recall giving my brain the command, but my foot remained still, unresponsive. In that moment, I felt an embodied certainty that an injury of the body causes a corresponding injury of the mind. My command to move could not be translated because there was no memory of movement to return to in my mind anymore. In my months of rehab that followed, I learned that recovery did not mean to remember how to move, but to relearn the bio-behavioral repertoire anew. A slow grafting of information into limb. Perhaps Kyrgyz history had enacted a similar rupture to the people I was meeting.

In 1945, Anna Prokofyevna Kutyreva posed a provocative question that provided the seed that established the Soviet science of astrobotany: could the observed seasonal shifts in Martian light and shadow be explained as adaptations of hypothetical vegetation to the planet's extreme environmental conditions? Amid rocket launches from Baikonur in the burgeoning space race, a parallel science took root in the astrobiology laboratories. Soviet women scientists, most notably Anna Prokofyevna Kutyreva, Tamara Smirnova, Roza Sobolevskaya, and Zinaida Ershova, carried out early research that would later shape the contours of astrobotany and analogue exploration³⁶. Together with Tikhov, Kutyreva helped establish the Astrobotany Sector in Alma-Ata and constructed a dedicated astrobotany garden. Kutyreva's field experiments in the Pamir highlands built upon the recognition that vegetal entities metabolise adversity. In the thin-air tundra at 5,000 meters above sea level, she studied how alpine plants reoriented their physiology to absorb and retain solar radiation, treating their surfaces as dynamic sensors attuned to spectral flux. Plants, in her interpretation, became the ideal speculative life form for alien environments; their biochemical resilience and their epistemological pliancy in translating landscape into form, climate into gesture, offered a model for life that recalibrates itself in relation to a hostile world. This framework

36 Their work features prominently in the joint publication of Ana Maria Gómez López, Luis Campos, and Ekaterina Lopatina, which situates their speculative science as an early feminist intervention in planetary biology (2024).

inverted the usual logics of interplanetary comparison. Rather than project anthropocentric desires onto Martian terrain, they listened to terrestrial flora as mediators of potential ecologies, witnesses of how life might root itself in unfamiliar ground. Tikhov would later refer to this as “the cosmic role of plants”, suggesting that to understand the Martian landscape, one must first descend into Earth’s own edge conditions, only to climb back up recalibrated. Kuttyreva’s expeditions literalised this motion: collecting alpine vegetation, descending from the high plateaus, and reintroducing these samples into the experimental microcosm of Alma-Ata’s astrobotany garden.

Their research methods were distinctly relational. The garden was a site of tending, study, observation, and interpretation as proxies for alien ecologies. The act of weeding, watering, and documenting plant life under different solar conditions became a scientific praxis rooted in care, cultivation, and iterative observation. Scientific praxis that unfolds through the garden as a medium challenged the Cold War contentions of conquest and control, centring a model of attention, maintenance, and terrestrial analogy instead. It is a critical feminist reading of astrobiology’s origin story where the search for life becomes entangled with the politics of care and the ethics of labour. Across the country, in the Semipalatinsk Test Site, also known as the Polygon³⁷, the Soviet Union conducted over 450 nuclear detonations between 1949 and 1989, wounds that never scabbed over. The soil is teeming with isotopes. The air holds the echo of shockwaves. Access must be granted by the Kazakh government. I enter as a body armoured, in a radiation suit, gloves, respirators, Geiger counters twitching like nervous birds, my own heart mirroring that frantic beat. Wrapped in synthetic layers, I feel both protected and penetrated. The latency of violence is palpable.

37 The Semipalatinsk Test Site, also known as the Polygon, was the primary nuclear weapons testing ground of the Soviet Union between 1949 and 1989. Located in northeastern Kazakhstan, it was the site of over 456 nuclear detonations, including 116 atmospheric and 340 underground tests, many of which were conducted in proximity to civilian populations. These experiments resulted in widespread radiation exposure, genetic damage, and long-term ecological degradation across the steppe, producing what scholars and activists have since named a “nuclear sacrifice zone” (Lindee 2003; Masco 2006). The contrast between the relational methodologies of Soviet astrobotany, rooted in garden care, iterative observation, and ecological metaphor, and the extractive violence of nuclear science at the Polygon illuminates a fractured epistemology of science within the Soviet project. While one arm of technoscience cultivated interplanetary life through analogue gardens, another rendered the land uninhabitable through radioactive colonisation. This disjuncture speaks to the tension between care and control, between Earth as kin and Earth as substrate, between tending and testing. Scholars such as Kate Brown (*Plutopia*, 2013) and Adriana Petryna (*Life Exposed*, 2002) have documented the enduring legacy of the Polygon not only in epidemiological terms but as a site of epistemic violence, where science operated through secrecy, sacrifice, and silence.

It looks deceptively plain enough: dry scrub, distant mountains, but every time I look down to see my hazmat suit-clad hand, I cannot help but imagine the toxicity. Despite the memory of Covid still fresh, the feeling of mask-bound breath, sterility protocols, of becoming numb to death tolls, Semipalatinsk feels like a world more potently wrong. A world irradiated by atomic violence: an ontological misalignment. Inside a rusting bunker, I feel time coagulate like hardened cotton candy, metal and concrete sweat minerals, dust clings to every surface like toxin; this is the fallout from splitting atoms, fevered dreams of scientific mastery gone wrong. In my bones, I feel Hecht's shadow geographies of exposure press up against my skin. Scholars like Joseph Masco have shown how nuclear imaginaries seep into national identities, shaping speculative futures as much as they memorialise past destruction. These test sites are the laboratories of the Anthropocene, built on desecration and pulsing with memory that demands your gaze. It is a place where science once dreamed of mastery, and in its dreaming, split atoms, and bodies and bones. I recall Kate Brown's chilling portrait of Chernobyl that grabs us by the scruff of the neck to confront the irreversible impact of man-made radioactivity on every living thing and that forces a reckoning with the untold legacy of decades of weapons testing and nuclear incidents. As Dylan Trigg reminds us in his meditations on ruins, the land that experiences rupture continues to think, to speak, to mutate, operating as sensorial thresholds—structures in the midst of transition, where memory and matter collapse into one another. To walk among them is to be touched by their latency. They unsettle linear time, forcing a reckoning with the unforgotten, the unforgettable. Nuclear fallout embeds itself in muscle memory, in the cytoplasm of living tissue, in a single Sitka spruce's core memory. Their saturated silence demands in us a commensurate recalibration, a reckoning with the fact that we are emerging into a future for which the survival manual has yet to be written.

These ghosts make demands of science, they demand reflexivity beyond invention, demand witnessing, demand grieving. I recall a conversation with an MIT student preparing for a NASA challenge on building space habitats during a hack-a-thon. Their team was designing an in-situ lunar regolith mining prototype, and they were looking to assemble a team. When I asked them if I could join the project as an artist to create a ritual of consecration before desecrating the regolith, they declined, citing a need for technical expertise. In the rush to terraform, to extract, to prototype futures, the gesture of consecration, a gesture grounded in care, humility, and relation, is seldom seen as necessary, and as an afterthought at worst, but what else can

follow ruin if not reparation? Indigeneity offers a counter-map here, a way of crafting belonging that does not presume dominion. Indigenous practices of stewardship ceremony, ritual, witnessing, and refusal are methods of consecration, technologies of reverence to resurrect dead worlds.

One of the projects I suggest to Amity University is an Analogue research simulation, or more precisely, a post-disaster analogue residency for artists, technologists, and thinkers, sited in places like Semipalatinsk or the Aral Sea, or Pokhran, India's nuclear test site, or Vidharba, in places thick with post-human hauntology. The imaginaries of space exploration cannot be born solely in clean rooms and deserts seeking ahistorical temporalities; they must also be emergent from thinking sites of cataclysmic rupture. What would it mean to design for a world already truly lost, to create art and science that do not begin from a blank slate but from the cracked and bleeding ground of collective memory³⁸? We need to bookend imaginaries of exploration from arrival and from endings. That know how to grieve. That rehearse repair. Because the only way to alter the future is to journey across the wreckage of the past.

38 What futures are built on the detritus of the disappeared? This is the provocation of the artist residency I am developing with Amity University to take place in March 2026. It is a proposed Analogue space mission imagined in the aftermath of planetary rupture. Every single analogue exploration is sited on terrain that is explicitly ahistorical or pre-human, and his speculative residency imagines a human-made post-disaster terrain in Pokhran, India's nuclear test site where the earth itself has been made archive and where toxicity, time, and memory congeal into atmosphere. This speculative residency is grounded in a simple premise: what if the end has already happened? Participants arrive on a fictional exoplanet ($\tau(n)$). They wake as a small band of survivors cryogenically preserved and now reanimated by a dormant emergency protocol. All archives have been lost. There is no clarity about what led to collapse. There is only the charge to begin again. Over two weeks, participants inhabit character-based roles, part pre-scripted and the rest improvised, as collective world-building. They are given only fragments: a shared disaster, a desecrated land, the absence of memory. Their task is to ritualise new forms of sensing, grieving, storytelling, and making a laboratory for speculative survivance, where creation is the only form of continuity.



Image 6. Half-Life of the Long Tomorrow. Photo credits: Prathima Muniyappa.

Bibliography

- Acket-Goemaere, A., Chui, M., Hall, S., Henke, N., Ligon, C., Nauta, W., & Van der Velden, E. (2024, April). *Space: The \$1.8 trillion opportunity for global economic growth*. McKinsey & Company & World Economic Forum.
- Alaimo, S. (2010). *Bodily Natures: Science, Environment, and the Material Self*. Indiana University Press.
- Amnesty International. (2017). *The World Is Watching: Mass Violations by U.S. Police of Indigenous Rights at Standing Rock*. Amnesty International.
- Ataniyazova, O., Semenova, Y., & Usmanova, G. (2001). *Health and Ecological Consequences of the Aral Sea Crisis*. Karakalpak Center for Reproductive Health and Environment.
- Balakrishnan, S. (2019). *Shareholder Cities: Land Transformations Along Urban Corridors in India*. University of Pennsylvania Press.
- Bélanger, P. (2016). *Landscape as Infrastructure: A Typology of Operations*. MIT Press.
- Boelens, R., Perreault, T., & Vos, J. (Eds.). (2016). *Water Justice*. Cambridge University Press.
- Bhattacharya, S. (2025, May 29). India's War Against Maoist Rebels Reaches Decisive Point. *The Diplomat*. <https://thediplomat.com/2025/05/indias-war-against-maoist-rebels-reaches-decisive-point/>
- Brown, K. (2013). *Plutopia: Nuclear Families, Atomic Cities, and the Great Soviet and American Plutonium Disasters*. Oxford University Press.
- Butler, O. E. (1993). *Parable of the Sower*. Four Walls Eight Windows.
- Caziani, S. M., Rocha, O., Rodríguez, E., Romano, M., & Derlindati, E. (2020). Decline in Flamingo Nesting due to Lithium Extraction. *Ecological Indicators*, 108, 105703. <https://doi.org/10.1016/j.ecolind.2019.105703>
- Colebrook, C. (2014). *Death of the Posthuman: Essays on Extinction* (Vol. 1). Open Humanities Press.
- Colossal Biosciences & Netflix. (2022). *Return of the Mammoth* [Documentary]. Unrealistic Ideas.
- Cowen, D. (2014). *The Deadly Life of Logistics: Mapping Violence in Global Trade*. University of Minnesota Press.
- Cruikshank, J. (2005). *Do Glaciers Listen? Local Knowledge, Colonial Encounters, and Social Imagination*. UBC Press.
- de Castro, E. V. (2014). *Cannibal Metaphysics: For a Post-structural Anthropology* (Peter Skafish, Trans.). Univocal Publishing.
- de la Cadena, M. (2015). *Earth Beings: Ecologies of Practice Across Andean Worlds*. Duke University Press.
- DeLoughrey, E. (2014). Satellite Planetary and the Ends of the Earth. *Public Culture*, 26(2), 257–280. <https://doi.org/10.1215/08992363-2392037>
- Derrida, J. (1994). *Specters of Marx: The State of the Debt, the Work of Mourning and the New International* (Peggy Kamuf, Trans.). Routledge.
- Díaz, G. B., Barberis, I., Romano, M., & Derlindati, E. (2018). Flamingo Populations and Salt Extraction. *Bird Conservation International*, 28(1), 45–62. <https://doi.org/10.1017/S0959270917000194>
- Friese, C. (2013). *Cloning Wild Life: Zoos, Captivity, and the Future of Endangered Animals*. New York University Press.
- Glantz, S. A. (2005). Environmental Hazards and Birth Defects. *Environmental Health Perspectives*, 113(1), 103–110. <https://doi.org/10.1289/ehp.7219>
- Gómez López, A. M., Campos, L., & Lopatina, E. (2024). Spectral Legacies: Cultivating Feminist Spaces in the Soviet Search for Life on Mars. In Marie Pier Boucher, Claire Webb, & Annik Bureau (Eds.), *Space Feminisms: People, Planets, Power* (pp. 48–65). MIT Press.
- Gordon, A. F. (1997). *Ghostly Matters: Haunting and the Sociological Imagination*. University of Minnesota Press.
- Grant, B. (1995). *In the Soviet House of Culture: A Century of Perestroikas*. Princeton University Press.

- Grossman, E. (2006). *High Tech Trash: Digital Devices, Hidden Toxics, and Human Health*. Island Press.
- Gudavarthy, A. (2012). *Maoism, Democracy and Globalisation: Cross-Currents in Indian Politics*. SAGE Publications India.
- Gudynas, E. (2011). Buen Vivir: Today's Tomorrow. *Development*, 54(4), 441–447. <https://doi.org/10.1057/dev.2011.86>
- Hand, K. P., Chyba, C. F., Carlson, R. W., & Cooper, J. F. (2009). Astrobiology and the Potential for Life on Europa. *Astrobiology*, 9(1), 1–17. <https://doi.org/10.1089/ast.2008.0278>
- Haraway, D. J. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14(3), 575–599.
- Haraway, D. J. (2016). *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press.
- Kimmerer, R. W. (2003). *Gathering Moss: A Natural and Cultural History of Mosses*. Oregon State University Press.
- Kimmerer, R. W. (2013). The Honorable Harvest. In *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* (pp. 175–201). Milkweed Editions.
- King, B. J. (2013). *How Animals Grieve*. University of Chicago Press.
- Klinger, J. M. (2017). *Rare Earth Frontiers: From Terrestrial Subsoils to Lunar Landscapes*. Cornell University Press.
- Kohn, E. (2013). *How Forests Think: Toward an Anthropology Beyond the Human*. University of California Press.
- Köchümkulova, E. (2003). Sacred Sites and Oral Epics: Cultural Memory and Identity in Kyrgyzstan. *Central Asian Survey*, 22(3), 235–250.
- Kuzmina, A. A. (2015). Ethnic Identification in the Sakha Olonkho, Kyrgyz Manas, and Altai Heroic Narratives. In I. M. Varlamova (Ed.), *Mythology, Narratives, and Knowledge of Indigenous Peoples of the North* (pp. 89–96). Institute of Humanitarian Research and Problems of Indigenous Peoples of the North, SB RAS.
- Le Billon, P. (2001). The Geopolitics of Resource Wars. *Political Geography*, 20(5), 561–584.
- Lemon, A. (2018). *Technology and the Making of People: Soviet Sound*. Indiana University Press.
- Lewis, S. (2019). *Full Surrogacy Now: Feminism Against Family*. Verso Books.
- Lindee, M. S. (2003). *Suffering Made Real: American Science and the Survivors at Hiroshima*. University of Chicago Press.
- Luger, C. H. (2021). The Future Is Decolonial. *The Art Newspaper*.
- Malatino, H. (2020). *Trans Sare*. University of Minnesota Press.
- Marschall, T. (2025). Writing Travel and the Genealogical Imagination: Afghan Kyrgyz Migrations in Contemporary Perspective. *Central Asian Survey*, 1–19. <https://doi.org/10.1080/02634937.2024.2441808>
- Masco, J. (2006). *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*. Princeton University Press.
- Mauss, M. (1990). *The Gift: The Form and Reason for Exchange in Archaic Societies* (W. D. Halls, Trans.). Routledge.
- Mbembe, A. (2019). *Necropolitics* (Steven Corcoran, Trans.). Duke University Press.
- McKinsey & Company & World Economic Forum. (2025). *The \$630 Billion Space Economy: Joint Report*. Author.
- Mol, A. (2008). *The Logic of Care: Health and the Problem of Patient Choice*. Routledge.
- Myers, N. (2017). From Edenic Apocalypse to Gardens Against Eden. *NatureCulture*, 3, 1–30.
- Nathues, A., Hoffmann, M., Platz, T., Thangjam, G. S., Cloutis, E. A., Reddy, V., et al. (2015). Hydrated Sodium Carbonate on Ceres. *Nature*, 528, 237–240. <https://doi.org/10.1038/nature15754>
- Neilson, H. (2020). *Decolonizing Astronomy: A White Paper*. Canadian Science Policy Centre. <https://sciencepolicy.ca/news/decolonizing-astronomy-white-paper-hilding-neilson/>
- Neimanis, A. (2017). *Bodies of Water: Posthuman Feminist Phenomenology*. Bloomsbury.

- Nixon, R. (2011). *Slow Violence and the Environmentalism of the Poor*. Harvard University Press.
- Paglen, T. (2010). *Invisible: Covert Operations and Classified Landscapes*. Aperture.
- Parisi, L. (2013). *Contagious Architecture: Computation, Aesthetics, and Space*. MIT Press.
- Parks, L. (2008). Satellite Views: Reflecting on the Power of Orbit. *Social Text*, 26(3), 92–113.
- Petryna, A. (2002). *Life Exposed: Biological Citizens After Chernobyl*. Princeton University Press.
- Poole, J. H. (1996). Elephants: The Struggle for Coexistence. *National Geographic*, 189(5), 32–59.
- Postberg, F., Khawaja, N., Abel, B., Choblet, G., Glein, C. R., Gudipati, M. S., Waite, J. H. (2018). Macromolecular Organic Compounds from the Depths of Enceladus. *Nature*, 558, 564–568. <https://doi.org/10.1038/s41586-018-0246-4>
- Preciado, P. B. (2013). *Testo Junkie: Sex, Drugs, and Biopolitics in the Pharmacopornographic Era*. The Feminist Press.
- Redfield, P. (2013). *Life in Crisis: The Ethical Journey of Doctors Without Borders*. University of California Press.
- Rose, D. B. (2004). *Reports From a Wild Country: Ethics for Decolonisation*. UNSW Press.
- Ross, L., & SisterSong Women of Color Reproductive Justice Collective. (2007). *Reproductive Justice: An Introduction*. SisterSong.
- Roy, A. (2011). *Walking With the Comrades*. Penguin Books.
- Shah, A. (2018). *Nightmarch: Among India's Revolutionary Guerrillas*. University of Chicago Press.
- Simpson, A. (2014). *Mohawk Interruptus: Political Life Across the Borders of Settler States*. Duke University Press.
- Simpson, L. B. (2017). *As We Have Always Done: Indigenous Freedom Through Radical Resistance*. University of Minnesota Press.
- Singh, J. (2025, June). India Claims 'Landmark' Killing of Top Maoist Rebel. *Financial Times*. <https://www.ft.com/content/a62d1967-cbd4-4072-b2c7-2a54e6f5fd78>
- Statler, M. S. (2017, March 7). The Environmental Footprint of Your Smartphone. *Wired*. <https://www.wired.com/2017/03/environmental-footprint-smartphone/>
- Stryker, S. (2008). *Transgender History*. Seal Press.
- Sundar, N. (2016). *The Burning Forest: India's War in Bastar*. Juggernaut Books.
- Taffel, Sy. (2016). Technofossils of the Anthropocene: Media, Geology, and Plastics. *Cultural Politics*, 12(3), 355–375.
- TallBear, K. (2013). *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. University of Minnesota Press.
- Tsing, A. L. (2005). *Friction: An Ethnography of Global Connection*. Princeton University Press.
- Tsing, A. L. (2015a). *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton University Press.
- Tsing, A. L. (2015b). Arts of Noticing. *Common Knowledge*, 21(1), 51–56.
- van Dooren, T. (2014). *Flight Ways: Life and Loss at the Edge of Extinction*. Columbia University Press.
- Vizenor, G. (2008). *Survivance: Narratives of Native Presence*. University of Nebraska Press.
- Watts, V. (2013). Indigenous Place-Thought and Agency Amongst Humans and Non-Humans. *Decolonization: Indigeneity, Education & Society*, 2(1).
- White, F. (2014). *The Overview Effect: Space Exploration and Human Evolution*. American Institute of Aeronautics and Astronautics.
- Whyte, Kyle Powys. (2013). On the Role of Traditional Ecological Knowledge as a Collaborative Concept. *Climatic Change*, 120(3), 515–525.
- Yusoff, K. (2018). *A Billion Black Anthropocenes or None*. University of Minnesota Press.

Tripathi, R. & ET Bureau. (2025, July 16). 357 Maoists Killed in Yearlong Operations, Says Chhattisgarh Police. *The Economic Times*. <https://economictimes.indiatimes.com/news/defence/357-maoists-killed-in-year-long-operations-says-chhattisgarh-police/articleshow/122589426.cms?from=mdr>

Govt Committed to Establishing Peace in Naxal-Affected Region, PM Modi says. (2025, May 15). *DD News*. <https://ddnews.gov.in>

Dense Chhattisgarh Forests No Longer Safe for Naxals, Over 200 Maoists Lay Down Arms. (2025, October 17). *The Times of India*. <https://timesofindia.indiatimes.com/videos/news/208-naxals-surrender-in-chhattisgarhs-dandakaranya-north-bastar-declared-free-of-red-terror/videoshow/124632340.cms>

I—2

Veroniki Korakidou

Rewilding Animism— Doing It With More-Than-Human Others

Veroniki Korakidou is an Athens-based academic, writer, mediator, and transdisciplinary artistic researcher. Her work examines the intersections of contemporary art and the life sciences, with a focus on hybrid bio-digital approaches. Her research investigates how contemporary artistic practices engage with living systems and emerging technologies. Her writing is published by major international houses, including MIT Press, Intellect, and EU-funded edited volumes.

Abstract

This chapter explores the concept of art as a living assemblage through the lens of Félix Guattari's ecological philosophy. Guattari reimagines subjectivity as distributed across humans, machines, and environments—entities co-producing affect and meaning within dynamic assemblages. Drawing on Guattari's *The Three Ecologies* (environmental, social, and mental), the chapter situates art as a site where these ecologies converge. It extends this view by showing how an emerging do-it-with-more-than-human-Others (DIWiMO) ethics expands more-than-human agency while re-composing the human subject and highlights artists whose works exemplify it. These practices treat nature not as a resource but as a collaborator. Within this framework, DIWiMO reframes making as collective and machinic co-subjection through which human agency becomes situated, renewed, and entangled within material and more-than-human assemblages. The chapter also connects Guattari's ecosophy with Indigenous ecological ethics, emphasising kinship, reciprocity, and the inseparability of mind, society, and environment, through the notion of animism. This convergence challenges anthropocentric and extractivist paradigms. DIWiMO emerges as a transformative ethic—animating materials, listening to ecosystems, and co-creating affective environments that breathe, respond, and evolve. Here, language is understood as a dynamic and affective system shaped by non-discursive semiotics—gestures, sounds, images—functioning like a living organism capable of resonance and mutation, aligning artistic practice with animist and more-than-human modes of relation. Ultimately, the chapter proposes that art, when practised as a living assemblage, becomes a mode of rewilding culture. It reimagines subjectivity beyond the human, inviting machines, microbes, and mycelia into the ethical fold. Through this expanded field of animism—material rather than idealist—the text aligns Guattari with perspectivist cosmologies in which humans and non-humans share a common plane of subjectivity. In doing so, it offers a radical aesthetic and philosophical response to the climate crisis—one rooted in collaboration, animism, and ecological conscience.

Introduction

In the shifting terrain of art, technology, and ecological consciousness, a collaborative ethos emerges that reaches beyond human-to-human interaction and embraces the vibrant agency of the more-than-human. This chapter elaborates on the experimental practices cultivated within the Feral Labs Network and proposes the term Doing It With More-Than-Human Others (DIWiMO) to describe a mode of co-creation rooted in rewilding, speculative bioart,

environmental sensing, and interspecies collaboration. Ferality, as explored by artists and researchers involved in events like Field_Notes, TTTlabs BioFeral, BeachCamp, PIFcamp, Camp Vild and Cultivamos Cultura field labs and residencies—among others organised under the umbrella of the Rewilding Cultures initiative—invites co-creation with non-human agents through practices such as biohacking, multispecies or eco-responsive performance, and field-based interdisciplinary research which resonates with contemporary materialist approaches that recast natural sites and habitats as portals of situated memory and speculative becoming. Such an approach underscores how landscapes and ecosystems function not merely as environments but as mediating thresholds through which partial enunciations emerge and assemble. These art gatherings are not only process-oriented, with diverse structures and methodologies, but also serve as site-specific platforms for cultivating resilient communities. Participants share creative spaces and resources while engaging with a multiverse of entities—from microbes to soil and from vegetation to sensors and data—as co-creators in both artistic and scientific processes. Such practices reflect a move away from traditional maker culture towards more ecological and community-embedded forms of creative experimentation.

The conceptual grounding of DIWiMO draws from Félix Guattari's ecosophy, which calls for an integrated approach to environmental, social, and mental ecologies. Central to this framework is the notion of *machinic animism*—a term introduced by Angela Melitopoulos and Maurizio Lazzarato to describe how Guattari's concept of *machinic assemblages* dissolves the boundary between nature and technology. Their interpretation of Guattari's animism captures his radical rethinking of subjectivity as emergent from heterogeneous networks of living beings, technical systems, and semiotic flows. In this view, human subjects are not the only agents of transformation—capable of producing affects, meanings, and relations—but also machines, data, materials, sites, and natural phenomena. DIWiMO offers a Guattarian lens through which to articulate and extend these feral, post-human practices, emerging within the Rewilding Cultures—Feral Lab Network. Such a framework aligns with reciprocal, careful modes of living alongside the more-than-human amid ecological collapse and the diminishing capacity of the human subject to act within contemporary sociotechnical imaginaries. In a world marked by uneven disruption—where existential territories splinter under neo-colonial extraction, techno-capitalist acceleration, and the algorithmic enclosures of emerging authoritarian regimes—this chapter points to the urgent need to rethink the human as an entangled, situated, and responsive assemblage within a planetary mesh of relations.

Doing It With More-Than-Human Others (DIWiMO): A Feral Ethos of Co-Creation

The ethos of DIWO (Doing It With Others) emerged from digital art, hacker culture, and maker movements as a response to the individualism of DIY. It championed co-creation, shared authorship, and distributed agency—a radical reimagining of making as a social, participatory act. But what happens when we extend this ethos beyond human collaborators? What if “others” include not only people, but also plants, animals, microbes, rivers, algorithms, and inorganic materials, including machines? This is the challenge behind the notion of Doing It With More-Than-Human Others (DIWiMO): a call to recognise that creativity, knowledge, and agency are not exclusively human domains. From the bees that pollinate plant-based food sources to the bacteria that ferment milk or bread, and from the mycelial networks that sustain forests to the sensors that mediate our environments, we are always already entangled with non-human actors. DIWiMO invites us to acknowledge these entanglements—not as tools or extractivist arrangements but as co-creative relationships. Where DIWO emphasised collaboration among humans, DIWiMO shifts the focus to entanglement—a concept developed within feminist science and technology studies and, more specifically, by Karen Barad (2007). It recognises that we do not act alone, nor do we act upon inert matter. Instead, we act with, through, and alongside a web of living and non-living agencies. This reframing challenges anthropocentric assumptions in art, design, technology, and activism. It invites us to listen to rivers, negotiate with the weather, and co-create with fungi. It asks: what does it mean to “make” when your collaborators are not just people, but moss, metal, or machine learning models?

A wide range of such situated engagements includes, but is not limited to, bioart experiments that cultivate living sculptures with algae, stem cells or bacteria, ecoart practices that entangle the human body—as well as other living organisms—with sensors and algorithmic processes, while raising questions of agency and control; craftivist approaches that attune to the labour of silkworms, marine organisms, and beehives, and community rituals that honour soil microbes as co-creators of soundscapes or visual narratives. Such practices blur the boundaries between technology and ecology, craft and computation, activism and critical making. They demand a new ethics of care—one that is multispecies, plural, and evokes a more-than-human subjectivity, while refusing extractive logics and foregrounding multispecies ethics. DIWiMO is therefore not

just another art-making method but a new world view. It aligns with Indigenous cosmologies, feminist technoscience, and ecological justice movements. In a time of climate crisis and techno-capitalist acceleration, this expanded DIWO offers a way to reimagine making as a form of transindividuality, a multispecies practice of rewilding within the world of human and non-human agencies.

Machinic Assemblages and Guattari's Animism

At the heart of DIWiMO lies a redefinition of subjectivity and agency, one that draws deeply from Félix Guattari's philosophy, particularly his notion of animism, in which agency emerges through assemblages of human and non-human actors, and his animism of language, which recognises the expressive vitality of language beyond semiotic bounds. Guattari challenges the Cartesian divide between mind and matter and proposes instead that subjectivity is not confined to individual consciousness but is distributed across humans, machines, environments, and materials. This distributed subjectivity forms what we know as assemblages, dynamic constellations of entities that co-produce affect, meaning, and transformation. "Machinic animism" (Melitopoulos and Lazzarato 2010) offers a way of recognising the expressive capacities of non-human systems, not by anthropomorphising them but by acknowledging their influence on desire, social behaviour, and creativity. Unlike mechanistic systems, which are closed, linear, and hierarchical, machinic systems are open, relational, and generative. They operate through feedback, emergence, and co-creation. A sensor embedded in soil, for example, is not merely a tool; it becomes part of a machinic assemblage that includes microbes, moisture, code, and human interpretation, thus functioning as a node within a distributed network of worldmaking.

Guattari's framework of *The Three Ecologies* (1989), which includes the mental or psychic, the social, and the environmental, offers a lens through which DIWiMO practices can be understood. These ecologies are not separate spheres but interdependent fields of subjectivity. Mental ecology involves the ways we think and feel, social ecology concerns our relationships and institutions, and environmental ecology encompasses our material and ecological conditions. In DIWiMO, these ecologies can converge in a wearable that responds to air quality, engaging environmental data, social awareness, and mental perception at the same time. Artists working in this field are not simply manipulating materials but entering into dialogue with them. Whether cultivating mycelium, programming responsive textiles, or fermenting bacterial cultures, they approach

materials as collaborators rather than inert substrates. This orientation invokes a form of animism, not in the folkloric sense of spirits inhabiting objects but in the philosophical sense that all matter carries the potential to participate in worlding praxis. Within this perspective, art becomes a site of ecological negotiation, a place where mental, social, and environmental ecologies meet and shape one another. A single project might draw on the behaviour of fungi to guide algorithmic design, allow the seasonal patterns of a forest to influence the rhythms of a real-time performance, invite wind currents to animate physical structures, or incorporate bioplastics and other biodegradable materials that respond to microbial activity—thus embedding time, transformation, and decay into the work itself. These are not symbolic gestures but material practices that embody Guattari’s vision of a world in which subjectivity is shared. Agency is distributed across both human and non-human realms. Within the context of Feral Labs, *machinic animism* finds fertile ground. These labs are already configured as living assemblages that are temporary, situated, and relational. They bring together artists, scientists, technologists, and ecologists in environments where the boundaries between human and non-human begin to blur. The lab itself becomes a machinic system, open to failure, transformation, and unexpected alliances, and it offers a setting in which DIWiMO can flourish as a lived, feral practice.

Animism of Language:

Transindividual Expression and Affective Ecologies

To fully grasp the implications of DIWiMO, we must also consider the role of language, not merely as a tool for communication but as a living, animistic force. Félix Guattari’s semiotic theory, especially in *Chaosmosis* (1992), offers a compelling entry point into this expanded understanding. Guattari treats language as a dynamic, affective, and transformative system and emphasises non-discursive semiotics—such as gestures, sounds, and images—that operate outside conventional linguistic structures. In this framework, language is not merely representational; it actively produces subjectivity, affects, and social relations. It behaves like a living system, capable of mutation, contagion, and resonance. This view aligns with animist thinking, where agency and vitality are attributed to non-human and symbolic entities.

Angela Melitopoulos and Maurizio Lazzarato (2010) use the term *machinic animism* to describe Guattari’s view of subjectivity and systems—including language—in the context of what they call “the

shattering of capitalism”. For Guattari, as for many animist societies, subjectivity is not a uniquely human attribute but a basic feature of reality itself, rather than a late-arriving exception in the long arc of cosmic history. According to Viveiros de Castro, this position is profoundly materialist because it offers a way to disentangle animism from idealist connotations and thereby renew materialism itself (Melitopoulos and Lazzarato 2010). Guattari’s invocation of animism, according to de Castro, provides a non-idealist theory of the subject that aligns with Amazonian cosmologies in which humans and non-humans share a common condition of “humanity”, in contrast to the Western paradigm where their shared ground is defined as “nature”. Although animism is already present in Deleuze’s non-transcendental vitalism—understood as an immanent and Spinozist sense of life as expressive force—it undergoes a significant transformation when taken up by Guattari. It is no longer grounded in vitalism but becomes machinic. This shift is important because the focus moves to how things work, to how machinic processes operate within contemporary capitalism, where subjectivity itself becomes the primary product (Melitopoulos and Lazzarato 2010).

Guattari’s expanded conception of enunciation and his reframing of how signs, gestures, and other expressive means operate beyond linguistic representation is based on his remarks about the way that technical systems, social relations, and aesthetic processes form agentic, relational, and co-constituted machinic assemblages rather than expressions of a unified human subject. In Guattari’s machinic universe, enunciation is distributed across heterogeneous human and non-human assemblages, making subjectivity a product of interconnected autopoietic processes rather than a human-centred metaphysical category. For Guattari, language is not a fixed or hierarchical system of signs. It is a transindividual, plural, a-signifying flow of energies, a machinic process that operates beyond the boundaries of individual subjectivity or conventional semantics. This view is inspired in part by Indigenous ritual practices, where language is often performative, evocative, and embodied, and also by psychotic episodes, which reveal the uncertainty and multiplicity of meaning. In both cases, language is not a semiotic system but a vibratory field, a living assemblage that connects bodies, environments, and affects.

In the context of DIWiMO, this animistic view of language resonates deeply. When artists co-create with more-than-human others—be it soil, wind, stem cells or microbial life—their work often escapes the bounds of traditional representation. It becomes a form of a-signifying semiotics:

gestures, sounds, textures, and rhythms that communicate not through fixed symbols but through affective resonance and embodied experience. For instance, a sound installation that responds to fungal growth or a textile that changes colour in response to humidity are not signs communicating “messages” in the conventional sense; they are material expressions participating in a shared expressive ecology that includes human and non-human voices, algorithmic processes, and environmental signals. They form what Guattari might call a polyphonic enunciation—a chorus of agencies that cannot be reduced to a single meaning or author. This approach aligns with Indigenous epistemologies, where language is often embedded in land, ritual, and community. In such traditions, rivers speak, stones have memories, and names are carriers of relationships. DIWiMO echoes this world view by treating materials and environments not as silent bystanders but as co-articulators of meaning.

In Feral Labs, where language is often experimental, fluid, and multi-modal, this animistic perspective becomes especially potent. The temporary, transdisciplinary, and place-based nature of these labs fosters a kind of linguistic ferality—where code, gesture, landscape, and material behaviour all contribute to a shared expressive field. Here, language is not just spoken or written; it is grown, hacked, fermented, and performed. By embracing the animism of language, this approach expands the scope of communication itself. It invites us to listen not only to what is spoken but also to what is felt, sensed, and co-experienced across species and systems. It encourages the development of new literacies of soil, wind, and microbial rhythms, and it asks us to recognise that meaning is not imposed from above but arises from entangled relations. In this perspective, it becomes not only a method of making but also a mode of listening to the polyphonic, a-signifying, and more-than-human languages that shape our shared world.

DIWiMO x Feral Labs:

Towards a More-Than-Human Maker Culture

Feral Labs are not neutral spaces. They are situated, embodied, and often remote, embedded in forests, beside rivers and lakes, on mountain slopes, or within coastal environments. These surroundings are not simply backdrops for creative work but active elements that influence the pace, materials, and relationships involved in each project. In this setting, the approach does not appear as an extension of existing methods but as a shift in orientation, one that understands rivers, lakes, and landscapes as engaged partners with their own forms of agency, contributing to processes

of making alongside humans, soil, wind, microbes, machines, and water.

To do it with more-than-human others is to acknowledge that creativity is not an autonomous process but is shaped by the qualities of a place, by weather patterns, and by the behaviours of non-human organisms and inorganic materials. It also involves recognising that a hacked sensor responding to rainfall is not only a technical device—a tool—but a social interface, an ecological gesture, and a shift in perception towards multispecies awareness. DIWiMO resonates with Indigenous ecological beliefs that emphasise kinship, reciprocity, and the inseparability of mind, society, and environment. This convergence challenges anthropocentric and extractivist paradigms and offers a cultural immune response to cascading ecological and social collapse. It is not a metaphor either; it is a transformative ethic, capable of animating materials, listening to ecosystems, and co-creating affective environments that breathe, respond, and evolve.

Within the Feral Labs Network, DIWiMO is practised—sometimes explicitly, often intuitively. It is present in the soil performances of Azucena Sánchez, the bacterial collaborations of Maya Minder, the feminist biorituals of WhiteFeather Hunter, and the place-based workshops and rituals developed at Camp Vild, the annual feral lab hosted by Culture Yard Centre. It is embedded in the materiality of ecological settings: the Soča river at PIFcamp, the Kilpisjärvi biological station where Field_Notes

Image 1.

Classy view over the Soča river on a rainy day. Photo credits: Tine Lisjak, PIFcamp 2024.



takes place, located within the Arctic tundra biome, the Mediterranean coastal textures of TTTlabs BioFeral.BeachCamp in Crete, or the Cultivamos Cultura residency's rural ecosystems and coastal biodiversity. And, of course, it is present in the Nationalpark Kongernes Nordsjælland, a protected area, where Camp Vild activities took place.

These field labs are not simply artistic gatherings. They function as temporary ecologies that bring together care, code, compost, and shared responsibility. They encourage a slower pace, deeper attunement, and forms of collaboration that move away from control and towards relational awareness.

DIWiMO in Practice: Situated Examples From the Feral Network

The DIWiMO ethos appears in the work of many artists and researchers across the Feral Labs Network. These practitioners are not merely inspired by nature but engage with it directly, working with soil, weather, microbes, and data. Their projects reflect Guattari's view of subjectivity as something that unfolds across mental, social, and environmental ecologies. The analysis below highlights several DIWiMO examples drawn from the work of artists, researchers, and facilitators who have taken part in three field labs within the Feral Labs Network: PIFcamp, Camp Vild, and Cultivamos Cultura. Across these sites, practitioners engage with the more-than-human world through practices that include biohacking, hiking, fermenting, sensing, and co-creating with nature.

Image 2.

Collecting soil samples.

Photo credits:
Tine Lisjak,
PIFcamp 2024.



Image 3.
Circular
Chromatography
workshop at Krater,
Ljubljana.
Photo credits:
Katja Goljat, 2024.



Image 4.
Field trip to the
abandoned Lemovje
village above the
Soča valley. Photo
credits: Katja Goljat,
PIFcamp 2023.



PIFcamp: Along the Soča River

At various PIFcamp editions, artists like Saša Spačal (*Scrolling Soil*) and Maya Minder (*Bacterial Field Guide*) engage directly with microbial and soil ecologies, transforming scientific processes into aesthetic and relational experiences, while Azucena Sánchez's *Tlalli: Conversations with Soil* uses sensors and poetry to give voice to the land itself.

Fransisca Tan's *Flavours of Transformation* explores food and tasting as multispecies rituals, while Diana Aires's *Botanical Bodies* investigates the performative gestures between human and plant bodies through natural dyeing and textile work. Fernando Fernandez's *Sinfonía Biótica* composes soundscapes in collaboration with local ecologies, creating interspecies musical ecosystems. More specifically:

Fransisca Tan, Flavours of Transformation

As part of her PIFresidency at Krater and PIFcamp, Fransisca Tan worked with food as material, metaphor, and shared practice. Through tasting sessions, sensory exercises, and edible installations, she invited participants to consider nourishment as a multispecies process shaped by microbes, memory, and community.

Julian Chollet, Circular Chromatography

Julian Chollet, another PIFresident, uses soil chromatography as both a scientific technique and a visual language. Participants produce chromatograms that open conversations with each other and with the plants, minerals, and microbes that influence their environments. His work connects biochemistry with ecological storytelling, making soil perceptible as an active partner.

Saša Spačal, Scrolling Soil

Saša Spačal experiments with translating soil chromatograms into textile sound scores, creating instruments that give soil a voice. This emerging project offers a sonic and tactile reflection on underground life, encouraging participants to perceive the earth as an expressive presence. The initial research was carried out at PIFcamp in collaboration with Julian Chollet and used circular chromatography as a method for visualising soil activity.

Maya Minder, *Bacterial Field Guide*

Through kombucha fermentation and microbial narratives, Maya Minder invites participants to collaborate with bacteria. Her workshops combine biohacking, feminist microbiology, and sensory exploration, fostering a multispecies understanding of life and material processes.

Azucena Sánchez, *Tlalli: Conversations with Soil*

Azucena Sánchez develops interactive systems in which soil becomes a responsive subject. Using sensors and eco-poetry, she stages performances where the earth reacts in real time, reframing soil as a political and narrative agent.

Diana Aires, *Botanical Bodies*

Diana Aires investigated the gestures and exchanges between human and plant bodies. Through natural dyeing, plant walks, and textile installations, she traced the stories held in local flora and invited participants to engage with the landscape as a living archive.

Fernando Fernandez, *Sinfonía Biótica*

This project is a long-term exploration of interspecies soundmaking developed through fieldwork, sensing technologies, and close attention to local ecologies. Working with plants, insects, water flows, and atmospheric conditions, Fernandez creates compositions shaped by the behaviours

Image 5.

Fernando Fernandez during his project presentation.

Photo credits:

Katja Goljat,
PIFcamp 2025.



Image 6.

Co-creation with
people and nature
by Ulla Eriksen.

Photo credits:

Heidi Hove, 2025.



and rhythms of the organisms he encounters. Fernandez treats sound as a shared medium rather than a human-directed output, allowing environmental signals to guide the structure of each piece. Through this approach, *Sinfonía Biótica* proposes a form of musical practice in which ecosystems act as collaborators, inviting listeners to attune to the subtle dynamics and agencies present within a given site.

Although not directly connected to the Rewilding Cultures activities, the team from Projekt Atol, who is facilitating PIFcamp, collaborates also with Robertina Šebjanič in relation to her field-based, aquatic projects, such as *Aquatocene* and *Echoes from the Deep*. Through *Aquatocene*, Šebjanič amplifies underwater soundscapes and highlights the impact of human-generated noise, encouraging awareness of the agencies present in marine environments. *Echoes from the Deep* examines the long-term effects of chemical weapons dumped in the Baltic and Adriatic Seas, showing how these materials continue to alter biodiversity, water chemistry, and ecological stability, with consequences for both marine organisms and human communities.

Camp Vild: Within the Mixed Forest

Camp Vild, hosted by Kulturværftet in Denmark, offers another compelling example of DIWiMO in action. Activities took place in the Nationalpark Kongernes Nordsjælland, a protected area in North Zealand that includes mixed forest, meadows, wetlands, and coastal edges. As a Rewilding Cultures partner project, Camp Vild embodies principles of slowness, ecological ethics, and more-than-human collaboration where participants engage in practices that decentre human agency, allowing the forest, the weather, and the rhythms of the land to shape the creative process. Workshops and gatherings took place in forests, meadows, and abandoned buildings gradually reclaimed by vegetation.

Natur i Livet, Silent Walk, Trust Exercises, and Fire Storytelling

On the first day at Camp Vild, nature therapists from Natur i Livet guided participants through a silent walk that gradually transitioned into trust-based exercises, designed to establish presence and mutual awareness, and to strengthen the emerging community. Later in the camp, they hosted a fire storytelling session that reflected on the cultural role of fire as a gathering point and a site of human connection.

Ulla Eriksen, Co-Creation With People and Nature

Ulla Eriksen led a workshop focused on simple sculptural gestures shaped by natural forms. Working with plaster and language, participants created shared objects that reflected the relationships formed during the session.

Niels Pugholm, Wild Beings

In this clay workshop, participants shaped figures inspired by local folklore, including gnomes, forest sprites, and other unruly woodland characters. The activity combined making and storytelling, encouraging a playful connection with the forest.

Sing's Tehus, Tea Ceremony

A morning tea ceremony took place in a forest clearing. The session offered a quiet moment of attention and shared presence, grounding participants in the landscape at the start of the day.

Karoline Larsen, Sensory Traces

Using reused yarn, participants in this workshop created lines and connections between trees. The workshop formed a temporary network across bodies and space, combining movement, colour, and collective action.

Image 7.

Playful workshop,
titled *Wild Beings*,
by Niels Pugholm.
Photo credits:
Mikkel Bache, 2025.

**Images 8. & 9.**

Sensory Traces workshop,
led by Karoline Larsen.
Photo credits: Mikkel Bache, 2025.

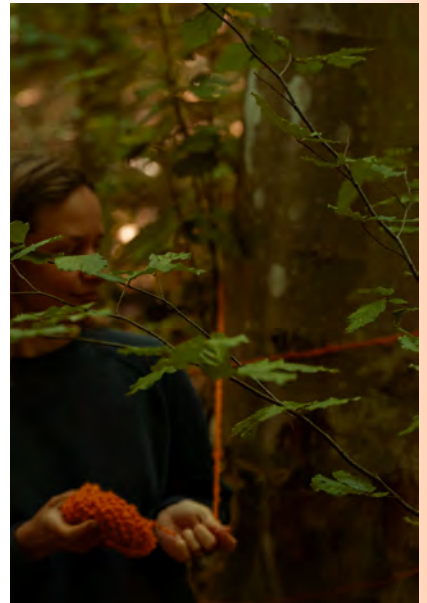


Image 10.

Wendy Plovmand facilitates a workshop in an abandoned restaurant being reclaimed by nature. Photo credits: Mikkel Bache, 2025.



Image 11.

Artist Barbara Skovmand performs on a self-built sound instrument. Photo credits: Mikkel Bache, 2025.



Wendy Plovmand, *Thing-Finder Workshop*

In an abandoned restaurant building slowly reclaimed by vegetation, Wendy Plovmand guided participants in locating forgotten objects and imagining their histories. The activity reflected on the traces left behind in places where human and natural processes overlap.

Thomas Lagermand also facilitated a writing workshop centred on abandonment and decay at the same site.

Mikkel Bache and Pernille Holm Kofod, *Intuitive Drumming*

In a dense coniferous forest, participants joined an intuitive drumming session led by Mikkel Bache and Pernille Holm Kofod. The practice encouraged collective rhythm and movement, shifting attention from individual expression to shared experience.

Louise Lolle, *Gong Meditation*

A gong meditation led by sound therapist Louise Lolle, founder of Gongs N' Roses, was held in a forest clearing with the morning sun filtering softly through the trees.

Barbara Skovmand, *Sound Performance*

On the final day, Barbara Skovmand performed on a self-built sound instrument in light rain. The performance offered a moment of reflection and sensory grounding, marking the close of the camp.

Together, these activities show how Camp Vild cultivates forms of making that arise through shared attention to place, materials, and one another.

WhiteFeather Hunter at Cultivamos Cultura:

Bioart and Feminist Fertility

The work of WhiteFeather Hunter further deepens the DIWiMO framework. Her bioart practice, grounded in feminist science and DIY biohacking, treats the lab as a feral zone of artistic co-creation. At Cultivamos Cultura, Hunter built upon her previous residencies by utilising her own body fluids (menstrual stem cells) in tissue engineering protocols at the Gulbenkian Institute of Molecular Medicine (GiMM). This followed experiments conducted at the Charité Berlin through Art Laboratory Berlin in 2023, as well as transposed the materials used in her earlier rituals at TTTlabs BioFeral.BeachCamp—organised by the Ionian

Image 12.

Z-Stack, detail, one of two twin handmade books.

Photo credits: WhiteFeather Hunter, 2025.



University in Crete (2024)—into the biolab. Her research, combining stem cells and 3D bioprinting, highlights female pleasure as a vital force in reproductive processes.

The work titled *Z-Stack* (2025) is one of two handmade twin books created by WhiteFeather Hunter. It consists of die-cut vellum pages printed with time-lapse microscopy of menstrual stem cells in neural induction medium, along with painted and cut page inserts, painted sheet-acrylic covers, acrylic hinges, a chalk-pencil illustration on the inside back cover, brass screw-pin binding, a glass petri dish, and a DIY bioprinted clitoris made from gelatin-alginate and menstrual fluid set in gel wax. The piece was produced with support from Cultivamos Cultura.

Reclaiming Situated Human Agency: From DIY to DIWiMO

While DIWiMO expands the field of agency beyond the human, it simultaneously re-composes the human subject—especially where extractive and

techno-feudal regimes have rendered it inert. In a Guattarian key, DIWiMO reframes making as a process of collective and machinic co-subjection: a situated practice through which the human subject is reactivated within relational, material, and more-than-human assemblages.

As Garnet Hertz notes in *Art + DIY Electronics* (2023), DIY cultures, i.e. DIY, DIWO, and DITO (Doing It Together) thrive precisely because they are unconventional. They resist the smooth interfaces and closed architectures of mainstream AI and consumer tech. They hack life, not just code. They build tools for justice, not just efficiency (see also Hustić 2024). This is where DIWiMO meets the feral across the Feral Labs Network. It appears in the experimental and playful processes of Schmiede, where artists work with emerging technologies to explore alternative futures and grassroots ecological movements. It is present in the collaborative ecologies of Cultivamos Cultura, where hand-harvested clay and even storks' nests shape the rhythms of artistic inquiry. It continues in the Field_Notes expeditions at Kilpisjärvi lake, where biodiversity monitoring meets art. It is visible in the post-disciplinary and site-specific curatorial practices of Makery. It also takes form in the community-driven initiatives of Radiona Zagreb Makerspace, where social inclusion, gender equality, and DIY ethics position making as a tool for empowerment. These are not just artistic platforms or projects but—indeed—proposals for a different way of living, making, and thinking.

More-Than-Making: DIWiMO as a Framework for Feralture

More-than-making resists purely instrumental approaches to fabrication, embracing a relational and processual ethos instead. It unfolds through more-than-human gestures, understood as actions enacted not only by humans but also by biological lifeforms, inorganic matter, and digital technology. Echoing Guattari's machinic animism, these gestures are not discrete actions but situations shaped by organisms, systems, interfaces, and natural elements such as weather, gravity, light, decay, and deep time. This is a mode of expressive fabrication, where intentionality is inseparable from material process. Form is per-formed rather than imposed in advance. Within this ecology, a trace becomes vital: not a residual mark but a living imprint of relational labour, a registration of co-agency across species, substances, and temporalities. These gestures are often encoded and embedded within the temporal and material logic of the system itself, pointing towards a way of making that pays attention, adapts, and participates in more-than-human collaboration. It becomes a practice of responsive engagement rather than one-sided control.

DIWiMO becomes a framework for *feralure*: a way of making, thinking, and being that resists extraction, embraces entanglement, and reclaims agency across species, systems, and subjectivities. It is not an artistic method but a worlding mode. In the context of Feral Labs, DIWiMO maintains that collaboration extends beyond disciplinary and species boundaries. It treats silkworms, fungi, winds, microbes, and technological systems as contributors rather than resources, within a distributed ecology of practice. More-than-human cooperation thus foregrounds situated forms of making that respond to the conditions of each environment. Making, in this frame, becomes a mode of listening. Drawing from Guattari's ecosophy and machinic animism, DIWiMO attends to a-signifying flows, affective intensities, and ecological signals that exceed human language. The aim is not to decode meaning but to attune to the expressive capacities of systems—living, technological, and environmental—without forcing them into fixed categories or instrumental roles. Within this ecology, empowerment begins by reclaiming the human as situated, relational, and capable of active response. Human action is shaped by specific contexts and formed through connections with other beings and systems. The human is positioned as capable of context-aware response and engaged in reciprocal interaction rather than acting from a detached or universal standpoint.

Faced with overlapping ecological, political, social, and existential crises, DIWiMO positions making as a practice that restores the human subject rather than renders it obsolete. This is not a return to anthropocentrism but an insistence on reclaiming a situated human agency in the face of technocapitalist abstraction. DIY, DIWO, and DITO become political gestures that counter passivity, challenge extractive logics, disrupt structural dependency, and cultivate forms of agency that are embodied, collective, and resistant, supporting solidarities across difference and strengthening collaborative forms of action. Finally, DIWiMO insists that practice is always situated. It emerges through soil rituals, bacterial field guides, wind protocols, and fungal wearables, not as metaphors but as material engagements with place, decay, and transformation. It becomes a way of worlding that resists colonial abstraction—where form is shaped by the agencies it encounters.

More-than-making becomes a way of staying with the trouble. Through the entangled practices of PIFcamp, Camp Vild and Cultivamos Cultura, among others, this chapter traces DIWiMO's emergence within a dynamic network of artists, researchers, and communities who reimagine the lab not as a fixed site but as a relational field. In this expanded ecology of making, the laboratory becomes a space of attunement, responsive to the voices, rhythms, and agencies of the more-than-human.

Bibliography

Barad, K. (2007). *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Duke University Press.

Guattari, F. (1989). *The Three Ecologies* (I. Pindar & P. Sutton, Trans.). The Athlone Press. (Original work published 1989)

Guattari, F. (1992). *Chaosmosis: An Ethico-Aesthetic Paradigm* (P. Bains & J. Pefanis, Trans.). Indiana University Press.

Hertz, G. (2023). *Art + DIY Electronics*. The MIT Press.

Hustić, D. (2024). An Intro Into Talks on Social Inclusion and Gender Equality. In Y. Billimore, T. Dolinšek, & U. Veber (Eds.), *Feral Labs Node Book #2: Feralities* (pp. 106–117). Bioart Society & Projekt Atol Institute.

Lazzarato, M. (2014). *Signs and Machines: Capitalism and the Production of Subjectivity* (J. D. Jordan, Trans.). Semiotext(e).

Melitopoulos, A., & Lazzarato, M. (2010). Assemblages: Félix Guattari and Machinic Animism. In A. Franke (Ed.), *Animism, Volume I* (pp. 121–130). Sternberg Press.

I—3

Matheus da Rocha Montanari

Life-Art-Technology Beyond the Laboratory: Organological Practices, Poetics of Care, and Decolonial Perspectives

Matheus Montanari is a Brazilian artist-researcher with a PhD in Visual Arts (University of São Paulo). His projects combine generative art, sensory technologies, and critical ecological methods in collaboration with Guarani, Kaiowá, and fishing communities in Brazil. A member of Poéticas Digitais (USP) and Multimedia Anthropology Lab (UCL), Montanari explores more-than-human relations, technodiversity, and decolonial ecologies. His work has been presented internationally in exhibitions, conferences, and peer-reviewed publications.

Abstract

For the past four years, the author has been developing a theoretical–practical framework that he calls poetics of care. This concept maps out different levels of care as a poetic operation situated simultaneously between caring for something and being careful with/of it. Anchored in a decolonial ecology perspective as proposed by Malcom Ferdinand, this notion seeks to overcome the fissures of the “double fracture” between the ecological and the social spheres, fractures imposed by colonial modes of inhabiting the world, such as the long-critiqued nature/culture divide. In dialogue with this, the technodiverse conception of cosmotechnics developed by Yuk Hui brings attention to the plurality of technical and ontological perspectives that need to be recovered in order to broaden our understanding of the relations between technology and life. Bringing these strands together, the author proposes the notion of technobiodiversity, grounded in collaborative actions engaging with Guarani and Kaiowá Indigenous communities in Brazil and with one of the last remaining collaborative practices between humans and wildlife in the world: the artisanal fishers who work in concert with dolphins in Southern Brazil. Despite the focus on Latin America, the author defends that technobiodiversity is open to the cross-pollination of diverse actors and perspectives, scientific and traditional knowledge, human and more-than-human agencies, the arts, and beyond. In this chapter, he proposes to connect these ideas with the experimental ethos of Rewilding Cultures, exploring new forms of engagement between European and Latin American thought. Rather than solely critiquing the colonial history of imposed epistemologies, Montanari aims to propose displacements of power vectors: instead of analysing a Latin American case through European frameworks, he asks what alliances and conceptual shifts a Latin American perspective can offer to a European-based project.

Introduction

In recent years, I have explored the intersections of life, art, and technology from a critical perspective, seeking to move beyond the conventional frameworks of bioart. While bioart often remains tied to laboratory-based, isolated, and microscopic practices that define life through genetic editing and other biotechnological procedures grounded in *bíos*, my work turns towards symbiotic, ecological, and historically situated forms of life. These practices operate beyond the laboratory, yet employ technology to cultivate interspecific and relational modes of existence. To articulate this distinction, I differentiate between bioart and what I call organological art, drawing upon Latin American artistic production, traditional communities, and

Amerindian philosophy. In doing so, I aim to open alternative epistemologies and ontologies for the triad of life, art, and technology—approaches that recognise the relational entanglements of the different modes of existence involved in a poetics of care.

When We Don't Meet but Cohabit Space and Ideas

For this chapter, I had the pleasure of being paired with the Bioart Society, which has also pursued a critical perspective on the relation art–life, situated in its own terms. Since 2009, the institution has carried out several iterations of experiential and creative laboratories directly connected to specific territories. This year, it organises *Field_Notes: Living Methodologies* (September 14–24, 2025) at the Kilpisjärvi Biological Station of the University of Helsinki in Sápmi, a field laboratory in art and science that shifts attention from what is researched to how research takes place. Bringing together fifteen participants and international guests, the program seeks to experiment with situated methodologies that treat methods as practices with ethical, political, and relational consequences, requiring care, negotiation, and openness to context. Integrated into the European project *Rewilding Cultures* (2022–2026) and part of the *Feral Labs* network, the laboratory emphasises slow rhythms, attentive listening, and forms of co-creation that emerge from encounters between humans, more-than-humans, and environments, strengthening creative communities and collective experimentation instead of producing finalised outcomes.

In this exercise of non-encounter, since I have never taken part in the laboratories or been physically present in the activities of the Bioart Society, I attempt to create a connection and, at the same time, a provocation by inverting the dynamics of epistemological power between the Global North and Global South. I do so from the perspective of a decolonial ecology, as proposed by Malcom Ferdinand: revisiting the double fractures between the social and the ecological inherited from the colonial mode of inhabiting the earth (Ferdinand 2022).

My approach starts in Latin America, and it engages with the perspectives of Amerindian thought and the practices of traditional communities to critically examine and challenge hegemonic definitions and practices. I then return to the non-encounter to propose an invitation: beyond decolonial critique and the binary division of Global North and Global South, how can we incorporate historically ignored practices and knowledge into the construction of a planetary future?

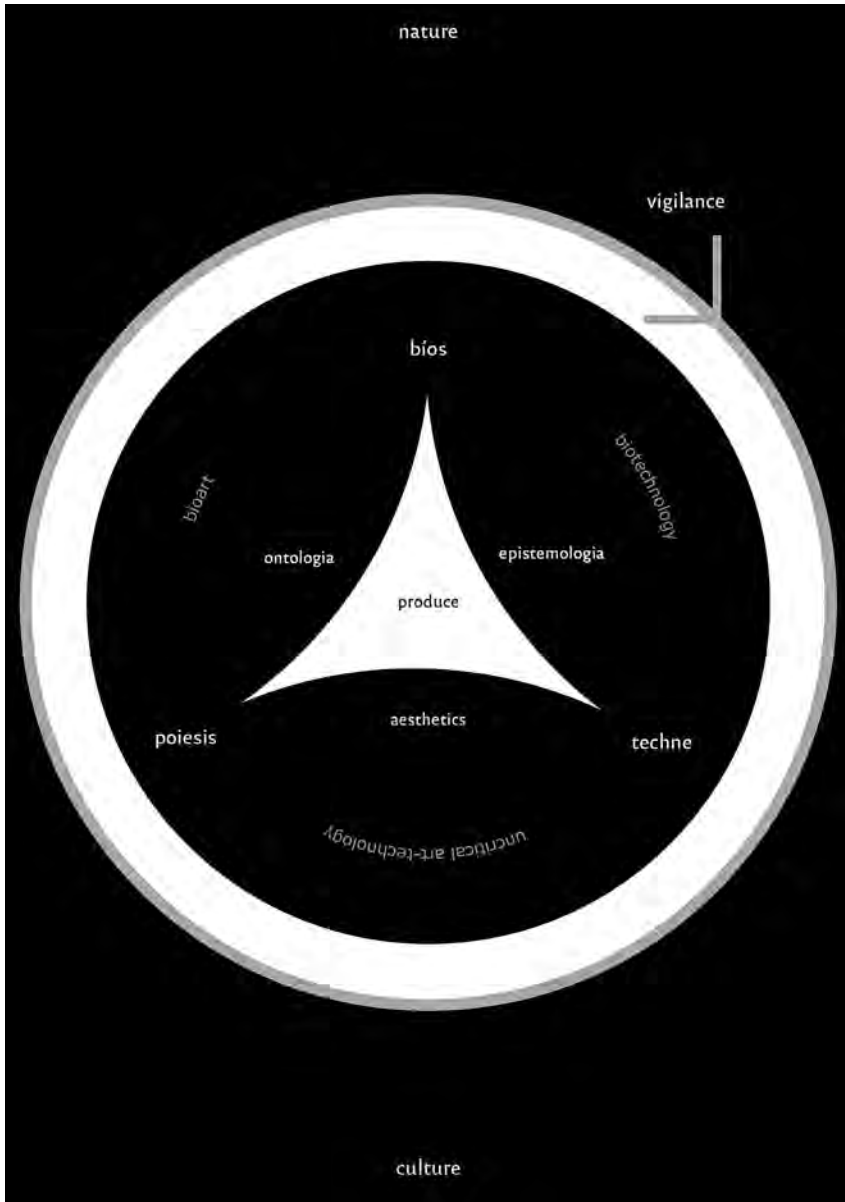
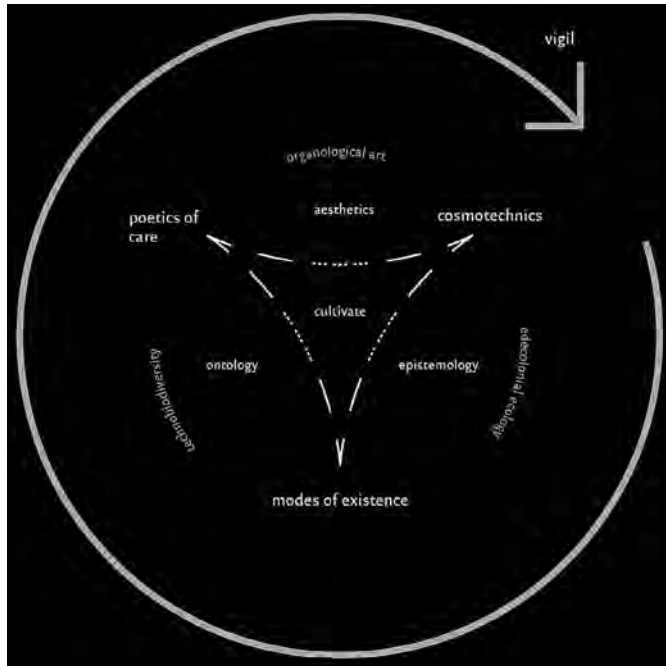


Image 1.
Vigilance Paradigm. Conceptual visualisation
exploring vigilance as a paradigm for
technology and its relationship with life and
art. Illustration credits: Matheus Montanari.

Image 2.

Vigil Paradigm.
Diagram proposing
the transition from
vigilance to vigil.
Illustration credits:
Matheus Montanari.



From the Paradigm of Vigilance to the Paradigm of Vigil

In recent years, several studies have pointed to a complex scenario in which technology turns towards the production and analysis of data in ways that permeate and dictate nearly every dimension of human life. Since the emergence of concepts such as big data, algorithmic governmentality, surveillance capitalism, and data colonialism (Couldry & Mejias 2019b, 2019a; Dijck 2014; Rouvroy & Berns 2015; Zuboff 2019), different authors have described this development as a set of practices and devices that establish a specific ontology of technology. This ontology rests on the belief in the neutrality of data (Dijck 2014) and can be understood as what we call the paradigm of vigilance.

The paradigm of vigilance disturbs our conception of temporalities because it operates within a predictive logic rooted in the past, which obstructs becoming (Image 1). It unfolds as a dynamic that continuously expands levels of surveillance, immersed in increasingly abstract and profound processes that end up exacerbating and automating historical problems related to race, class, gender, and sexuality, among others (Montanari & Prado 2022).

However, I have identified a crisis within this paradigm, catalysed by art and its disruptive dimension. As an alternative, I propose the paradigm of vigil. Unlike vigilance, vigil takes shape through a poetics of care, where the logic of production gives way to the gesture of cultivation (Image 2). Its foundations emerge from more-than-human–vegetal relations found in ethnographic contexts within the practices of several Amerindian peoples, as well as in artistic experiments situated at the intersection of art, life, and technology (Montanari 2024; Montanari & Prado 2022).

This construction draws on Yuk Hui’s technodiverse notion of cosmotechnics. For the philosopher, every technology constitutes a cosmotechnics and therefore depends on its local context. Although the appearance of techniques and the reflections elaborated around them are universal, they are not homogeneous. While the Greeks developed the notion of *technē*, which went on to ground the entire philosophy of technology and remained practically singular up to the contemporary period, other peoples also developed their own ontologies of technology. Hui challenges us to recover such notions, as he does in relation to China, so that rather than nostalgically and romantically returning to an ancestral idea of technology, we can imagine diverse cosmotechnics that respond to the challenges we face today (Hui 2018, 2020).

Rethinking Life–Art–Technology

In this process, as I engaged with Amerindian contexts, I realised that developing a local philosophy of technology requires moving beyond the well-known modern divisions that have structured Western thought: nature and culture, artificial and natural, wild and domesticated. More than simply questioning *technē*, it becomes necessary to reconsider *bíos* and the very processes of creation and instauration, whether artistic or otherwise. As Foucault (1996) suggests, “life” as we understand it today is an epistemological construct that emerged with the establishment of biology as a scientific discipline in the nineteenth century. However, by situating life outside the laboratory, we can explore definitions and practices that recognise the interconnections between humans, non-humans, and the processes through which worlds are cultivated and sustained.

In Amerindian languages and cosmologies, we rarely encounter direct equivalents for terms such as “art” or “nature”. Yet, as an artist, when I faced daily practices and modes of relating between objects, people, spirits, animals, and plants, the proximity to what we understand in the contemporary field as an *artistic practice* became evident, especially in its

emphasis on processes, concepts, and the building of relations. For this reason, rather than transporting “Western” concepts into Indigenous contexts, studying Indigenous “artists”, or separating objects and activities into artistic and non-artistic categories—distinctions that do not hold within their cosmological universes—I found it more productive and respectful to consider how Amerindian philosophy and thought can contribute to rethinking contemporary issues of art and technology. In particular, I turned to the *roçado* (the cultivated field/garden) as a space for nurturing such ideas.

Amerindian thought on cultivation and plants challenges conventional notions of agriculture by proposing multispecies relations shaped by anti-domestication, familiarisation, and counter-domestication. According to Carneiro da Cunha, anti-domestication does not mean imposing human ways of life on the forest but rather recognising that its cultivation results from the joint action of humans, plants, animals, and spirits in a process that values diversity instead of homogenisation. In this sense, no idea of an external or wild “nature” exists, since every plant is the cultivation of someone, even when not human: animals, spirits, and even other plants can cultivate the vegetal world (Carneiro da Cunha 2019). Familiarisation, in turn, describes cultivation as the construction of kinship (Fausto & Neves 2018), in which plants, such as the sweet potato among the Mẽhĩ (Krahô), are treated as persons with their own temperament and social life, requiring care and reciprocity to ensure healthy harvests (Morim de Lima 2018).

Among cultivation techniques, one of particular importance is the *reza* (chanting). In various Indigenous cosmologies, chanting functions as a form of interspecies communication between the cultivator, the plant, and its spirit owner. Cultivating the relationship with the spirit that cares for the plant proves crucial for ensuring the healthy development of both the crop and the cultivator and their community (Fausto 2008). Otherwise, angry plants may move to neighbouring fields or even bewitch inattentive cultivators (Morim de Lima 2017). In these contexts, cultivation does not mean domestication; rather, it entails establishing bonds of kinship and cohabitation, in which each species is recognised as an active subject and social agent.

Counter-domestication, meanwhile, warns against the risks of excessive human control. Aparicio illustrates this concept with Indigenous narratives in which unrestrained exploitation, such as the overuse of *timbó* (a plant capable of stunning fish) by the Banawá, leads to a role reversal: the human, poisoned and harmed by excess, becomes the prey, targeted by the vengeance of the spirit owners of the plant

(Aparicio 2020). Similarly, hyperdomesticated plants in monocultures act as agents of counter-domestication, capable of poisoning ecosystems and negatively affecting humans, animals, and other plants. Thus, while anti-domestication and familiarisation create space for plural forms of coexistence and vegetal kinship, counter-domestication exposes the dangers of predatory practices, revealing the need for an ethics of care in Amerindian cultivation, in which reciprocity, attentiveness, and balance guide relations between humans and more-than-humans.

In this sense, I have been thinking of the *poetics of care* as a practical-theoretical space that unfolds between *caring for* something and *being careful of* something. This relationship becomes evident in Amerindian interspecies cultivation processes and in relations with spirit owners. The poetics draws on Valéry's notion of thinking about the creative process in development: thinking through making while making (Valéry 2000). Thus, rather than focusing on the production of the art object, the poetics of care attends to the instantiation of processes that cultivate relations as a form of producing worlds and beings, within an ontology that encompasses ethical, political, and poetic dimensions, while revisiting pre-established hegemonic epistemologies.

Guarani and Kaiowá Virtual Museum and Ecologies of Thought Project

In this context, we developed the Guarani and Kaiowá Virtual Museum (Montanari, n.d.-a), an ongoing project started in 2021 in partnership with Guarani and Kaiowá communities in Mato Grosso do Sul (MS), the Multimedia Anthropology Lab (MAL) at University College London, and the Grand Assembly of Guarani and Kaiowá Women, Kuñangue Aty Guasu. MS hosts the second-largest Indigenous population in the country, the biggest outside the Amazon, yet it also faces severe territorial conflicts, rural violence, and humanitarian crises. Within this context, the digital museum seeks to create an infrastructure to curate, preserve, and display Guarani and Kaiowá cultural heritage according to the community's vision, with leadership from their elders. During one of the first presentations of the virtual reality prototype, two Nhandesys (experienced chanters) reported seeing spirits in the digital environment, even though no simulation had been programmed for this, nor any 3D model of spirits were added to the space, revealing how technology opened up cosmological affordances (Ingold 2018) beyond those anticipated by the researchers (Image 3).

Image 3.

Nhandesy Roseli engaging with the VR Museum during the field experiment. Photo credits: Matheus Montanari and UCL – MAL.

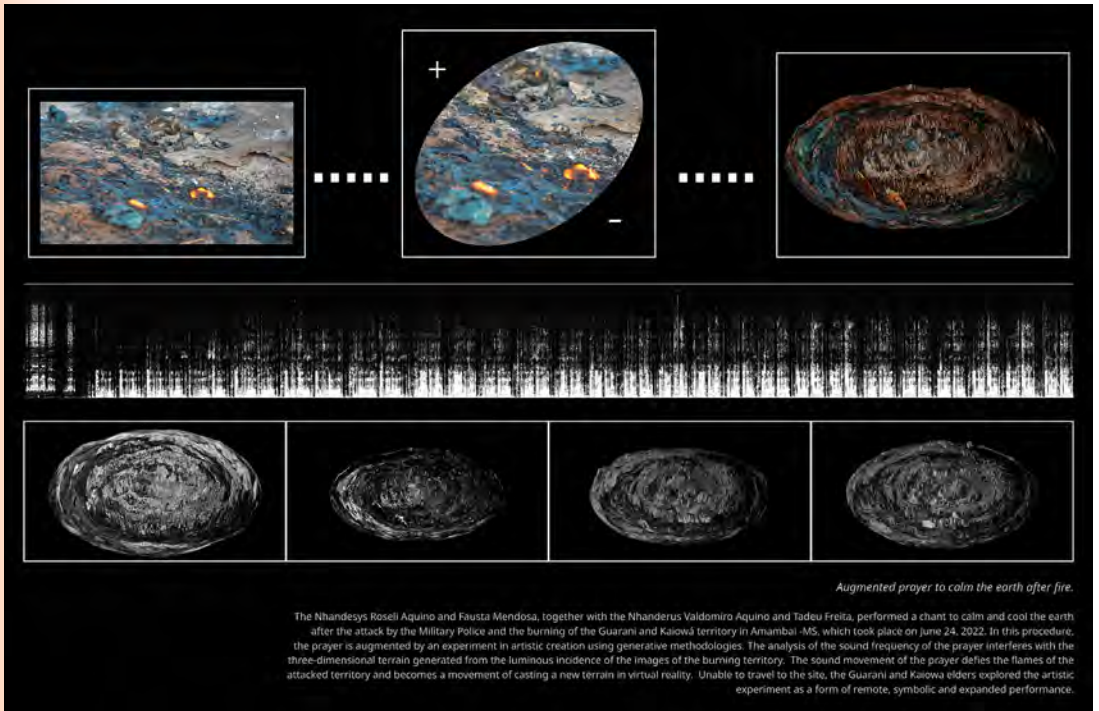


From this encounter emerged the project *Ecologies of Thought* (Montanari n.d.-b), bringing together anthropologists, artists, botanists, chanters, and young Indigenous participants in a transdisciplinary collective. We chose artistic research to navigate different forms of knowledge, allowing the integration of sound, plants, and chanting as cosmological technologies of cultivation. Using generative art and virtual reality, the team created interactive systems that, guided by Guarani and Kaiowá cosmology, transformed sonic and visual data into immersive experiences. Additionally, with the use of microcontrollers, items from food culture such as corn, sweet potato, and manioc were transformed into touch-sensitive sensors that triggered sounds of traditional instruments, exploring the vegetal–aural relationship of each element. This process did not aim to represent Indigenous cosmology but rather expanded the affordances of the digital, exploring it as a living, relational, and cultivation space. The project explored how artistic creation can operate as a method of research and ontological mediation, broadening the horizons of technology by articulating Indigenous cosmotechnics and digital experimentation (Montanari & Sordi 2023).

In the first experiments of the project, the story of corn revealed how the roçado functions as a space of creation and more-than-human care. According to the Kaiowá people, Jakairá created the first roçado from

white corn, a primordial food of life, cultivated in rituals such as the Jerosy Puku, in which prolonged chants reinforce bonds among humans, plants, spirits, and animals (João 2013; João Kaiowá 2020). The elders told us that, at certain periods, *the bees* are able to produce *the sound of corn* to communicate their harvest time, demonstrating how chant travels across species and sustains reciprocity between worlds. Inspired by this cosmology, the virtual reality experiments mapped the sonic frequencies of bees and patterns of light incidence in the fields into digital topographies, making the virtual environment an extension of the roçado, not as a simulation, but as a relational and cohabitative space. This became particularly evident in the case of the augmented chanting in virtual reality, performed after the Guapo'y Mirin Massacre in 2022, when ranchers, police, and paramilitaries attacked a reclaimed territory, resulting in the death of Vitor Fernandes and the destruction of the area. At the request of the elders, a chant was recorded to calm the land and re-establish the more-than-human relations of the site. Processed by the generative system, it transformed images of the burned territory into new digital landscapes in formation. This act of augmented chanting expanded the reach of the ritual beyond physical presence, operating simultaneously on spiritual, territorial, and virtual planes. More than a symbolic representation, the experience configured a cosmotechnics of contamination, in which the chant, algorithms, and wounded territory intertwined in a single act of care. Here, contamination is not pejorative but generative: drawing on Tsing's notion of "contaminated diversity", the term highlights the fertile entanglements and unexpected alliances that emerge even amidst the destructive conditions of the Anthropocene (Tsing 2019). In this way, virtual reality ceased to function as a mere simulacrum and became a sensitive extension of the ritual, opening space for modes of healing and relational restoration that integrate humans, spirits, images, and technologies within a shared field of action.

The operation of the generative system was central to this process. It received images or videos of the territory as input and combined them with recordings of the chants, analysing frequencies, intensities, and rhythms in real time. Each parameter of the chant and the imagery translated into visual transformations: light incidence became elevations in the digital terrain, rhythmic variations reorganised the landscape, and pauses and silences opened spaces for dissolution and regeneration. In the case of the augmented chanting, this meant that the voices of the Nhanderu and Nhandesy moulded the burned territory, converting destruction into a space of restoration (Image 4).



Beyond an aesthetic effect, the algorithm was conceived as a medium open to cosmological contamination, allowing the chant to extend its effects across both the digital and the sensory. The result was an experience in which the digital and the ritual merged, establishing a shared field of action among chanters, spirits, images, and software.

Bioart vs. Organological Art

This type of production establishes a distinct relationship between life and technology. While bioart is often the most recognised expression of the entanglement of art with life, particularly through biotechnology, this form of production does not fit that definition. Far from the laboratories and microscopic processes commonly emphasised in bioart, there exists a rich tradition within Latin American art-technology works in which life and modes of existence compose complex systems. This distinction has previously been considered in terms of economics and the difficult access to laboratories and materials necessary for such production. However, beyond these practical considerations, it became increasingly evident a conceptual

← **Image 4.**

Generative process of Augmented Chant, integrating indigenous vocal textures and algorithmic composition. Photo credits: Matheus Montanari.



Image 5.

Corn, manioc, and potato employed as tactile interfaces for sound activation within a technobiodiverse framework. Photo credits: Matheus Montanari.

and political choice to redefine what constitutes life and its ecological relations, in dialogue with local contexts, and socio-environmental issues. Examples include the work of the Coletivo Electrobiota and artists such as Gabriela Munguía, Ana Laura Cantera, Gilbertto Prado, Amor Muñoz, Guto Nóbrega, Artur Cabral, Gilberto Esparza, and Oscar Santillan, among others (Montanari 2024; Yeregui 2017).

I have been calling this type of production organological art, not as a replacement for the term bioart, but as a proposal to expand and include the diverse critiques and readings within the field itself, such as the Bioart Society's initiative to move from the laboratory into the territory (Beloff et al. 2013). In this sense, the organological draws inspiration from Yuk Hui's notion of the organic, which understands the organism in terms of recursion and contingency, in complex systems that, inspired by Simondon, allow the integration of the biological and the machinic (Hui 2019). In short, organological art mobilises, through the concept of the poetics of care, ontological conditions to expand the relationship between life and technique (Image 5).

Interspecies Collaborative Practices: Dolphins and Traditional Fishers

This expansion of diversities, conceived from a decolonial ecology (Ferdinand 2022), manifests through what I call technobiodiversity. Drawing from Amerindian contexts and using artistic research as a methodology for navigating complex ecological and social scenarios, I have been investigating other forms of interspecies and interdisciplinary interaction. More recently, I have been researching one of the last remaining collaborative practices between wild species and humans in the world: the cooperative fishing between artisanal fishers and dolphins in southern Brazil (van der Wal et al. 2022). The interaction involves bottlenose dolphins (*Tursiops truncatus* / *Tursiops truncatus gephyreus*), which drive schools of mullet (*Mugil* sp.) towards the shore, where artisanal fishers wait with their cast nets (Image 6). At the precise moment, indicated by the dolphins through characteristic behavioural signals, such as longer dives or tail slaps, the fishers cast their nets, significantly increasing their chances of capture (Image 7) (Valle-Pereira et al. 2022). The cooperation benefits both sides: fishers catch larger and more numerous fish, while the dolphins feed on those that escape the nets (Santos et al. 2018; Simões-Lopes et al. 1998).

Image 6.

Fisher and dolphin in mutual collaboration, Laguna, Brazil.

Photo credits:
Caetano Sordi.



Image 7.

Fisher casting his net after the dolphin's signal. Photo credits:
Caetano Sordi.



Studied since the 1990s by biologists and more recently by anthropologists, this practice goes beyond mutualistic advantage, forming a long-lasting community of interspecies relationships and affections (Catão 2021; Pryor et al. 1990). In Laguna, historical records date cooperative fishing to 1847, but oral accounts suggest it is much older, passed down through generations of fishers who recognise the same dolphins as their habitual partners. Archaeological evidence further suggests that human–cetacean bonds in the region, not necessarily collaborative fishing, extend back millennia, as shown by the *sambaquis*¹ and zooliths shaped like aquatic mammals (Cadorin 2013; Catão 2021).

Currently, I am part of the team documenting this practice for recognition as intangible cultural heritage in Brazil by The National Institute of Historic and Artistic Heritage (Iphan). Together with a multidisciplinary group of biologists, anthropologists, and historians, we are developing a dossier and a documentary that describe the practice in detail and will be submitted to the national intangible heritage commission. The distinctive aspect of this submission is the recognition of a more-than-human culture, as we are arguing that the dolphins are also holders of this cultural asset. If accepted, it will be the first of its kind in the country and one of the few worldwide to recognise the heritage of a more-than-human culture (Image 8).

Image 8.

Anthropologists and the artist examining archival traces of human–dolphin cooperation.
Photo credits: Rafael Devos.



- ¹ *Sambaquis* are prehistoric shell mounds or middens found along the coasts of Brazil and South America. They were created by ancient human communities over centuries and often contain shells, bones, artefacts, and sometimes human burials, providing important evidence of settlement patterns, diet, and cultural practices.

Image 9.

Recording subaquatic soundscapes through hydrophone immersion.

Photo credits:
Viviane Vedana.



Image 10.

Generative video mapping projected onto the National Museum of the Republic, Brasília. Photo credits:
Matheus Montanari.



Building on this recognition work, I have also begun to question whether, since the dolphins can maintain an interspecies culture with the fishers, it would also be possible to produce art within this context. What would constitute an artistic work made with, for, or from the dolphins?

Motivated by these questions, in 2024 I launched the project *Resonant Waters: Immersive Soundscapes in Human–Dolphin Collaboration* (Montanari n.d.-c), supported by the Imagination Fellowship from Leonardo and Arizona State University. The project has explored the collaborative network along two axes: fishers–dolphins and scientists–artists. Through field research, weather data, and underwater audio recordings with hydrophones, a series of experimental media works has been created both as artistic propositions and as investigative practices aimed at cultivating more-than-human perspectives (Image 9).

The first work (2025), *continuous fluctuation dolphin_line_fisher* (Montanari n.d.-d), was conceived as a generative system, integrating soundscapes captured in the field: terrestrial and underwater recordings of dolphin vocalisations, fish movements, and human activities. These sounds were composed into a spatialised audio piece using binaural mixing techniques, evoking both the gestures of fishing and the behaviour of the dolphins. The generative visual component employs strange attractors that respond to the sonic frequencies, allowing the sound to generate space and creating an immersion in more-than-human perspectives while speculating on how dolphins use echolocation to navigate. The work has an immersive dome version for planetariums and was also presented as a projection mapped on the façade of the National Museum of the Republic in Brasília (Image 10).

The work addresses the interactions among humans, dolphins, and the environment, proposing an *acoustemological* practice (Feld 2024) that interweaves art, science, and local communities in the preservation of this threatened heritage, while also fostering interdisciplinary and interspecies collaborations. In this way, the poetics of care can be understood as a relational principle that articulates, on one hand, the dimension of caring, expressed in the everyday gestures of fishers who, in dialogue with the signals emitted by the dolphins, share the catch through reciprocity, and on the other hand, the dimension of being careful, understood as attentiveness to the vulnerabilities that traverse the practice in the face of environmental, social, and historical pressures. It is, therefore, a framework that encompasses the maintenance of this more-than-human collaborative ecology and the ways in which art and research can be inscribed within it.

A Planetary Invitation

The reflections presented throughout this work emerge from specific local contexts. Starting from Latin America and Indigenous communities, as well as adopting technobiodiversity as a conceptual and methodological axis, was also a political choice. The distinctions between the Global North and the Global South, resulting from colonisation and its imperialist, capitalist, and neoliberal consequences, remain crucial both for historical recognition and for understanding the types of violence that still traverse these territories. Yet, in light of the recent planetary turn in scholarly discussions (Hui 2024), I write these conclusions as an invitation to expand bonds and networks of artistic and research engagement that can cross borders without erasing differences.

Thinking in planetary terms does not imply adopting a homogenising perspective. On the contrary, it entails recognising that the planetary is composed of a plurality of territories, cosmologies, and modes of existence. If, under one perspective, this highlights the limitations of the nation-state model in the face of global climatic and ecological crises, on the other, it reinforces the centrality of localised and situated practices that constitute the very fabric of the planet. The challenge, therefore, is to conceive of a planetary framework that unites without homogenising, articulates without reducing, and allows different cosmotechnics to coexist without losing their singularities: *caring for* and *being careful of*. This is precisely the task that Rewilding Cultures has been undertaking through its diverse nodes, more-than-human perspectives, and expanding its more-than-European collaborations, such as the one presented here.

Bibliography

- Aparicio, M. (2020). Contradomesticação na Amazônia indígena: A botânica da precaução. In J. Cabral de Oliveira, M. Amoroso, A. G. Morim de Lima, K. Shiratori, S. Marras, & L. Emperaire (Eds.), *Vozes vegetais: Diversidade, resistências e histórias da floresta*. Ubu Editora & IRD.
- Beloff, L., Berger, E., & Haapoja, T. (Eds.). (2013). *Field Notes: From Landscape to Laboratory*. The Finnish Society of Bioart.
- Cadorin, A. (with Cadorin, L.). (2013). *Laguna terra mater: Dos sambaquis à República Catarinense – cronologia histórica*. Nova Letra.
- Carneiro da Cunha, M. (2019). Antidomestication in the Amazon: Swidden and Its Foes. *HAU: Journal of Ethnographic Theory*, 9(1), 126–136. <https://doi.org/10.1086/703870>
- Catão, B. (2021). Águas de dançar juntos: Coordenação e sintonização multiespécies na pesca com os botos em Laguna (SC, Brasil). *Ilha: Revista de Antropologia*, 23(1), 30–49. <https://doi.org/10.5007/2175-8034.2021.e77519>
- Couldry, N., & Mejias, U. A. (2019a). Data Colonialism: Rethinking Big Data's Relation to the Contemporary Subject. *Television & New Media*, 20(4), 336–349. <https://doi.org/10.1177/1527476418796632>
- Couldry, N., & Mejias, U. A. (2019b). *The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism*. Stanford University Press.
- Dijck, J. van. (2014). Datafication, Dataism and Dataveillance. *Surveillance & Society*, 12(2), 197–208.
- Fausto, C. (2008). Donos demais: Maestria e domínio na Amazônia. *Mana: Estudos de Antropologia Social*, 14(2), 329–366. <https://doi.org/10.1590/S0104-93132008000200003>
- Fausto, C., & Neves, E. G. (2018). Was There Ever a Neolithic in the Neotropics? Plant Familiarisation and Biodiversity in the Amazon. *Antiquity*, 92(366), 1604–1618. <https://doi.org/10.15184/auqy.2018.157>
- Feld, S. (2024). *Acoustemology: Four Lectures*. VoxLox.
- Ferdinand, M. (2022). *Uma ecologia decolonial: Pensar a partir do mundo caribenho*. Ubu Editora.
- Foucault, M. (1966). *Les mots et les choses*. Éditions Gallimard.
- Hui, Y. (2018). *The Question Concerning Technology in China: An Essay in Cosmotechnics*. Urbanomic.
- Hui, Y. (2019). *Recursivity and Contingency*. Rowman & Littlefield.
- Hui, Y. (2020). *Tecnodiversidade*. Ubu Editora.
- Ingold, T. (2018). Back to the Future with the Theory of Affordances. *HAU: Journal of Ethnographic Theory*, 8(1–2), 39–44. <https://doi.org/10.1086/698358>
- João, I. (2013). Jerosy Puku. *PISEGRAMA*, (6), 15–17.
- João Kaiowá, I. (2020). As plantas ouvem a nossa voz: Cantos e cuidados rituais Kaiowá. In J. Cabral de Oliveira, M. Amoroso, A. G. Morim de Lima, K. Shiratori, S. Marras, & L. Emperaire (Eds.), *Vozes vegetais: Diversidade, resistências e histórias da floresta* (pp. 301–311). Ubu Editora & IRD.
- Montanari, M. R. (2024). *Cosmotechnical Garden: The Poetics of Care Rooted in Amerindian Thought and Latin American Art* [Doctoral dissertation, Universidade de São Paulo]. <https://doi.org/10.11606/T.27.2024.tde-04042025-143108>
- Montanari, M. R., & Prado, G. (2022). From Vigilance to Vigil: An Introduction to an Alternative Paradigm for Technology, Art, and Life. *Diffractions*, 1(5), 71–98.
- Montanari, M. R., & Sordi, C. (2023). Processos de criação em arte generativa como metodologia de atravessamento: Pesquisa colaborativa transdisciplinar com comunidades Guarani e Kaiowá. *ARS (São Paulo)*, 21(48), Article 48. <https://doi.org/10.11606/issn.2178-0447.ars.2023.207142>
- Montanari, M. R. (n.d.-a). *Guarani and Kaiowá V.R. Museum*. Matheus Montanari. from <https://www.matheusmontanari.com/guarani-kaiowa-museum>

- Montanari, M. R. (n.d.-b). *Ecologies of Thought*. Matheus Montanari. <https://www.matheusmontanari.com/ecologiesofthought>
- Montanari, M. R. (n.d.-c). *Resonant Waters: Immersive Soundscapes in Human-Dolphin Collaboration*. Matheus Montanari. <https://www.matheusmontanari.com/resonant-waters>
- Montanari, M. R. (n.d.-d). *Continuous Fluctuation*. Matheus Montanari. <https://www.matheusmontanari.com/continuous-fluctuation>
- Morim de Lima, A. G. (2017). A cultura da batata-doce: Cultivo, parentesco e ritual entre os Krahô. *Mana: Estudos de Antropologia Social*, 23(2), 455–490. <https://doi.org/10.1590/1678-49442017v23n2p455>
- Morim de Lima, A. G. (2018). Etnografia das roças Krahô: A vida sócio-ritual das plantas e a estética da diversidade. In A. G. Morim de Lima et al. (Eds.), *Práticas e saberes sobre agrobiodiversidade: A contribuição de povos tradicionais*. IEB Mil Folhas.
- Pryor, S. K., Lindbergh, J., Lindbergh, S., & Milano, R. (1990). A Dolphin-Human Fishing Cooperative in Brazil. *Marine Mammal Science*, 6(1).
- Rouvroy, A., & Berns, T. (2015). Governamentalidade algorítmica e perspectivas de emancipação: O díspar como condição de individuação pela relação? *EcoPós*, 18(2), 36–56. <https://doi.org/10.29146/eco-pos.v18i2.2662>
- Santos, M. L., Lemos, V. M., & Vieira, J. P. (2018). No Mullet, No Gain: Cooperation Between Dolphins and Cast Net Fishermen in Southern Brazil. *Zoologia (Curitiba)*, 35, e24446. <https://doi.org/10.3897/zoologia.35.e24446>
- Simões-Lopes, P. C., Fabián, M. E., & Menegheti, J. O. (1998). Dolphin Interactions With Mullet Artisanal Fishing on Southern Brazil: A Qualitative and Quantitative Approach. *Revista Brasileira de Zoologia*, 15, 709–726. <https://doi.org/10.1590/S0101-81751998000300016>
- Tsing, A. L. (2019). *Viver nas ruínas: Paisagens multiespécies no Antropoceno*. IEB Mil Folhas.
- Valéry, P. (2000). *Variedades* (M. M. de Siqueira, Trans.; 1st ed.). Iluminuras.
- Valle-Pereira, J. V. S., et al. (2022). The Role of Behavioural Variation in the Success of Artisanal Fishers Who Interact With Dolphins. *ICES Journal of Marine Science*, 79(4), 1150–1158. <https://doi.org/10.1093/icesjms/fsac038>
- Yeregui, M. (2017). Prácticas co-creativas: Decolonizar la naturaleza. *Arteologie: Recherche sur les arts, le patrimoine et la littérature de l'Amérique latine*, (11), Article 11. <https://doi.org/10.4000/artelologie.1601>
- Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. Profile Books.



II—1

Emma Hallemans, Anna Isaak-Ross, Rita de Almeida Leite & Marta de Menezes

Feral Conditions and Rural Futures: Engaging Hybrid Communities Through Arts Engagement and Feral Lab Practices

Emma Hallemans is a Belgian scientist and cultural mediator. As a cultural mediator, she searches for a nexus between artists, scientists, and audiences. Her research interests lie in Cultural Theory, Visual Culture, Science Philosophy and Social Anthropology. Her artistic practices explore visual arts, installations, and sound.

Anna Isaak-Ross is currently Studio Manager and Coordinator at Cultivamos Cultura in Portugal, where she oversees residency programmes, archives the art collection, and manages studios, laboratories, facilities, and exhibition spaces. She is an artist working with photography and new media, exhibiting internationally.

Rita de Almeida Leite is an interdisciplinary artist and is currently part of the Cultivamos Cultura team. Her work has been exhibited regularly in Porto since 2018 and engages with photography, research-based practices, and sustainable material processes. In 2023, her work *estender e voltar* was acquired for the Porto Municipal Art Collection.

Marta de Menezes is a Portuguese artist working at the intersection of art and biology. She is the director of Cultivamos Cultura, and of Ectopia. Her work has explored the conceptual and aesthetic implications of biological sciences for visual art. De Menezes has exhibited internationally and curated major exhibitions and festivals in Europe, the Americas, and Asia.

Abstract

This chapter reflects on the ongoing practices of Cultivamos Cultura as a cultural institution engaged in fostering creativity, experimentation, and knowledge circulation at the intersection of science, technology, and contemporary art. Grounded in more than sixteen years of activity, it addresses recurring questions concerning how cultural knowledge is cultivated, how studio-based and often private forms of artistic research can be shared beyond their immediate contexts, and how different facets of an institution's programme can intersect to support creative ecosystems. While Cultivamos Cultura's core activities centre on artistic residencies, collection building, and curated exhibitions, the text foregrounds the role of community engagement, educational practices, and communication strategies as essential support mechanisms. These practices function as connective infrastructures that enable the circulation, articulation, and disentanglement of cultural knowledge across local and international contexts. Drawing on the specific rural setting of São Luís, Portugal, the chapter considers the layered composition of the surrounding communities—local residents, artists, newcomers from urban centres, alternative rural collectives, and immigrant workers—and discusses strategies developed to engage these diverse constituencies. By examining these approaches, the text highlights how cultural institutions can create conditions for experimentation and exchange while remaining attentive to place, context, and the complexities of community.

Introduction

How to cultivate culture? How to circulate the knowledge that grows in a private studio space within near and far circles? Where can we find junction points between different parts of our cultural association to foster conditions for their creativity? What hides behind the process of building a good programme? These are questions that we, at Cultivamos Cultura (hereafter abbreviated as CC), have been dealing with over the past 16 years. As a cultural institution, we host private artistic residencies, grow our collection and curate exhibitions to disseminate our residents' works. We have been building support frameworks around these main practices that allow us to share atmospheres of creativity and cultural exchange. Marta de Menezes, Art Director of Cultivamos Cultura, describes Cultivamos Cultura as “a space for experimentation and the development of shared knowledge within the theory and practice of science, technology and contemporary art. In other words, Cultivamos Cultura searches for conditions to foster creativity”.

These support frameworks rest on three main pillars: community engagement, educational practices, and communication strategies. They have each grown into the backbone of our cultural institution and act as a way to intertangle and disentangle our programming. In other words, we want to connect our artist network with our partners and our audiences, both locally and internationally. But we also want to find ways to streamline our cultural knowledge in an accessible way. Even though these strategies are not CC's main activities, we believe that they underpin our main programming and that discussing them is relevant within this publication. In this particular chapter, we first highlight the importance of our community engagement in the context of letting its members tune into an atmosphere that can bring forth creativity and cultural exchange. Afterwards, we focus on how educational practices are crucial for creating spaces (physical and otherwise) where experimentation and engagement with art take place. Lastly, we discuss how our communication strategies create accessible portals towards creativity and art engagement, linking our community engagements and educational practices.

As an association that is living in a rural area, we often try to engage our local and international communities. We are physically situated in the local context of São Luís, but CC also travels in order to reach different geographies beyond our village. Nevertheless, there are multiple layers of communities living in the village of São Luís, which poses its own challenges. The local community consists mostly of older generations, but many young people are now moving into the area from the surrounding Portuguese cities. One can encounter many (inter)national artists and communities in the area that bring along a more radical perspective on living in rural landscapes. Industrial agriculture adds another layer to our community, bringing together seasonal and annual workers, which expands our cultural landscape even more. The Odemira municipality comprises 80 nationalities. Every day we encounter this pluralised audience, and we try to bring all these layers of our community together and to engage in qualitative encounters of creative and cultural exchange. Below, we will first discuss how to engage these layers of our community and then, through educational practices, how we zoom in and zoom out between the local and the international. We will end with zooming out of these practices and connecting them and our pluralised audience with our communication strategies.

Community Engagement in the Light of Rural Locality

With a rural context as peculiar as ours, we have to follow up on the development of the communities around us. This means that, along with a regular schedule of curated residencies, we have been building a net of communities that brings the international in contact with the local and the artistic knowledge in contact with the lived experience of São Luís. The concept “cross-pollination participants” is often used in cultural contexts to describe individuals who bring diverse backgrounds and who, through their interaction, mutually “fertilise” each other’s ideas. We started to observe a net that spans over different generations throughout multiple versions of São Luís and CC.

When CC was first established, we already had a large network of international artists, which made it relatively easy to have artists come and do a residency. The physical space of CC almost felt like an alternative reality where experimental contemporary art practices would happen in the courtyard, the barn, or the old house. Our private space nurtured an atmosphere where artists could inspire each other while fermenting a curiosity towards the world outside of CC. This world outside, that is, a Portuguese rural village near the ocean, left a lot of space for ideas to be cultivated in the artists’ minds. We could also see how CC’s environment offered to the artists many materials, interactions, and amazement to experiment with.

Here at CC, we consider our artist residencies as private events in which we allow the artists to explore in their own rhythm, with their own questions and their own spatial organisation. Despite the privacy of our residents, we began to hold open days and a summer exhibition to find the first point of cross-pollination with our neighbours. Unfortunately, almost nobody showed up to these events. We had clearly jumped a step in the process of building relationships with our local community.

Cultivamos Cultura is a place where knowledge is embedded in the walls, or like Yuko Oda, an artist in residence, has recently described: “It feels like we are in an archaeological dug ruin, and I am making my art.” We value the knowledge that has been growing between our walls as a condition for creative encounters to happen. Therefore, it made sense to revisit the cultural memory of the space and what the building had meant for our local community before it became a cultural association. Offering late-night cinemas, historically presented by Senhor Feliciano in his old farm, brought back engagement with the space. Luís Graça, owner of Cultivamos Cultura, wrote that “[...] the magic of the place persists: it is still necessary to wait for night to fall with increasing anticipation. You can

Image 1.

First cinema screenings
at Cultivamos Cultura
with Senhor Feliciano.

Photo credits:

Cultivamos Cultura.



Image 2.

Cinema sessions at
Cultivamos Cultura
with Cinema Fulgor.

Photo credits:

Cultivamos Cultura.



also feel the anticipation in the arrival of the spectators, now carrying their chairs—many plastic or fold-outs that would not have existed fifty years ago!” [...] “Despite all the differences, what really matters is that the experience remains unchanged: as in the past, conversations end when the light goes out, with silence for the beginning of the session. Now without unexpected interruptions. The projected images are identical, in the same place as half a century ago, at the same time of the day, after sunset, and in the same tranquility of the mild Alentejo night. Manuela and Francisco, children of Senhor Simões and Dona Dilar, continue to watch the cinema”¹.

1 Translated by Emma Hallemans.

We hosted a series of 4 movies in the same month as the exhibition (August) and screened movies that were of the same calibre as in earlier times. Interestingly, in terms of timing and generational pull, the people who came to the cinema had grown much older in 2013 than in the past. In turn, they brought their grandchildren who were visiting them during the summer holidays. Together, they went to see the film and visit the exhibition that was presented simultaneously. This brought an intergenerational cross-pollination, with the past magic of the cinema still present within the context of CC at present. As a result, these cinema nights brought to CC a local but intergenerational cultural experience. We are still hosting these cinema evenings to this day, only that they are now hosted by a local partner (Cinema Fulgor), who curates films that are relevant within the context of São Luís as well as within present-day topics. Nowadays, the cinema nights attract many different kinds of audiences—as both CC and São Luís have evolved a lot in recent times.

To dive deeper into these generational common grounds, we tried to interact with the local pre-university students who would often hang out in Odemira after school. We asked the municipality if we could exhibit our collection in a building where students and others often gather. The municipality proposed the Library of Odemira as a place where many people, including the students, come together in the winter before catching their bus. To this very day, we hold an exhibition in the library in December and transform the atmosphere so that teenagers can find common ground between their social meeting point and our artistically curated setting.

Image 3.

Poster made for early cinema screenings at Cultivamos Cultura.

Image credits:
Cultivamos Cultura.



Image 4.

Poster designed by Cinema Fulgor. Image credits: Irina Pereira.



Image 5.

Exhibition at the
library in Odemira.
Photo credits:
Cultivamos Cultura.



Image 6.

Exhibition at the
library in Odemira.
Photo credits:
Cultivamos Cultura.



In the early stages of CC, our international outreach was mostly through exhibitions outside of Portugal. Connections with foreign venues (such as Verbeke Foundation) allowed for a widespread series of exhibitions. Later on, projects funded by Creative Europe extended opportunities to bring our local practice to different geographies. Throughout the years, both CC and its local context have changed significantly. One of the most prominent changes that we observed was how many (inter)national artists had decided to come and live in and around São Luís. A group of people started the Transição São Luís movement and organised activities such as film screenings, debates, lectures, local markets, etc. with the intention to develop the locality into a more resilient, conscious, and growing community. But when, among others, this movement brought in more international groups to our local audiences, CC had to navigate this new

Image 7.

Criadores à Conversa
with Crystal Kershaw.
Photo credits:
Cultivamos Cultura.



web of ethnicities and develop more tailor-made activities for engagement with our artistic practices. This was also possible because our team was present in the village all year round, which altered our perception of our audience(s) as well as the frequency of activities, such as workshops given during the summer camps organised by a local partner called Fundação Cerro, the above-mentioned Cinemas and, more recently, our participation in the project OASis.

CC is currently a partner in the European project called OASis. One of its main objectives is to bring the local community and artists closer to each other. From this project emerged our recently introduced programme Criadores à Conversa (Creators in Conversation). With our residencies as private events, curiosity lingers among our public. To overcome this boundary, our cultural mediator started a series of conversations that take place every second Saturday of the month at the same hour. Through previous experiences like our cinemas and the local town fair, we have learned that an event, portrayed as a recurring ritual, builds trust. This is reinforced by the bottom-up approach in which we assume participants are as much of a creator/contributor as the invited one. The conversations have already taken many formats (a debate, a workshop, a walk, a talk, etc.) and continue to be different. With every new format, new theme, and a new creator, the community remains engaged; each time bringing, learning, or experiencing something new. We invite not only residents but also local creators, which gives the latter a floor to experiment with the community but also creates another string connecting CC to the community.

Image 8.

Criadores à Conversa
with Shuang Xu. Photo
credits: Cultivamos
Cultura.



Image 9.

Criadores à Conversa -
beach edition with
Louise Mackenzie,
Yuko Oda and Pedro
Gramaxo. Photo credits:
Cultivamos Cultura.



As a direct consequence of this programme, we integrate the knowledge circulating within CC, its partners, and its artists in residency with the knowledge circulating in the local audiences. Inviting both international and local creators strengthens the bond between the different communities present around São Luís and opens up more connections for Cultivamos Cultura to “cultivate culture” within its communities.

The final layer of community engagement are our youngest community members—which will also lead us into the next section. In the first steps of reaching out to the children around São Luís, we tried to bring them to our yearly exhibition in Odemira. To engage teachers in the surrounding schools with our exhibition, our cultural mediator created tailor-made “school dossiers”. These were designed booklets that connected the

Image 10.

Learning how to dye at the local schools within the context of the AQUI & ALI project.

Photo credits:

Cultivamos Cultura.

**Image 11.**

Learning how to dye at a local school within the context of the AQUI & ALI project. Photo credits: Cultivamos Cultura.

**Image 12.**

Crafting with natural materials at a local school within the context of the AQUI & ALI project. Photo credits: Cultivamos Cultura.

**Image 13.**

Learning to make cyanotypes at the local schools within the context of the AQUI & ALI project. Photo credits: Cultivamos Cultura.



artworks in the exhibition to their school curriculum. Teachers walked through the exhibit with these and used them as a toolbox to encourage the children to interact with the artworks. Unfortunately, the trip to the Odemira library was sometimes difficult to organise for the schools and the dossiers were not engaging enough to bring them there. Therefore, we decided to change our focus. Instead of bringing the schools to our spaces, we went to the schools ourselves. Our cultural mediator very persistently started contacting different schools after we found financial support to give workshops. This set off a chain of many e-mails, calls, and meetings needed for us to understand their interests, curriculum details, and scheduling. The concept stayed the same: we proposed activities that connected our residents' practices to a school's curriculum. Slowly, we built a network between CC, our cultural mediator, and the surrounding schools. The children started to recognise us from the workshops and started mentioning to their parents what they had created with CC. We also held a few workshops with invited artists so that the children were in direct contact with what happened inside the walls of our association. All these activities have led to a yearly mediation programme implementing different ways of working with our local community. We now hold between 10 and 20 workshops per year in different schools and a few workshops in partnership with a local foundation. The most beautiful moments happen when a child "misinterprets" a workshop and creates a beautiful alternative instead. At present, we are also planning to exhibit the children's works at CC to create a moment of encounter between different schools. An exchange between *us*, coming to the schools and sharing our knowledge, and *them*, visiting our space and showing their creations to family and other community members, builds strong connections intersecting multiple community layers.

Non-Formal Educational Programming—Our Feral Labs

As mentioned above, educational practices have been an integral part of establishing a space of experimentation and engagement with art. In particular, our annual summer school—or in this context, our Feral Lab—has been a cornerstone programme for CC and has been indicative of our consistent activities over the years. As a consequence, this particular education programme has already undergone multiple changes to find the best formula for CC and our different communities.

Feral Labs began in 2013 as a new five-day intensive programme targeted at adult participants. We started it as a valuable investment in

educational programming. Producing new knowledge together with artists in an informal setting enriched the contact between the participants and the artists, but also among Feral Lab participants themselves. Even though the programme has changed over time, the structure of non-formal learning stayed the backbone of our Feral Lab experience.

As a form of consistency, Marta de Menezes maintains the role of the lead faculty member each year. It also allows Feral Labs to connect with each other and with CC. For example, ideas and surprises that happened in the previous Feral Lab can be retold by Marta in the next one. In doing so, we create an atmosphere of trust and interconnectivity—as if the participants are in a place carrying many past inspirations. Every year, Marta curates a programme revolving around a central theme and invites at least one practising artist and one practising theorist. On the participant's end, CC broadcasts open calls for enrolment through mailing lists and social media platforms. Additionally, we engage different fine arts programmes to allow for a set of motivated students to apply for a scholarship.

Even though we experienced beautiful Feral Labs in the first year, it became clear early on that a five-day programme was not enough for our faculty and learning community to meet each other. Therefore, in 2014, CC expanded the Feral Lab to a two- to three-week programme, which is currently still the format. This allows participants to not only learn through workshops and lectures but also to integrate and materialise this acquired knowledge into practice. In the first week, we schedule studio practices, techniques, and theoretical discussions specifically to build a knowledge foundation. For example, we let the participants develop microlandscapes on a medium to grow microorganisms and observe their microscopic topography. In this way, participants are handed different tools and ways of understanding—in this particular case, part of Marta de Menezes' bioart studio practice. In week two (and three), the focus shifts towards independent studio work with the assistance of the faculty and the support of the surrounding community. This leaves time for the students to develop a micropractice within one learning experience. It creates space to let knowledge settle into the mind, integrate it into new ideas and materialise it into experimentation.

Because these teaching experiences were so meaningful and were not yet developed as a practice, Marta de Menezes engaged in 2018 the University of Massachusetts to develop an accredited university course with professor Ellen Wetmore. This collaboration got translated into a compressed Feral

Image 14.

Creating cyanotypes during the 2022 Summer School.

Photo credits:

Cultivamos Cultura.



Image 15.

Setting up a collective piece that emerged from the 2022 Summer School. Photo credits:

Cultivamos Cultura.



Image 16.

Workshop in building microlandscapes during the 2024 Summer School. Photo credits:

Cultivamos Cultura.



Lab structure entitled Contemporary Art and Life Sciences Workshop in Portugal. This interdisciplinary course gives non-specialists the opportunity to acquire theoretical knowledge and practical skills at the intersection of art, biology, the environment, and visual arts. Similar to the traditional CC Feral Lab, we explore this intersection through hands-on exercises that combine theory and practice in an informal setting.

On the theoretical side, we integrate topics such as the cultural representations of technology and science, ethical concerns, and the evolution of bioart as a cultural phenomenon. This involves exploring scientific concepts, processes, and knowledge, and then applying them to the creation of art, but also applying artistic approaches to scientific practices. A continuously engaging component of Feral Labs is the talk by Luís Graça, in which we learn about thought-provoking concepts within immunology. This often challenges participants to understand how a biological system can be “creative”, or how biology also deals with social concepts like “identity” and “memory”. These trains of thought often lead to interesting conceptual bases for art projects. In our Feral Labs, we integrate the theoretical side in a diverse set of exercises, such as seminars, debates, visits, and creation of artworks with biological media, etc. What is more, as part of the course, students are asked to document their work/methodology/process by keeping both an offline and an online journal.

The practical component of the first Feral Lab week occurs mostly in our laboratory, our workshop, and within the surrounding natural environment. The course, by nature, is a travel abroad programme and at root focuses on being in southern Portugal and its flora and fauna. The underlying intentions are the possibility of transforming abstract concepts into art objects, but also the collection and selection of organisms for artistic purposes. Teams of art and science students are expected to complete projects and are asked to present their ideas/works or to take part in formal critiques. For example, one workshop that brings them from the natural environment into the lab is our collection of sea urchins. Here, we make an excursion to the ocean, catch sea urchins, and challenge our participants to temporarily take care of them in our lab. While engaging in this practice, the participants are stimulated to reflect on ethics within a laboratory, on a culture of care for “the other”, and on what we ourselves can learn from sea urchins. Finally, in the second (and third) week of a Feral Lab, participants can take time to integrate perspectives, new techniques, and impressions. During this period, tools and materials are available to freely explore different projects that emerge from their reflections. The course

Image 17.

Taking care of sea urchins during the 2023 Summer School. Photo credits: Cultivamos Cultura.



typically culminates in a public exhibition of the works at CC and/or the hosting institution.

Each year, CC has been evaluating the structure of the Feral Lab programme and how we can better structure our activities for both our international and local participants. In 2025, with the partial funding of Rewilding Cultures, we offered scholarship opportunities to two local participants. This not only benefited the participants themselves, but also helped us emit our diverse programming to the community of São Luís. Moreover, the project of Rewilding Cultures gave us the opportunity to purchase specific materials and give the participants the opportunity to use and experiment with them.

One of the things that we really want to highlight when it comes to creating conditions for fostering creativity and cultural exchange cannot be written into advertisements or publicity: we try to create atmospheres with every participant and staff member on an equal, non-hierarchical level. In our co-living situation, we all take on the responsibility to take care of our environment, of each other, and of the ambience. Sitting at the table together with the people who teach workshops and organise the schedule allows for casual conversation topics and friendships to arise. Also, daily activities such as shopping at the local farmers' market and buying bread from the bakery allow our international participants to have a taste of local culture and daily life. Food has always been a topic of conversation in the sense that we come together to cook, eat, and clean. It becomes a moment to discuss cultural differences and establish points of connection. One of those special moments happened in our 2025

Feral Lab, where a student from Mexico volunteered to cook and share Mexican tacos. What proved to be a challenge was that she had to bear in mind the differences in Portuguese local ingredients and make substitutions to create the perfect tortillas—to the point that she had video chats with her family across the world. These moments of shared cooking not only provide nourishment but also give us all an understanding of the importance of food as a tool to springboard global communication. The fact that a student was inspired to cook in a rural Portuguese village, which made her navigate the local resources (a tiny supermarket and farmers' market), shows a beautiful global and hyper-local cultural exchange and conditions for creativity. These moments show us how

Image 18.

Spontaneous living room screenings during the 2022 Summer School. Photo credits: Cultivamos Cultura.



Image 19.

Greek lunch prepared by Eleni, a local participant in the 2025 Summer School. Photo credits: Cultivamos Cultura.



a non-formal education programme allows students to learn on many more levels than just within theoretical and practical exercises.

Besides its non-formal educational format, Feral Lab also really stands out for its audiences, which are a blend of international, national, and hyper-local participants. Each participant brings different tools of knowledge and experience to the table. The mix of participants is shaped by hyper-local and national scholarships and international outreach through Creative Europe-supported projects, such as Rewilding Cultures. Moreover, with the funds of Rewilding Cultures, we are able to cover the costs of materials and secure faculty payments, avoiding the need to enforce a minimum number of participants. In between these cross-pollinations of cultures, shared experiences are formed through workshops, lectures, readings, local ecology, song, dance, food, storytelling, and more.

In years past, we made efforts to identify which formats and aspects contribute best to an educational programme that fosters conditions for creativity and cultural exchange. Taking this into account, we are imagining future university-wide programming based on a structure that involves remote work and preparation for the actual Feral Lab. Then, within a concentrated physical lab at CC (usually around ten days), this remote work will be implemented in the above-mentioned combination of theoretical, practical, and independent work. This ten-day course will produce outputs that can be presented at CC or at a curated exhibition at the students' home institution. The latter would be further developed afterwards through remote work. This framework allows for the optimal use of time and for preparation as well as production in a hybrid format. We are now implementing these new formats and fine tuning their content to different universities, situations, and relevant subjects. Our Feral Labs are flexible and can be adapted to what makes sense but will always support the idea of non-formal education and the fact that it fosters an engagement with arts and creativity.

Communication Strategies—

Portals to Community Engagement and Educational Practices

Looping back to our initial framework, CC has had to adapt to a pluralised—or even “schizophrenic”—audience, from elderly locals and school students to international artists, academics, migrants, etc. The pillars, community engagement, and educational practices mentioned above visualise a set of strategies to reach these different layers

of our community. Complementarily, in our third pillar—communication strategies—we have been developing an exchange within our pluralised ecosystem. These three pillars act as connective infrastructures that find common ground in the strategies we have been developing.

On the one hand, our local engagement at CC is rooted in the sustained presence of a cultural mediator. The mediator has been embedded in the community, therefore allowing informal communication through word of mouth, daily encounters, and visible participation in daily life. Moments like meeting a child in the supermarket who immediately starts smiling and proudly states s/he still has the piece of art we made together in a workshop allow for a type of communication that would never happen without a face-to-face interaction. Besides, structured programmes such as Criadores à Conversa hold spaces for workshops, Q&As, object-based discussions, and studio visits that integrate and therefore communicate our internally circulating knowledge. They break communication boundaries and start from a bottom-up, participatory approach. Moreover, collaborations and residencies with local artists also ensure that activities remain relevant and deeply connected to the community's context. They can then act as catalysts for our communication with the deeper layers of our community.

On the other hand, our international communication has been developed through residency programmes and networks that attract international artists and researchers from diverse fields, including art, biology, and philosophy. They exchange knowledge between their locality and São Luís, and further interconnect this through online media and travel. This intercultural communication also manifests in our educational practices as exemplified above. Events such as our Feral Labs currently combine online lectures with on-site residencies and follow-up exhibitions. Through partnerships with universities, our Feral Labs provide further access, cemented by recognition and knowledge exchange. Finally, they ensure reinforced fair compensation and long-term sustainability, aided by initiatives such as Rewilding Cultures. This allows for communication with communities that we might otherwise not be able to listen to.

In both local and international engagement, digital communication plays a central role. At CC, we are active on social media platforms, including Facebook and Instagram, and more recently, Bluesky. These engage a plurality of audiences and allow us to observe demographic shifts and trends through platform use. Recently, we distributed an open call through two Instagram accounts (@maisumcasting and @Art Connect), and this resulted in 500 applications as well as a rise in

interaction with our social media platforms. Moreover, platforms such as Vimeo and YouTube host our microdocumentaries that present artist residencies, creative processes, and selected exhibitions. Additionally, our 3D digital transitioning researcher has been digitising the artworks in our collection, contributing to a digital archive that is being integrated into the main website. As a result, we ensure accessibility and institutional memory, which is particularly needed for the dissemination of our biodegradable art pieces among our international audience. In addition, we maintain a monthly newsletter, keeping informed both local and international communities about ongoing activities.

Audiences increasingly engage online and in-person with CC. They positively react to our hybrid and cross-disciplinary approaches, such as open days and exhibitions presented with contextual framing, engagement with mediation, as well as activities involving working with local memory and traditions. Beyond this point, we envision the communication strategy of CC to include continuing exploration of emerging social media platforms to be able to respond to our audience's migration.

Having discussed communication with our audiences, it is also always essential, by default, to maintain long-term relationships with our artists. We consistently inform them when their works are exhibited and provide them with materials to share, which extends visibility through collaborative communication. More recently, testimonials from former artists and participants in CC events have been introduced and strategically shared across social media platforms, highlighting lived experiences and strengthening trust through peer-to-peer communication. Collaborative communication practices with artists will remain central to our efforts, including shared posts, follow-up materials, and invitations to events. Testimonial campaigns will be sustained and expanded to amplify impact. It is needless to say that securing stable funding for communication and community engagement is essential, alongside a continued commitment to co-creation and participatory formats that keep communication embedded in community life.

Conclusion

How to cultivate culture? How to circulate the knowledge that grows within a private studio space within near and far circles? Where can we find junction points between different parts of our cultural association to foster conditions for their creativity? Coming back to the questions we posed in the introduction, we tried to answer them by describing multiple processes that CC has undergone. We have structured these processes into three pillars and elaborated on our community engagement, educational practices, and communication strategies.

The pillars all rest on the same principle: cultivating conditions where people come together to share knowledge and moments of creativity. In the light of community engagement, one of the processes we navigated had to do with the cultural memory of our physical space. Its importance showed us how to not assume that people are looking for the new atmosphere we created when establishing CC. We learned how co-creating atmospheres between CC's practices and the community's meaning for the space brought intergenerational junction points to CC. We realised that, to develop this intergenerational reach further and build relationships, it is important to travel outside of CC, into the surrounding spaces. In addition, rituals and collaboration can build trust between our association and the community. It is important to travel to other spaces with our knowledge and at the same time bring variation to ours.

Many of these processes accumulated in a mediation programme that binds different networks together through qualitative encounters. This mediation programme serves the idea of creating atmospheres of creativity and cultural exchange. As discussed in the first section, we have created a well-designed programme for different generations (workshops, recurring artist conversations, cinema sessions, etc.), but we nevertheless always strive to promote cross-pollination between generations.

Our community engagement and educational practices are very interwoven; a relationship that became clear throughout the discussions at our Feral Labs. Our labs became a way to interconnect both near and far circles across our communities. Besides, we've described our Feral Labs in the context of how they created a space for people to engage with art and explore creativity. Something that became very clear early on in the process of establishing our labs was the importance of time—time to absorb information, allow it to settle, to create, and finally present. As the labs evolved, these distinct phases were deliberately integrated into a hybrid (remote/physical) lab structure. We realised that in order to

foster art engagement and creativity, we needed to find a balance between consistency and variation as well as between different layers within our communities. Due to our involvement in Creative Europe projects and collaborations with universities, our participants now range from hyper-international to hyper-local. These groups of people can easily encounter each other within the non-formal nature of the lab. We not only challenge their critical thinking through the interdisciplinary content of the lab but also provide a place of exchange within our co-living situation, shared meals, and moments outside the structured courses. We have come to the conclusion that the process of continuously improving our Feral Lab into the most fitting version shows many ways in which space can be made available for creativity and art engagement.

Finally, at CC, communication strategies act as portals into conditions where people come together to share knowledge and moments of creativity. By combining flexible in-person local engagement and digital strategies, the institution ensures that cultural initiatives resonate locally and internationally, supporting a sense of connection and co-creative ownership. Additionally, through participant testimonials and continuous follow-up with our artists, we nurture a network that brings artists, the audience, and team members towards collective moments of cultural exchange and conditions of creativity. Our communication strategies act as glue between the other two pillars, and together they form a connective infrastructure that enables the circulation, articulation, and disentanglement of cultural knowledge across local and international contexts.

Bibliography

- Barreto, R. A., & Flavel, A. (2025). Cross-Pollination *Dynamics of Web-Based Social Media: An Application of Insect-Mediated Pollen Transfer*. arXiv. <https://arxiv.org/abs/2511.03917>
- Coleman, D. R. (2015). Responding to the Needs of the Contemporary Marketplace: The Use of Cross-Pollination Class Projects in the Undergraduate Classroom. *College Student Journal*, 49(2), 312–316.
- Coleman, D. R., & Salter, C. (2015). *Psychological Empowerment of Students Using Cross-Pollination Class Projects*.
- Czegledy, N. (2018). In Praise of the FEMeeting. *Virtual Creativity*, 8(2), 123–129. https://doi.org/10.1386/vcr.8.2.123_1
- de Freitas Castro, B. (2020). *Pensar e fazer um festival de pequena escala no campo* [Master's thesis]. Universidade Nova de Lisboa.
- Jain, P., Rodrigues, T., & Magno, G. (2011). Cross-Pollination of Information in Online Social Media: A Case Study on Popular Social Networks. IEEE.
- de Menezes, M. (2011). In the Beginning There Was Word 1. *Ecozon@: European Journal of Literature, Culture and Environment*, 2(1), 109–116.
- de Menezes, M., & Honorato, D. (2024). Cultivating Viral Culture: Artistic Research Infrastructures and Care. In *Art and biotechnology: Viral culture from CRISPR to COVID*. Bloomsbury Publishing.
- Mackenzie, L., Šebjanič, R., Żyniewicz, K., & Raty, I. B. (2021). Maintenir-se en contacte: Cas d'estudi de recerca artística durant el confinament per la COVID-19. *Artnodes*, 28. <https://doi.org/10.7238/a.v0i28.3742>
- Morell-Rovira, J. (2021). The other residents: Apropaments a no humans en l'obra de Paula Bruna. *Croma*, 18. <https://croma.belasartes.ulisboa.pt>
- Nøjgaard, M. Ø., & Bajde, D. (2021). Comparison and Cross-Pollination of Two Fields of Market Systems Studies. *Consumption Markets & Culture*, 24(2), 125–146. <https://doi.org/10.1080/10253866.2020.1713112>
- de Sousa, S., Mead, E., Stephenson-Bartley, J., & Alexiou, K. (2023). *Cross-Pollination Resource Pack: Facilitating Cross-Sector Design Collaboration*. Open University. https://oro.open.ac.uk/102273/1/2023.02.06_cross-pol_resource_spreads_online_small.pdf
- Vaage, N. S. (2017). Fringe Biotechnology. *BioSocieties*, 12(4), 561–584. <https://doi.org/10.1057/s41292-017-0048-2>
- Woodland, R. H., & Mazur, R. (2019). Examining Capacity for “Cross-Pollination” in a Rural School District: A Social Network Analysis Case Study. *Educational Management Administration & Leadership*, 47(5). <https://doi.org/10.1177/1741143217751077>

II—2

Sabina Oroshi

Projekt Atol: Practices for a Planetary Now

Sabina Oroshi, an independent curator and researcher, has curated exhibitions and collaborated with institutions across Europe, including at Kunsthalle Trier, Kunsthalle Bratislava, Drugo More, IRCAM – Centre Pompidou, and Culture Hub Croatia. She lectures internationally on curatorial methodologies, posthumanism, and participatory practices. Her writing explores how art can illuminate alternative epistemologies and relational ways of knowing. She is co-editor of *Antimanual of Care and Accountability* (forthcoming).

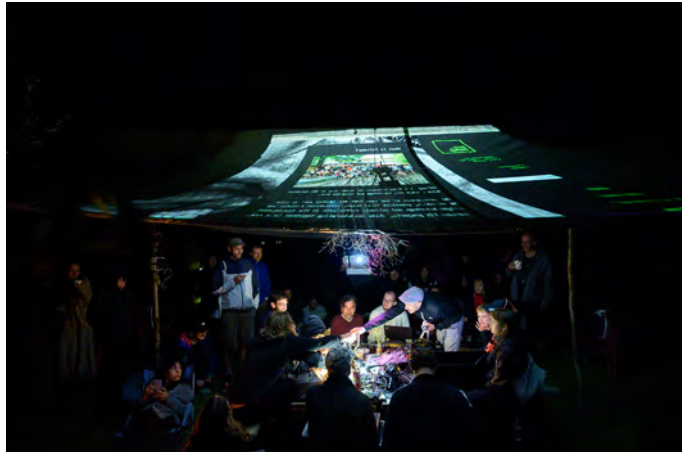
Abstract

This chapter reflects on how creative platforms operate beyond their physical sites, tracing how institutional practices unfold across time, space, and relation. Focusing on Projekt Atol in Ljubljana and the Resilients project (2011–ongoing), the text approaches the institution not as a stable structure but as a dynamic field shaped by collaborations, gestures, and ongoing transformations. Drawing on conversations, projects, and theoretical framings, the author proposes the notion of the cosmogram as a way to read institutional practice as world-making: material, relational, and continually in formation.

The Near and the Far

Starting from Projekt Atol in Ljubljana and expanding outwards—regionally, geopolitically, planetarily, we might ask: at what scale does a creative platform cease to be a place and becomes a force, a network, a resonance?

Image 1.
Patch from
Scratch session,
part of PIFcraft.
Photo credits:
Katja Goljat,
PIFcamp 2025.



What begins as a passing thought soon reveals itself as a dense constellation of ideas. Writing about a platform like Projekt Atol, one with a long list of realised projects and an even longer list of speculative ones, becomes a way to think not just about what an institution *is*, but how far its reach extends: inwards, outwards, and across time.

Image 2.

Experimental workshop
by Diana Alina
Serbanescu, part of
her ongoing project
*What If Machines
Could Witness Our
Falling?*, exploring
the entanglements of
intimacy, technology,
sound, and motion.
Photo credits: Katja
Goljat, PIFcamp 2025.



Image 3.

Resilients project
archive.



Institutions act not as fixed structures but as gravitational fields, felt most intensely when we are caught in their orbit. During my conversations with the team at Projekt Atol, they told me how past collaborations continue to unfold elsewhere, years later, sometimes unbeknownst to them until a signal returns. This surprises them. Projects continue to grow in other places, in other hands, still carrying something of Atol within them. This pattern of unfolding echoes began to suggest a cosmogrammatic structure, one that is branching, recursive, and open-ended. This chapter takes seriously the idea that an institution is not a fixed structure but a shifting field of signals, gestures, relationships, and prototypes. It unfolds across multiple scales: from the workshop to the network, from the forest to the satellite, from the whisper to the broadcast. It becomes possible, then, to reimagine the diagram as more than a map of what is, toward an invitation to sense what *might become*. To rewild it. To let it grow tendrils.

Reading the Cosmogram

I will examine Projekt Atol's long-term collaborations within *Resilients*¹ (2011–ongoing), exploring how its gestures and structures might be read as a living cosmogram. Cosmograms are material-semiotic forms that give shape to how a group, culture, or individual understands their place in the cosmos. Beyond a device for simplifying our understanding, cosmograms are world-making devices.

Image 4.

PIFcamp activities timeline, visualised as an evolving cosmogram. Photo credits: Katja Goljat, PIFcamp 2025.



John Tresch argues that cosmograms are not mere symbolic abstractions or closed cultural worldviews; they are material, crafted attempts to express the universe, its components, its relationships, and its possible orderings. Whether as mandalas, cathedrals, scientific treatises, urban plans, or planetary diagrams, cosmograms offer what Tresch calls “shortcuts in the hermeneutic circle” through which people articulate, contest, and negotiate their place in a world that is always in motion (Tresch 2007: 84–99).

- 1 (Ed.) *Resilients* was initially a project skilfully led, and mentored by the team of FoAM Bxl (BE), with partners Central Saint Martins, Textile Futures (UK), nadine (BE), Performing Pictures (SE), Time's Up (AT), and Projekt Atol (SI). The project was supported by the EU Culture Programme and although funding concluded in 2013 and the consortium no longer convenes, it remains a seminal reference in the conceptualisation of Projekt Atol's subsequent projects. Projekt Atol's team asserts that FoAM's activities and its network of bubbles constitute key inspirations for the strategic resilience of their processes and have substantially informed numerous subsequent long-running as well as short-term projects.

I see this framing as especially resonant for institutional, curatorial, and artistic practices. A cosmogram in this context is not a resolved image of the world but a speculative proposition, something lived with, felt through, and continually reworked. Rather than approaching *Resilients* as a stable entity, I read it as a constellation – an ongoing choreography of gestures, each specific, situated, and relational. As Theodor Adorno suggests in *Negative Dialectics* (1966), constellations do not define concepts directly. Instead, they reveal meaning through arrangement and proximity. “The thing itself,” he writes, “is its context, not its pure selfness.” In this view, thinking does not move in a straight line towards definition but orbits its subject, seeking to unlock meaning not with a single key but with a combination (Adorno 1981: 164–168).

Michel Serres, in conversation with Bruno Latour, reminds us that no single key opens all locks. There is no universal method, he says, “only methods drawn from within the problems themselves”. The most fitting solutions are local, singular, adapted, specific. “The best synthesis,” he continues, “only takes place on a field of maximal differences—striped like a zebra or a tiger, knotted, mixed together” (Serres & Latour 1995: 91). A constellation is not a system but a field in which concepts emerge from proximity rather than from definition.

Image 5.

PIFresident Julian Chollet and the soil chromatograms, an offshoot of his residency research, co-created with the community.

Photo credits:
Katja Goljat,
PIFcamp 2024.



Resilients

I believe no single key opens all locks; each case study, each idea, each stream within *Resilients* demands its own tempo, its own lens, its own kind of listening. *Resilients* is a distributed inquiry into how we live with uncertainty. As I write this, that uncertainty feels painfully present. At the time of writing, the news broke that The Global Sumud Flotilla, on a mission to deliver humanitarian aid to Gaza, is being attacked. I find myself contemplating the resilience of its members and the ripples their actions send outwards. Not resilience as mere endurance or the ability to “bounce back” but as a capacity to absorb disruption, adapt, and imagine otherwise. In social and political terms, it becomes a form of situated resistance, what Anna Tsing calls “the art of noticing” in the ruins, where care, improvisation, and collectivity generate new possibilities within constrained conditions (Tsing 2015: 17–25). In this climate of escalating violence and deepening injustice, the need for resilient, creative, and collective practices becomes even more urgent. *Resilients* bring together artists, gardeners, walkers, cooks, technologists, and thinkers into a loose constellation of experimental actions.

Each project becomes a temporary situation, a workshop, a boat, a ritual, a garden where resilience is defined and enacted in place. The work moves between speculative futures and ancestral techniques, between material gestures and imagined scenarios.

Image 6.
Vytautas Bikauskas’
Repair Kit project, part
of PIFcamp’s evolving
toolkit of situated
resilience. Photo
credits: Katja Goljat,
PIFcamp 2025.



Speculative Templates

Just as the strands within *Resilients* resist singular definitions, they also resist linear storytelling. Rather than summarise, I propose to create with their logics, to follow the branching, recursive, and embodied practices that make up their method. Each terrain calls for its own format: a map, a logbook, a field guide, a flowchart. In these editorial forms, the cosmogram unfolds as *gesture, technique, ecology*. Here are a few ways these speculative templates take form: *Control of the Commons* (enters as a map and legend), *Augmented Urban Gardens* (unfolds as a fungal flowchart), and *The Pollinators* (develops as a micro essay).

Control of the Commons

A project by Time's Up (Australia, Austria, Belgium) within the *Resilients* constellation, *Control of the Commons* (2011–2012) begins with water. Rivers, canals, deltas, approaching them as social infrastructures shaped by memory, labour, and access. The project navigates these waters in vessels built from recycled and local materials. It moves along the Danube, the Murray, the Belgian canals, gathering stories from those who live and work on the water.

Image 7.
Resilients project
archive.



Guide Through the Cosmogram:

Enter from any point.
Do not rush the river.
Every quote is a current.
Every detour is part of the map.
If something doesn't add up, float with it longer.

Terrain: Riverine commons, frictional borders, slow bureaucratic time,
hydro-ecologies in disrepair, micropolitics of everyday life on water

Vessels:

Subak: A catamaran built from a discarded Zille and an old windsurf board.
Coffee-dyed cotton sail, bamboo battens, skateboard rudder.

Subak2: A former racing dinghy rebuilt for a parade and a river mission.
Lateen sail made from an old soda ad.

Other crafts: Improvised, patched, resistant to speed. Boats as slow media.

Methods: Drift as research, conversation as archive, improvisation as
engineering, failure as method, careful listening over extractive data.

Encounters:

Grey nomads who sold their house to live afloat

A kayaker with more speed than stories

A lockmaster sceptical of handmade oars

A young man just released from prison, returning upstream
with a dog and no fire permit

Bureaucrats pulled from Sunday BBQs to inspect DIY dreams

Locals who say "Tear out the dams" or "Bring the river back to the swimmers"

Inquiries:

Who gets to control the commons?

What happens when infrastructures decay?

Is resilience about resistance or adaptation?

Can a vessel carry political intent, or only people?

What futures flow through water?

Here, resilience is tested by weather and wear. The commons is more than an ideal, it is a set of questions that float.

Augmented Urban Gardens

Non-Green Gardening (NGG) experiments at Time's Up (Linz) by Natalia Borissova together with the *Resilients* gardeners (2012) blurred the boundary between gardening, fungal art, and environmental hacking. Rather than narrate *Augmented Urban Gardens* as a fixed project or linear story, this part follows its mushroom logic: rhizomatic, experimental, sensory, and cyclical. Following the cultivation logic developed by Natalia Borissova and Dismas Leonard Sekibaha, the cosmogram embraces failure as feedback and growth as iteration.

Flowchart of Failure & Fruiting:

Start

↓

Choose a Fungus:

Oyster (*P. species*) → Easy, colourful, fast
King Stropharia → Low maintenance, soil partner
Nameko → Cold-tolerant, slimy & delicious
Elm Oyster → Shade-loving, great with strawberries
Shiitake → Slow, rewarding, prefers logs
Lion's Mane → Delicate, indoor-friendly

↓

Select a Bed Type:

Indoor pot
Suspended bed
Grounded bed
Hugelkultur mound
Mushroom log in flowerpot (1/3 buried)
Mycohügel: raised bed with logs, mulch, veggies

↓

Location & Conditions:

Moist shade → Good mycelium spread
Semi-shadow → Best for Stropharia & logs
Sunny dry spot → Risk of dehydration
Covered but ventilated → Ideal for tropical species

↓

Add Companion Plants:

Tomatoes + Basil → Looks great but competes for water
Strawberries + Elm oyster → Excellent synergy
Potatoes + Oyster (in hugel mound) → Productive pair
Corn + Beans + Mushrooms → Three sisters + mycelium

↓

↓

↓

↓

↓

↓

Substrate Test:

Coffee grounds
Straw
Logs (ash, alder, beech, birch)
Cat/dog food soup (nutrient booster)
Cardboard + paper mulch
Woodchips (fresh vs. aged)
Espresso pucks & newspaper

↓

Mycelium Handling:

Plug spawn (for logs)
Grain spawn (for indoor/pots)
Stem butts (low-tech propagation)
Clone your own → "Clone party"

↓

Check Weather:

Rainy summer → Fruiting success
35°C heatwave → Mycelium dies
Cold snap → Nameko thrives
Slugs → Devour Stropharia

↓

Outcome:

Fruiting body emerges → Harvest + taste + share
Dry log → Reuse or re-inoculate → Back to Substrate Test

↓

Feedback Loop:

What failed? Compost it
What worked? Repeat + scale
Keep a fungi journal → Observe patterns
Invite collaborators → New hands, new eyes

↓

Next Fruiting:

Kitchen lab meal / Workshop /
Cloning ritual / Worm farm expansion /
Mushroom Fest / Harvest Party

↓

Resilience Grows Underground

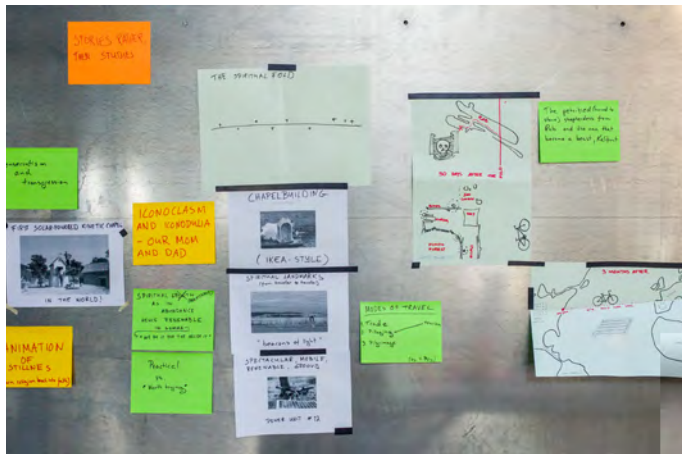
→ **Repeat cycle**

This speculative *Flowchart of Failure & Fruiting* can be an example of a practical logic-map of the project's resilient life cycle.

Image 8.
Resilients project
archive.



Image 9.
Resilients project
archive.



The Pollinators

In *The Pollinators* (2011), a project by FoAM and Friends (Poland, Czech Republic, Austria, Slovenia, and Croatia), the pilgrimage becomes the project. Bicycles, tricycles, solar panels, and mobile chapels become both vehicles and ritual tools. No single destination; no single purpose. Instead, a moving cosmogram unfolds, a path composed of gestures, relics, detours, refusals, invitations. Like spores carried on the wind, the project pollinates through movement.

The visible diagram consisting of routes, gear, and stops is only half the map. The other half lies in what poet-philosopher Hakim Bey calls in *Overcoming Tourism* the fractal dimension of travel: “I think of travel as fractal in nature. It takes place off the map-as-text, outside the official

Consensus, like those hidden and embedded patterns that nestle within the infinite bifurcations of nonlinear equations in the strange world of chaos mathematics. In truth, the world has not been completely mapped, because people and their everyday lives have been excluded from the map, or treated as ‘faceless statistics’, or forgotten.” (Bey 2017)

The Pollinators don’t follow a linear schedule but unfold in cycles of movement and return, drift and anchoring. Creating lines of resonance across regions and disciplines, reactivating old routes while tracing new ones. The orbit holds together what might otherwise remain disconnected.

Curating from Within the Fold

I began this inquiry for *Feral Labs* by asking in what ways institutions, curatorial and artistic practices might reshape how we sense and imagine Earth. I wanted to think through speculative mappings that are embodied, planetary, and infrastructural, as this constellation of practices unfolded across rivers, fungal networks, pilgrimages, and other terrains. It became clear that cosmograms are not merely diagrams of how we understand the world but tools for moving from the *concept* of rewilding to a *practice* of reworlding. As framed by the Serpentine’s (Serpentine Galleries Podcast 2025) *Reworlding* initiative, this involves not only new representations of planetary life but also new engagements with it, where dreaming, connecting, and remembering become generative methods for inhabiting the world otherwise. The cosmogram, then, is not simply a map but a rehearsal space: a terrain for assembling possible worlds within the ruins of dominant ones.

Rather than offering a singular narrative of the planetary, Projekt Atol and their collaborations embrace multiplicity: heterogeneous histories, cosmologies, and local knowledges that exceed hegemonic frameworks. They bring the conceptual (cosmogram) into direct contact with the epistemological (how we perceive and know Earth).

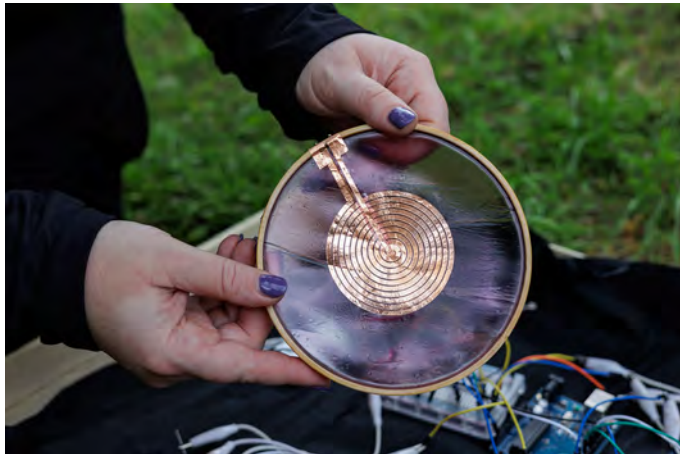
As Patricia Reed writes, “distant viewing changes how we see the near” (Reed 2025). The global, she argues, often reproduces dominant frameworks and power structures, while the planetary demands a rethinking of how we relate, perceive, and make sense of Earth. In this reorientation, aesthetic practices, including art, installation, and curatorial mediation, become vital not for illustrating planetary conditions, but for allowing us to *see from within* them. The cosmogram, in this light, becomes a curatorial and artistic technique for inhabiting this perceptual tension: not to resolve it, but to hold open space for ambiguity, for relational complexity, and for unfamiliar forms of attunement. It invites

Image 10.

Gong session by
Tilen Sepič. Photo
credits: Katja Goljat,
PIFcamp 2025.

**Image 11.**

Flexible Bioelectronics
by Marisa Satsia
and Jessica Stanley.
Photo credits: Katja
Goljat, PIFcamp 2025.



a planetary aesthetics that resists the simplification of the global and instead foregrounds proximity, entanglement, and situated knowledge.

In *Terra Forma: A Book of Speculative Maps*, Frédérique Aït-Touati similarly proposes mapping as a practice of “slow vision”, one that unsettles inherited cartographic habits and invites renewed attunement to Earth’s complex, entangled conditions (Aït-Touati, Arènes, & Grégoire 2022). The call for a type of cosmopolitical cartography resonates with the *Resilients*’ experiments in diagramming futures from within uncertainty: from within the folds of experience, maintenance, and improvisation. Their gestures, then, become a curatorial and artistic technique, tools for institutions to navigating complexity, holding together the speculative and the situated, the embodied and the infrastructural.

Image 12.
Resilients project
archive.

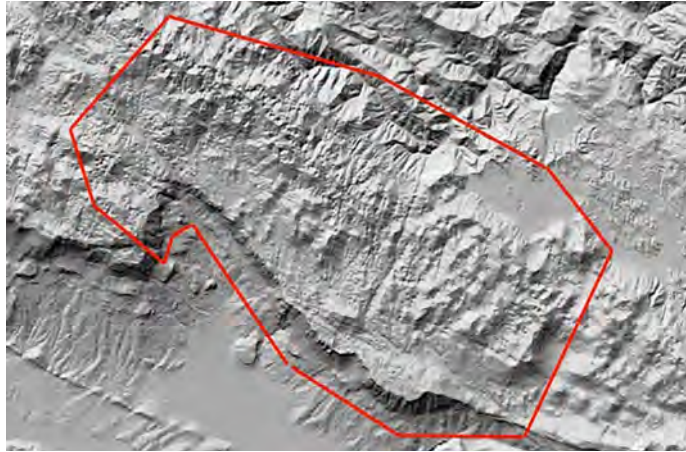


Image 13.
Botanical Bodies by Diana Aires focused on
researching, collecting, and engaging with the
landscape of Triglav National Park, drawing
attention to performative gestures between the
human and the botanical bodies. Photo credits:
Katja Goljat, PIFcamp 2025.



Bibliography

Adorno, T. W. (1981). Constellation and Constellation in science. In *Negative Dialectics* (E. B. Ashton, Trans., pp. 164–168). London: Continuum. (Original work published 1966)

Aït-Touati, F., Arènes, A., & Grégoire, A. (2022). *Terra Forma: A Book of Speculative Maps* (S. Muecke, Trans.). MIT Press.

Bey, H. (n.d.). *Overcoming Tourism*. Hermetic. com. <https://hermetic.com/bey/tourism>

Reed, P. (n.d.). Viewing What Is Far to See What Is Near: On Making Sense of the Planetary. *Stadtkuratorin Hamburg*. <https://stadtkuratorin-hamburg.de/en/research/texts/viewing-what-is-far-to-see-what-is-near>

Serpentine Galleries. (n.d.). *REWORLDING*. <https://www.serpentinegalleries.org/art-and-ideas/reworlding/>

Serres, M., & Latour, B. (1995). *Conversations on Science, Culture, and Time* (R. Lapidus, Trans. University of Michigan Press.

Tresch, J. (2007). Technological World-Pictures: Cosmic Things and Cosmograms. *Isis*, 98(1), 84–99. <https://doi.org/10.1086/512833>

Tsing, A. L. (2015). *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton University Press.

II—3

Sergey Dmitriev & Andrew Gryf Paterson

Slow Travel, Symbiocenic Families, and Rewilding Culture Gatherings Towards Glocal Kinship

Sergey Dmitriev has experience in high-tech industries (Siemens, DELL, Google) and in organising cooperation between industry and universities. With a decade of experience living and researching in ecovillages and other back-to-the-land grassroots initiatives in post-Soviet countries, Northern Europe, and the Balkans, he now works on pilot projects to grow Symbiocenic Environments—a framework for long-term cooperation between ecovillages, universities, and natural protected areas.

Andrew Gryf Paterson is a self-styled “artist-organiser” and “autoarchaeologist”, cultural producer, curator, educator, archivist, and independent researcher. Specialised in developing and leading inter- and transdisciplinary projects exploring connections between art, digital culture and science, cultural activism, ecological and sustainability movements, cultural heritage and collaborative networks. Most recently, Paterson has been coordinating Pixelache’s Archival Strategy 2024–2026.

Abstract

This chapter interweaves exchange narratives of three families encountered through slow, land-based travel between Northern and Southeast Europe. Drawing on journeys shaped by displacement, mobility grants, and chosen forms of agro-nomadic living, the authors trace how movement becomes a site of shared learning, kin-making, and ecological attunement. These trajectories include explorations of anticipated climate migration, the loss of geopolitical privilege, and reverse journeys through forested landscapes undertaken as acts of care, education, and transmission. Across Serbia, Montenegro, and Finland, family-based initiatives—such as school gardens, forest universities, and community-held land—emerge as living laboratories for cultural, bioregional, and educational regeneration. Rather than treating travel as consumption or transit, the chapter frames slow movement as a practice of meaning-making that cultivates what the authors describe as a “social mycelium”: a network of relations connecting the Balkans and Northern Europe. Through these exchanges, migration is reclaimed as a relational and transformative process, grounded in reciprocity, low-cost mobility, and long-term care for shared ecological and social futures.

Introduction

In this essay, we interweave and exchange narratives of four families whom we met during their slow travel from the North (Finland and Karelia) to the Balkans (Serbia and Montenegro). As authors, we have come from and to those places separately, but later combined our experience: Andrew Gryf Paterson, as an immigrant artist-researcher originally from Scotland, but based long-term in Helsinki, was awarded a Rewilding Cultures Mobility Conversation grant by Bioart Society (Millasnoore 2023). Andrew’s mobility aimed to explore the topic of anticipated (climate) refugees’ paths and resettlement. Meanwhile, Sergey Dmitriev’s experiments with simple everyday practices, research, and living in rural regenerative communities in the Russian Federation and Nordic region were conducted during the pandemic in Karelia. Sergey’s experience was expanded with refugee and agro-nomadic travels in 2022–2025, “thanks” to losing some of his privileges as a citizen of the Russian Federation.

The four families that were encountered were met within the context of four social practices highlighted below, which are deeply rooted in landscapes and all their human and non-human inhabitants. Reflecting upon the overlap of practices and experiences, the authors propose in this article formal and informal hints to assist nurturing symbiocenic kinships,

and further rewilding and regenerative approaches. What everyone involved had in common was the ambition to work with and towards the *symbiocene*, an aspirational notion first discussed by the Australian eco-philosopher Glenn Albrecht: “We wish to live and learn in symbiosis with our surrounding habitat, to take our place within the ecosystem that we live in, consciously, and with an understanding of our affect” (Albrecht 2019).

Andrew departed on their travels with an understanding that the mode of nomadcity will be an ever more prevalent condition in the future due to the effects of global climatic and environmental changes (Vince 2022). Meanwhile, Sergey left their preferred bioregion—the Karelian taiga—with the hope of resettling wherever possible, given the visa regulations for Russian citizens, as long as the ecological context felt familiar and safe. Furthermore, those initiating first travels and experiences are augmented with two more Rewilding Cultures Mobility Conversation grants awarded by Bioart Society in 2024 and 2025. The interweave of persons’ travels, habitats for learning, and related practices is elaborated on below in different essay sections. Note that persons are introduced with their full name and later on referred to by their first name only.

Practice 1. Slow Travel

Most often, technology speeds up our lives, allowing us to connect with each other (especially via internet and IT platforms), but it also facilitates slow travel, enabling social networks that significantly cut down accommodation costs, and has a reduced environmental impact. Sergey, for example, uses platforms like WWOOF, WorkAway, CouchSurfing, and TrustRoots, and seeks accommodation (whether it’s one night or 4–5 weeks) that is based on social trust, work exchange, and solidarity networks. To travel from A to B, Sergey hitch-hikes and walks to feel the bio-social context of the territory. Again, technology is of great help, with offline maps created by the online OpenStreetMap community, and participatory knowledge bases like Hitchwiki, Nomadwiki, and Trashwiki. For more organised travel nevertheless culturally immersed in locality, Sergey monitors Blablacar (Dmitriev 2022a). Meanwhile, Andrew used App-based franchise coach travel (Flixbus) to coordinate cross-land (and ferry) travel from Finland to Serbia, with short stays at professional and family hosts, in other words, using accumulated social capital, at several locations along the way.

Family 1 & 2 – Regenerative neighbourhood on edge of ‘Fruška Gora’ national park, near Novi Sad, Serbia

Thanks to WWOOF and Global Ecovillage Network connections made by Sergey, are a three generation family whose home which is also a live lab for “ecopreneurship”, ecological building, and a forest school, i.e. an outdoors kindergarten (Dmitriev 2023b). Sergey came across their activities when he searched for initiatives that could be a part of a framework where ecological/regenerative neighbourhoods and eco-villages cooperate with protected nature areas, universities, and indigenous people, a combination he describes as a “Symbiocenic Environment” (Dmitriev 2023a). Due to this vision, Goran Sadzakov suggested that Sergey get in touch with their close neighbours and friends, Višnja Kisić and Goran Tomka, who are eco-culturologists and professors at the Belgrade University of Arts. Alongside their four-year-old son Istok, this family cares for the Forest University (Šumski Univerzitet), hosting reading circles, communal gardening, residences, events, and research expanding human horizons to kin of non-human beings (Dmitriev 2023b).

Andrew’s Rewilding Cultures Mobility grant for slow travel to Serbian destinations was based on Sergey’s own networks and connections with both these families, gaining a new insight and perspective on the travel southwards, including reference points to nomadic travel and eco-philosophy based on climate migration (Paterson 2023; Kisić & Tomka 2024d). However, a counterpoint was gained: how to settle and grow appropriately in symbiocenic relation to one’s own ecosystem, aligning with the territory’s nature-culture, including the use of local plants in cuisine and adopting local material construction methods. Moreover, as a result of Andrew’s visit, Višnja and Goran also applied to the Rewilding Cultures Mobility Conversations grant opportunity in 2024, and were also successfully selected by Bioart Society to make an exchange visit to Finland. They also developed the concept of “symbiotic movements”, which is related to slow travel and dedicated to learning with non-human beings in forest contexts. Additionally, they decided to travel with their then three-year-old child Istok and use their new electric vehicle as both a means of transportation and a “symbiocenic” mobile home camping at different forest locations along the way (Kisić & Tomka 2022, 2024a).

Image 1.

The window of truth at the Sadzakovs' house. It shows how the wall is made out of clay and straw. Photo credits: Andrew Gryf Paterson.



Image 2.

The window of truth at the Sadzakovs' house. It shows how the wall is made out of clay and straw. Photo credits: Andrew Gryf Paterson.



Image 3.

The Forest University map in Fruška Gora, near Novi Sad. Illustration credits: Forest University.



Family 3: At the Adriatic Seaside and in the Mountains of Montenegro

The third locus on Andrew's travel and research list in 2023—and where Sergey also lands on occasion to “recharge in a community” and continues his anthropological studies of intentional rural communities—is that which surrounds eco-philosopher Igor Polsky and Irina Sardarova, parents of four (Paterson 2024b) who in Bar, Montenegro, founded a school garden for Russian, Ukrainian, and Belarusian children aged 7–15, and a kindergarten for children under 7, working from a socio-ecological basis for education. Igor's visionary writings, such as *On the Edge Community Manifesto* (Polskiy n.d.), *Welcome to 2023: Time for New Stories* (Polskiy 2023)—attract people to get involved in the activities and events that he co-organises. Additionally, their initiative called Mountain Land, a community-owned 16 hectares of upland pasture and woods close to the Serbian border, attracts regional and international co-shareholders and participants. Currently, there are 23 plot investments by individuals, families (including the Forest University family) or entities; and the commons resource is a shared management project, employing sociocracy decision-making methods and blockchain register of decisions or commitments (Sociocracy 3.0 n.d.).

Image 4.

Montenegro community around a school garden.

Illustration credits:

Ekaterina Stepanova.

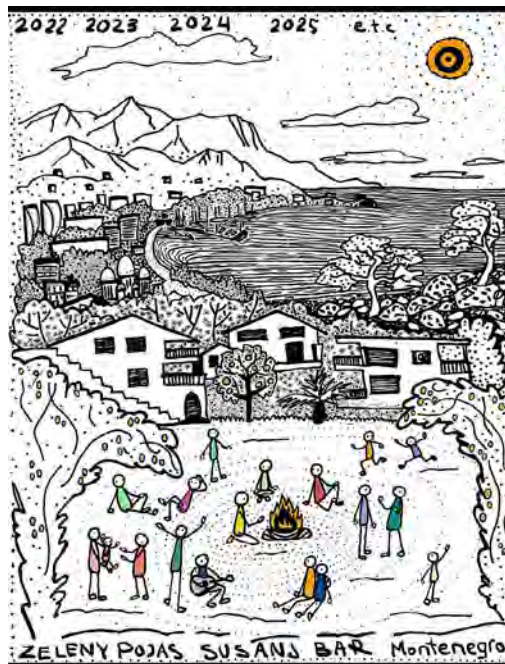
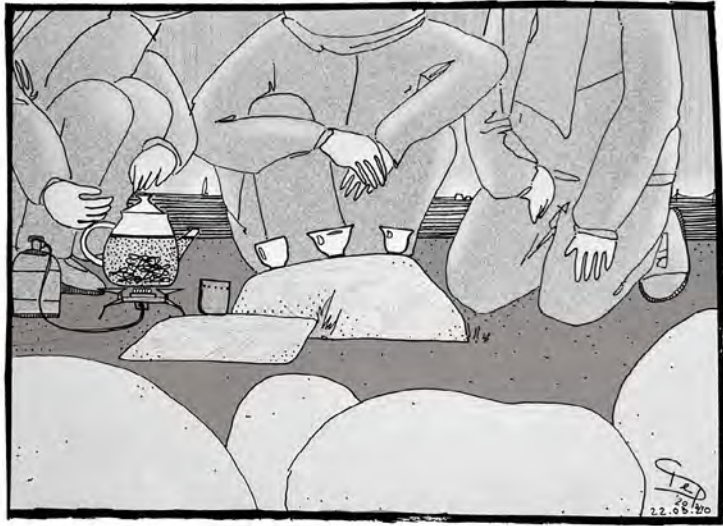


Image 5.
Montenegro
community's tea
parties. Illustration
credits: Ekaterina
Stepanova.



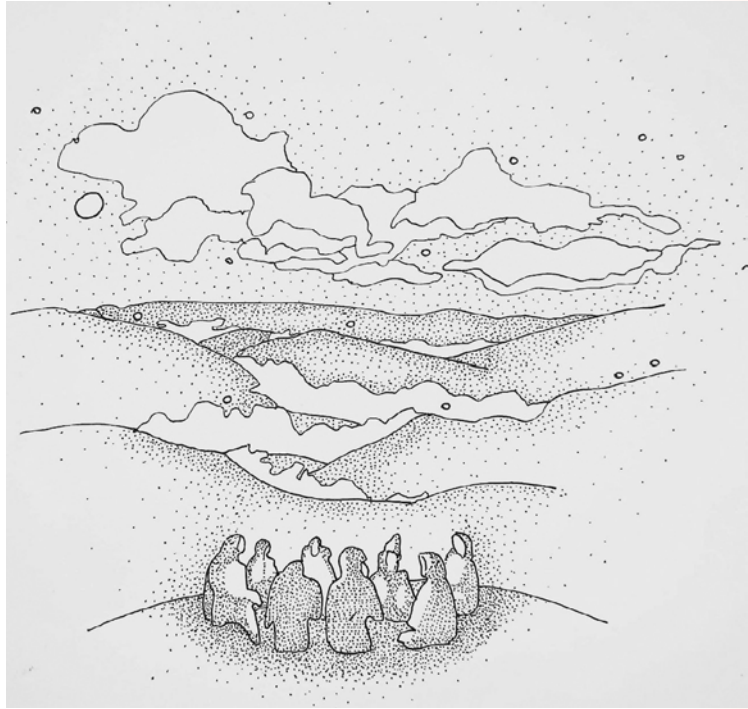
40 секунда до чаша

Practice 2. Deep Live Gathering

Every year since 2021, Igor and Irina's colleagues and friends co-organise one of the international locations for Deep Live Gathering (Dmitriev 2022b), an event initiated by Deep Adaptation Forum—a global community where members share the vision of Jem Bendell's independent research/report on climate change that the current generations will face civilisation collapse, accompanied by multiple disasters (Bendell & Read 2021). Members of the forum try to cope with this vision by psychologically supporting each other. The Forest University family hosted the Serbian node of the gathering in 2022, 2023, and 2024. According to Sergey, these gatherings always have unintentional dynamics, and was initially quite sceptical about the community's basic vision and its founders, but has nevertheless been attending the events annually since 2022. They proved to be deep and important, mostly due to the people attending them and the places where they are hosted. In 2025, the Montenegrin Deep Live Gathering was held at Mountain Land, offered flexible attendance over 2–9 days, and was dedicated to the theme of Celebrating Death as Liberation and a Way to Rebirth (Live Gathering 2025).

Image 6.

Deep Live Gathering
at the Mountain Land
site in Montenegro.
Illustration credits:
Ekaterina Stepanova.

**Family 4: In the Arctic Fells, at a Biological Station**

While working together on this text (in-person at the Forest University in September 2025), Andrew was reminded of Agáta Marzec, who was also awarded a Rewilding Cultures Mobility Conversations grant to travel to Gilbbesjávri (Kilpisjärvi) Biological Station, part of the University of Helsinki, in Finnish Sápmi, 440 km north of the Arctic Circle, in June 2025. Originally from Slovakia but currently based in Tallinn, Agáta is an interdisciplinary researcher working across ecology, art, and pedagogy (Marzec 2021). As an associate lecturer at the Estonian Academy of Arts, they facilitate courses such as *On the Commons: Land, Knowledge and Practice and Ecology in the Expanded Field*. As a friend, Andrew knew that Agáta was making this long journey north to residence together with their four-year-old child August. Agáta's family context was different from Višnja and Goran's travel from Serbia to Finland, where their child was actively included as part of the research, and was less foregrounded in her residency blog post (Marzecova 2025). This nuance later prompted a conversation between Andrew, Agáta, and Sergey about their Rewilding Cultures Mobility Conversations grant and how such mobility experience may or may not affect both mother and child.

Practice 3. Immersion in Protected Wilderness

The two weeks that Agáta spent at Gilbbesjávri, and the multi-dimensional reflections that emerged from this experience, reminded Sergey of the three winter months they spent at the Kostomuksha Nature Reserve in 2018 and 2019. Such remote, protected landscapes function not only as ecological sanctuaries but also as cultural reserves, sustaining indigenous and bioregional forms of knowledge. It is in these contexts that long-standing regenerative culture has been developed in balance with non-human neighbours, pointing towards ways of thinking and working that may inform rewilding and regenerative forms of “feral” laboratories, grounded in place, continuity, and relational learning.

To illustrate, we’d like to share Agáta’s words in private correspondence reflecting on their time at the biological station: “I very much agree that having the opportunity to spend time in remote territories and experience their nature–cultural entanglements is an incredible chance to go beyond normative understandings of ‘nature’ and to step sideways from ingrained ideas of nature as merely a backdrop to human or cultural life. However, to truly make use of such experiences, we also need to introspect, unlearn, and perhaps ‘rewild’ our own knowledge practices through which we make sense of this experience. In my case, to spend time respectfully in places that have been internally colonised (also through science expeditions), rewilding needs to be first about repairing the epistemological erasures embedded within the scientific canon. Introspection and unlearning, which for me are central to such rewilding, require time and exposure to situated realities. In this sense, creating Feral Labs is an important step towards breaking down limiting patterns of knowledge and practice. This also applies to children. Bringing a child into such environments does many things at once: it blurs the line between productive and reproductive labour, positions adults and children as co-learners, and helps us to learn with and in environments, not merely about them.” Agáta’s statement raises further questions: How to blur that line? How to initiate spaces for such environments? We suggest that further discussions and experiments are needed to revise how we care for the territories and ecosystems that are officially declared as protected areas. It could be done using multi and transdisciplinary approaches, in post-institutional frameworks that align with symbiocenic environments mentioned above, i.e. where intentional communities (ecovillages, transition neighbourhoods) and indigenous people live and act in symbiosis with higher education, research, and nature conservation institutions.

Image 7.

Walking the Arctic fell trails. Photo credits: Agáta Marzec with their child.

**Image 8.**

Botanical observations around Saana. Photo credits: Agáta Marzec.

**Image 9.**

Mountain birch forest. Photo credits: Agáta Marzec.



Practice 4. We Are Earthlings

The Forest University started Earthlings in 2024 as an annual explorative gathering dedicated to symbiocenic, regenerative, and convivial ways of relating to the Earth (Kisić & Tomka 2024b, 2025). It is rooted in the assumption, as the name suggests, that all living beings on this planet are co-habitants. The event takes place on the land of the Forest University over two summer weeks, and 15–20 people are invited to jointly explore various theories, traditions, and practices related to healing and critical thinking. The gathering is self-funded by small donations and organised in a non-hierarchical manner, with no leaders or teachers.

Image 10.

Foraging wild forest berries.

Illustration credits:
Ekaterina Stepanova.



Conclusion

We hope that the interweaving of families and practices described above will give some insight on how connections are made between slow travel, temporary hosting, and shared appreciation for ecological habitats. The common thread is a desire for informal education and gatherings that don't fit either typical university research or NGO work; in this way, they are post-organisational. The fact that families are included in the process and that the gatherings take place where one lives in everyday and natural settings develops a more tribal aspect based on similar values, meanings, and shared practices. Practices, which may be imagined as glocal (global & local) kinships, interconnected in global networks, beyond the local. Learning to make kin with non-human beings is important in territories and ecosystems, but should be done with utmost care and consideration in areas which are natural protected areas, even if they are safeguarded and researched by national institutions. Višnja and Goran further chart the practices that emerge from alternative communities and art scenes, and which we highlight here, in their article *Beyond Green: Towards Ecological Politics of Mobility in Arts and Culture* (Kisić & Tomka 2022). We propose that they be adapted and implemented in academic pedagogy and research, and in the training and development of a new symbiocenic entrepreneurial scene (Ecoprise n.d.).

Community experiments, including education, events, permaculture, natural construction materials, and international knowledge exchange, such as what is found at Forest University in Fruška Gora, Serbia, create an environment for cultural and bio-regional regeneration. Meanwhile, the school garden model applied in Bar, Montenegro, is an important example of practice and development, promoting the appreciation of nature-based systems at a young age; an appreciation that will one day develop and “graduates” towards university-level understanding. It is worth noting that the practices not only “rewild” the families of practitioners and researchers including their surroundings, but their guests as well. To conclude, slow travel! At such a considered and appropriate pace, there is an opportunity for “social mycelium” to grow, connect, and nourish relationships between people and places. In our case, that has meant preparing fertile ground for further cooperation between the Balkans and Northern Europe.

Image 11.

Domestic tabletop in
Bar, Montenegro.

Photo credits:

Andrew Gryf Paterson.



Image 12.

Grape harvest in Bar,
Montenegro.

Photo credits:

Andrew Gryf Paterson.



Bibliography

Albrecht, G. A. (2019). *Earth Emotions: New Words for a New World*. Cornell University Press.

Bendell, J. & Read, R. (2021). *Deep Adaptation: Navigating the Realities of Climate Chaos*. Polity Press.

Dmitriev, S. (2022a). *Social Slow Travel: Low-Cost & Zero-Waste*. Medium. <https://sergeydmtriev.medium.com/1d8b16b11c94>

Dmitriev, S. (2022b). *Unaware (Unconscious) Violence and Seeds of In-Action: Deep Live Gathering 2022 in Montenegro*. Medium. <https://sergeydmtriev.medium.com/523b09ff9b9a>

Dmitriev, S. (2023a). *Symbiocenic Environments*. Medium. <https://sergeydmtriev.medium.com/da1696ddddd1>

Dmitriev, S. (2023b). *Transformational Eco-Tourism and the Art of Symbiocenic Living in Serbia*. Medium. <https://sergeydmtriev.medium.com/7407a76b3964>

Ecoprise (n.d.). *Ecoprise: Future-Oriented Social Entrepreneurship Through Ecovillage Design*. <https://ecoprise.eu/>

Kisić, V., & Tomka G. (2022). Beyond Green: Towards Ecological Politics of Mobility in Arts and Culture. In Duxbury, N., & Vidović, D. (Eds.), *Conceptual Approaches and Frameworks: i-Portunus Houses, Volume 2* (pp. 176–202). Kultura Nova Foundation.

Kisić, V., & Tomka G (2024a). *Rewilding Cultures: Homecoming With Gifts From Distant Relatives Rewilding Cultures*. Bioart Society. <https://bioartsociety.fi/projects/rewilding-cultures/posts/homecoming-with-gifts-from-distant-relatives>

Kisić, V., & Tomka G (2024b). *How We Lived as Earthlings*. Šumski. <https://www.sumski.net/2024/08/05/how-we-lived-as-earthlings/>

Kisić, V., & Tomka G. (2024c). *Rewilding Cultures: Symbiotic Wilderness Rewilding Cultures*. Bioart Society. <https://bioartsociety.fi/projects/rewilding-cultures/posts/symbiotic-wilderness>

Kisić, V., & Tomka G. (2024d). *Teachings With Distant Relatives*. Šumski. <https://www.sumski.net/2024/09/24/teachings-with-distant-relatives/>

Kisić, V., & Tomka G. (2025). *About Earthlings*. Šumski. <https://www.sumski.net/2025/05/27/472/>

Live Gathering. (2025). *Deep Live Gathering 2025*. <https://livegathering.org/dlg2025>

Millasnoore, M. (2023). *Rewilding Cultures: Andrew Gryf Paterson Slow Travelling From Finland to Montenegro in October*. Bioart Society. <https://bioartsociety.fi/projects/rewilding-cultures/posts/andrew-gryf-paterson-slow-travelling-from-finland-to-montenegro-in-october>

Marzec, A. (2021). On Forest Walking and Ecologies of Care. *Forest as a Journal*, (1), Lithuanian Culture Institute. <https://asajournal.lt/articles/on-forest-walking-and-ecologies-of-care/>

Marzec, A. (2025). *Notes on Rewilding the Botanical Gaze*. Bioart Society. <https://bioartsociety.fi/projects/ars-bioarctica/posts/notes-on-rewilding-the-botanical-gaze>

Paterson, A. G. (2023). *Rewilding Cultures: Departing from Helsinki*. Bioart Society. <https://bioartsociety.fi/projects/rewilding-cultures/posts/departing-from-helsinki>

Paterson, A. G. (2024a). *Rewilding Cultures with Andrew Gryf Paterson: Leaving Comfort Zones and Academically Clean Spaces (1/2)*. Makery. <https://www.makery.info/en/2024/05/10/english-rewilding-cultures-with-andrew-paterson-leaving-comfort-zones-and-academically-clean-spaces-1-2/>

Paterson, A. G. (2024b). *Rewilding Cultures with Andrew Gryf Paterson: How to Live in Symbiocenic Harmony With our Changing Environments (2/2)*. Makery. <https://www.makery.info/en/2024/05/10/english-rewilding-cultures-with-andrew-paterson-how-to-live-in-symbiocenic-harmony-with-our-changing-environments-2-2/>

Polskiy, I. (n.d.). *On the Edge Manifesto*. Live Gathering. https://livegathering.org/on_the_edge_manifesto

Polskiy, I. (2023). *Welcome to 2023: Time for New Stories*. Live Gathering. <https://livegathering.org/welcome2023>

Sociocracy 3.0. (n.d.). Sociocracy30.org. <https://sociocracy30.org/>

Vince, G. (2022). *Nomad Century: How Climate Migration Will Reshape Our World*. Allen Lane, Penguin Books Ltd.

II—4

Steffan Jones Hughes

Why Was the Sea Serpent There?

Steffan Jones-Hughes is an artist. He produced T-shirt designs and exhibited internationally, working for galleries including Tate, Whitworth, and Walker Art Gallery. After establishing The Regional Print Centre, he worked for Arts Council England before developing the concept for Tŷ Pawb in Wrexham. After a brief spell as Curator at Aberystwyth Arts Centre, he became Director of Oriel Davies in 2017.

Abstract

The Island of Batz, located off the northern coast of Brittany in western France a few kilometres from the mainland, is easily reached by a 15-minute ferry crossing. It was there that, from June 30 to July 6, 2025, the third edition of ArtLabo Retreat took place, bringing together worldwide artists and researchers to participate in a programme of workshops focused on topics related to art, biology, and ecology. The text that follows presents a report from one of the retreat's participants, Steffan Jones Hughes, from Wales (UK), reflecting on the history and mythical elements connected to the island and its inhabitants.

ArtLabo Retreat 2025

The Île de Batz ArtLabo Retreat was a week-long international gathering. Its focus was on sharing research-creation practices in the field of marine biology, biomaterials, sustainable food, upcycling & circular economy, open-source technology, video & sound arts, and media publication.

In 2025, the ArtLabo Retreat was organised by ART2M/Makery in partnership with Association Ultra (Le Relecq-Kerhuon) and Kerminy art farm (Rosporden). National and international artists, ecologists, technologists, and others were invited to mentor workshops with a strong focus on: bioart practices related to biology of evolution and marine biology; global algal photosynthesis and solar energy systemics; edible algae ethno-botany, algae foraging & cooking; circular economy, sustainable design, upcycling, and biomaterials; and hypermedia practices related to those fields.

Île de Batz is a small island off the Breton coast near Roscoff. Paul Aurelian (Saint Pol de Léon), a sixth-century Welshman from Glamorgan, was one of the seven founder saints of Brittany, Christian missionaries, mostly Welsh, who came in the region and founded dioceses. Pol was a vegetarian and, according to legend, died aged 140 on the Île. At the far west of the Île de Batz, not far from the Colonie du Phare, you can visit the Trou de Serpent—a rock formation marking the spot where, according to legend, Saint Pol-de-Léon cast a dragon / or a sea serpent / or a snake that had been terrorising the inhabitants of the island into the sea. This story has similarities to Saint Patrick, another Welsh missionary, who banished snakes from the island of Ireland. Are “snakes”, “sea serpents”, and “dragons” metaphors rather than actual reptiles? The snake may represent the pagan religions and Druidic practices that missionaries helped replace with Christianity. In Christianity, the snake is often an allegory for evil or temptation. The Christian narrative says that once upon a time, there was a beast

who wreaked terrible havoc on the island. When Pol Aurélien arrived in Batz to exercise his ministry, the island's governor begged him to deliver the country from this monster. Pol headed towards the creature's lair. Arriving there, he ordered it to come out. The dragon advanced towards them. Undaunted, Pol, with God on his side, is said to have wrapped his stole around the beast's neck. (You can still see the stole in the island's church.) Led by this improvised leash, the serpent obediently followed the saint until the evil demon disappeared into the sea, banished forever.

And not only that: Pol was also credited with creating a freshwater well on the island. This framing of narrative has been seen across history. When colonial settlers arrive somewhere, they bring with them new technologies, advances in science, society, and civilisation. Nature is harnessed, old traditions are eradicated, the new normal has arrived! Out with the old, in with the new.

So, we have a legend that perpetuates man's control of nature and the supernatural that feels colonial in its retelling. The creatives who gathered on the island, the 41 artists, curators, thinkers, and ecologists, were perhaps more interested in the idea of "More-Than-Human rights". I felt as though we were there to listen to nature, to respond to it, to reflect on it, to be guided by it in our collective approach to playful creativity. An awareness of the environmental challenges facing our shared planet. We can't continue to operate an extractive model and need to work collaboratively with nature to ensure our mutual survival. Having focused creative time with like-minded individuals is like going back to school with people you choose to be there. There was a great sense of camaraderie, of playfulness, of learning, we were all part of a broader ecological community. There is much talk about health and wellbeing in today's society, but it was clear that the group on the island demonstrated an awareness that personal wellbeing is intrinsically linked with the wellbeing of our local ecosystems. There was a willingness to understand the interconnectedness of nature and our part in it.

Rather than banishing the sea serpent's voice of nature, ArtLabo sought to seek it out and listen intently.

Further reading

Chouliara, C. (2025, August 12). *ArtLabo Retreat, From Blue to Green*. Makery. <https://www.makery.info/en/2025/08/12/english-artlabo-retreat-from-blue-to-green/>

Ferreira, E. (2023, July 5). *ArtLabo Retreat: A Week of Creating in and With Nature*. Makery. <https://www.makery.info/en/2023/07/05/artlabo-retreat-une-semaine-pour-creeer-dans-et-avec-la-nature/>

Fischer, R. (2020, September 22). *ArtLabo Retreat: Summer camp symbiotique à l'Île de Batz*. Makery. <https://www.makery.info/en/2020/09/22/artlabo-retreat-summer-camp-symbiotique-a-lile-de-batz/>

La Gare, Centre d'art et de design. (n.d.). *La Gare, Centre d'art et de design*. <https://lagare-cad.org/>

Roscoff Tourist Office. (n.d.). *Roscoff, Côte des sables, Enclos paroissiaux* [Tourism information]. <https://www.roscoff-tourisme.com/en/>

Walsh, L. (2025, July 25). *ArtLabo Retreat: A Journey to the End of the World*. Makery. <https://www.makery.info/en/2025/07/25/english-artlabo-retreat-a-journey-to-the-end-of-the-world/>

II—5

Irene Posch

What Making Tools Taught Me About Making Cultures

Irene Posch is a researcher and artist with a background in media and computer science. Her work explores the reciprocal integration of technological development into art and craft practices, and the social, cultural, technical, and aesthetic implications that emerge from these intersections. She is Professor of Design and Technology at the University of Art and Design Linz, where she founded and heads the Crafting Futures Lab.

Abstract

This chapter reflects on the role of tools in shaping collaboration, inquiry, and knowledge production within lab-based and community-oriented practices. Shifting focus from spatial co-presence to material engagement, it examines how tangible instruments and prototypes actively condition the ways we think, make, and work together. Drawing on a long-term personal practice at the intersection of textiles, electronics, and computation, the chapter traces the development of tools for electronic textile practices across diverse collaborative settings.

Introduction

Discussions about labs often centre on spatial-social co-presence—the ways people interact and collaborate within shared spaces. However, in this article, I want to shift the focus towards the tools we use that shape these interactions. While a lab, a setting, or a community can itself be considered a kind of tool, my attention is focused on the tangible materials and instruments we use, and how we, both individually and collectively, have the power to transform them. Prototypes, collaborative settings, and temporary communities play a crucial role in this process, enabling us to inquire, propose, and experiment with new tools.

In this article, I recount my own journey of creating tools for electronic textile practices—a field that bridges electrical engineering and textile crafts. What began as a small exploration among a handful of practitioners evolved into a multi-year project spanning diverse collaborative settings. These settings—spaces for critical discussions, making, and reflection—allowed us to consider new tools not just as preferable or ideal but as possible, enabling a broader inquiry into not just what but how we (can) make, which, in turn, shapes our practices, perspectives, and culture.

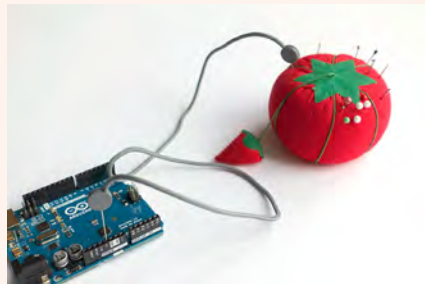
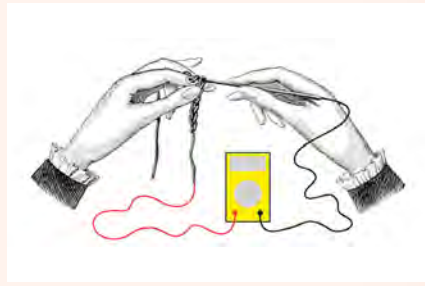
Personal Practice as Driving Force for New Tools

Textile crafts are among the oldest arts practised by humankind, dating back to the prehistoric making of strings. Since then, they have played essential functional and aesthetic roles, shaping human experience, development, and civilisation over centuries (Gordon 2011; Parker 2019; Hughes-Riley, Dias & Cork 2018). Electricity, on the other hand, has only had a sustained impact since the late nineteenth century, while digitisation followed almost another 100 years later. These different histories, traditions of production, and areas of application distinctly shape the thinking, understanding, and productive means of textiles, electronics, and computation.

While these fields *are* markedly interdependent (e.g., Fernaeus, Jonsson & Tholander 2012; Rosner, Shorey, Craft & Remick 2018; Posch 2018), textiles and (electronic and digital) technology are predominantly considered to be orthogonal. They are often associated with disparate gender stereotypes: textile crafts with domestic, female work, and electronics with skilled, male tasks (e.g., Beaudry 2006; Peppler 2016). My practice of many years is situated within this intersection. I explore textiles and electronics that condition and propose distinct qualities and assumptions, and the specific inquiries and insights their intersections may allow (Images 1–3).

The actual act of combining textile and electronics within artistic, experimental, and functional artefacts inspired me to closely study the tools used in these processes (Perner-Wilson et al. 2015). There are very practical reasons why it is important to reconsider the tools we use: in any given craft, there are only a few techniques that do not require any tools and can be performed with hands alone (Pye 1968); therefore, tools as a means of production determine, control, and structure what is possible, shaping the actions that can be performed in any area of making (Adamson 2013). However, beyond purely practical implications, the consideration of tools is also central to any investigation of craft, being even “intrinsic to a politically aware investigation of craft—all the more so in a postdisciplinary environment” (Adamson 2013: 32). In this sense, a tool’s form, function, and cultural embedding cannot be considered neutral, as they potentially include or exclude specific experiences, insights, and goals—whether explicitly or implicitly (McCarthy & McQuaid 2014). Historically established stereotypes might surface, suggesting who uses the tool, in what domain it is used, and what artefacts it brings into being (Beaudry 2006).

What started as a practical necessity gradually shifted into “the making of objects that go on to make other objects ... [as] a distinct form of



Composition 1

Images 1–3. Examples from my practice: exploring textiles and electronics as craft, materials and artefacts that condition and propose distinct qualities and assumptions, and the specific inquiries and insights their intersections may allow. *The Embroidered Computer* (2018, in collaboration with Ebru Kurbak), *Not North* (2019, in collaboration with Talia Mukmel), *Magnetic Reverberations* (2023, in collaboration with Elizabeth Meklejohn and Laura Devendorf). Photo credits (top to bottom): Irene Posch, Talia Mukmel, Elizabeth Meiklejohn.

Composition 2

Images 4–6. Examples of proposed new tools: illustration depicting the process of measuring resistance while crocheting; Connectable Needlework Tools as part of an eTextile making space; Prototyping Pins connecting an Arduino Board with a pin cushion. Photo credits: Irene Posch.

research and discovery, one that operates only indirectly on the finished product” (Adamson 2013: 31). And while my practice is both the starting point and a test bed for the development of new tools, I consider it an essential part of my entangled research and design approach that new tools are not mere static objects to be looked at but active interventions proposed to the larger community of practitioners.

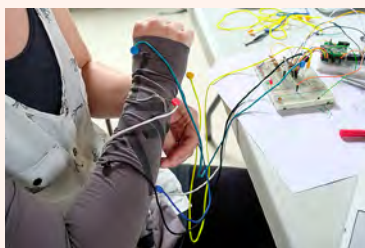
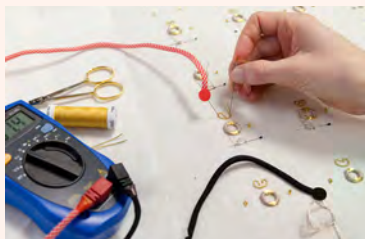
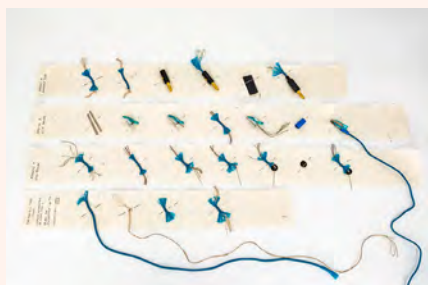
Make Believe What Could Be

In conventional electronics, testing continuity is typically done with a multimeter—a robust, multifunctional tool for measuring current, voltage, and resistance. By touching the device under test with two probes, a user can instantly read the electrical value on the display. In electronic textiles, the measuring tasks remain similar, but the design space differs substantially. Circuits are individually fabricated from soft, often delicate fibres rather than wired with insulated cables. Because designs are custom-made, each connection must be newly conceived and tested in the making.

Standard electronic probes thus often fall short when used with fabrics and threads: their probes may not be well suited to make precise contact with thin and flexible materials, or may be damaging to fabrics, making it hard to establish good electrical contact. Textile tools, by contrast, have been refined over centuries to manipulate delicate threads into exquisite results and in the process allow for precise and firm yet gentle contact with textile material. They are often made from metal, which means they are also conductive.

Based on the reflective observation of actual needs within my practice and my explicit choice to value textile crafts and textile materials in the context of electronics, I speculate what tools more suitable to an integrated electronic textile craft may look like. I propose a selection of new tools inspired by pins, needles, and hooks—tools with such strong associations to needlecraft and sewing that they are often seen as symbiotic with the practice (Beaudry 2006). In repurposing them as electronic probes, I create tools that allow a temporary electric connection to textile-based circuits and, in some instances, even permit construction with textiles. Their wiring is lightweight and flexible so as to not tear or damage delicate constructions (Images 4–6).

I consider the results *possible* and potentially *preferable* tools (Dunne & Raby 2013)—plausible alternatives. To enable others to engage with these new tools, I demonstrated their use, presented them as products, shared open-source instructions for reproduction (Posch 2017), and



Composition 3

Images 7–9. Examples of make-believe and collaborative meaning-making: Schmiede Werkschau presenting new tools as packaged products; physical step-by-step instructions to make new tools; workshop on how to make new tools. Photo credits: Irene Posch.

Composition 4

Images 10–13. Examples of new tools in use: Pin Probes used to embroider a computer; Pin Probes used to measure a sensor sleeve and connect it to conventional electronics at Summer Camp, an eTextile community meeting in France; during a residency at osmo/za, Ljubljana, produced by Zavod Projekt Atol and Ljudmila. Photo credits (top to bottom): Irene Posch, Irene Posch, Irene Posch, Katja Goljat.

hosted hands-on workshops (Images 7–9). This was to allow others to relate to and use these tools, and to explore how they may transform making in an emerging field.

Making Meaning Together

Offering workshops to make designing new tools accessible to others quickly evolved into an essential method for investigating current tool use, needs, and assumptions. It allowed both the multiplication of tools and a rich setting to discuss their relevance to a practice, thereby expanding the research: not only were new tools *proposed*, but *participants* began to *make* new tools by themselves.

Studying the collaborative making of tools showed how the production of one's tools could expand the understanding of a practice: it could bridge the divide between the conditions that bring a practice into being and the practice itself. This confrontation engaged users across a spectrum of expertise more directly than theoretical arguments about the tool's design and potential could.

To novices, it proved a valuable first encounter with eTextile characteristics and materials, allowing them to learn about the routines, tools, and qualities that define the practice. To practitioners, the possibility of making alternative tools provided an opportunity to reflect on their core practices, reconsider past approaches, and challenge previously accepted limitations. It provoked active considerations of the dominance of the tools used until then, as well as their limitations.

A repeated articulation within these workshops of how the new tool designs addressed existing needs, sometimes previously unrecognised by practitioners, has shed light on how tools implicitly embed and prescribe the “right” or “only” way (Adamson 2013) and on the trade-offs between pieces of equipment. Whenever participants adapted the designs, they once again expanded their understanding beyond the given possibilities, reconfiguring the tools towards new meaning/making within interdisciplinary practices.

Eventually, the multiplication of tools allows assumptions to be tested in practice beyond my own work. The following examples describe and illustrate emergent craft routines (Images 10–13):

The work on The Embroidered Computer included connecting coils made from very thin copper wire to metal threads, with as little resistance as possible. A typical scenario was to first embroider the connection. Then, the needle is put down, the multimeter picked up, and the probes carefully placed on the golden thread to measure the resistance. If the contact is good enough, the multimeter can be put away, and the needle picked up again to proceed with the embroidery. If the contact has too much resistance, a reiteration is needed to improve the stitches on the connection. It may be necessary to go back and forth several times between different tool sets to measure and manipulate the embroidery.

A few sessions in, I proposed the Pin Probes to the professional embroiderer helping with the gold embroidery work. The Pin Probes could be pinned directly into the metal thread and left there without damaging the embroidery. Having completed the first connection with the help of the new probes, the professional embroiderer said: “It’s like operating on a live patient! You immediately see the [electric] effect of your actions and can respond in real time!” She was then able to reflect and act on her stitches based not only on the qualities visible in the embroidery but also on their electrical quality, continuously displayed as a change in resistance on the multimeter. Being able to observe the changes introduced by individual actions or stitches is essential for transforming the making process from discrete steps of trial and error and tool switching into a continuous conversation with the material at hand.

Further along in the making, she also noticed how pinning through the fabric allows contacting the conductive material on the back of the fabric without turning the embroidery around. These new routines, resulting from the use of new tools, have noticeable impacts both on the ergonomics of the tasks and the understanding of the effect individual routines have on the electronic functionality. It saved the disruption of having to switch tools, allowing simultaneous focus on the textile and electronic qualities of the crafted artefact instead.

Another example concerns the making on the body—the testing of wearable textile sensors in action. In this context, it is essential to minimise the disruptions that a measuring instrument causes to the sensor. Participants discovered the Pin Probes leave far smaller marks on the textile sensors when worn because the connection through the pin leaves minimal marks and because the textile cable is lightweight and flexible.

The proposed tools have also increasingly been used on conventional hardware. Participants noticed the Pin Probes plug neatly into JST

connectors and allow testing an IC chip through its plastic insulation, piercing but not damaging it.

As a by-product of the collaborative making and using of new tools, new materials were discovered that could potentially prove beneficial to eTextiles beyond their use as tool parts. This was especially the case for the materials used to make a Textile Cable, i.e. the paracord material as a new way to insulate conductive lines while preserving the flexibility and softness of the textile material, and to use new types of conductive threads, in this case, thicker and more conductive copper threads previously hardly used within eTextiles. Another example would be the use of diverse forms of pins as electrical conductors, not just as probes but as interactive or prototyping elements.

I wasn't thinking of any of these scenarios when I set out to rethink the tool space. These routines were simply not possible beforehand; instead, they evolved because new tools were physically *available* in the workspace and immediately usable with a multimeter. One person's description of the Pin Probes as "one of those things that are obvious after you see them" sheds light on the seemingly inconspicuous details that may shape a practice. It is in small statements like these that the dominance of what we consider given becomes apparent—and how these assumptions shape *how* and *what* we practice.

Crafting Tools, Crafting Cultures

What I described may seem like small practical changes, but I argue they are accompanied by fundamental conceptual changes. A tool paves the way for other things to happen. The particular function it can carry out defines the making space. The use of a tool as a distinctly technological artefact "facilitates people's involvement with reality, and in doing so, it co-shapes how humans can be present in their world and their world for them" (Verbeek 2006: 364). Depending on the tool, specific aspects are amplified, while others are reduced, influencing human perceptions, actions, and experiences.

In making electronic qualities perceivable within crafting routines, these new tools place tinkering and prototyping within the textile domain and embed textile crafts within electronic making. They allow for a continual dialogue with open-ended textile and electronic form and function. Instead of reacting to discrete measurements taken after the fact, they *integrate* electronic and textile crafts. They enable what Schön called reflection-in-action: providing crafters the means to "see" the (electrical)

change they introduced through their craft actions, making it possible to enter into reflective conversations with the design situation (Schön 1992). Such ad-hoc qualitative judgement also allows for what Ingold described as wayfaring behaviour: to be responsive to what is continually revealed, being alert to the diverse cues that, at every moment, may prompt an adjustment (Ingold 2007). These abilities to interpret the material feedback and exercise nuanced changes with dexterity and care are essential qualities of a craft process.

My work with eTextiles made apparent how the choice of tools shifts inherent conditions of making, defining what is possible and what can be perceived as possible. Discussions with practitioners further disclosed the tools' potency beyond practical engagements, into social and cultural realities that shape a field, shedding light on the inherent conditions of making that define its margins and potentials.

In front of a more general audience, the tools' mere visual form provoked mixed reactions—ranging from disinterest to intrigue—as their reference to “women's skills” challenged the norms of the male-dominated field of electronics. Some felt invited to contribute the skills they already had, while others dismissed the tools because of their association to needlework. These responses not only highlight that tools are never neutral but also show how intentional design can introduce new skills and materials into making practices and help disrupt stereotypes (e.g. Peppler 2016; Bardzell 2010). Hence, I argue that tooling is specifically crucial in the context of emerging technology practices, as these lack an example of how things are done and are also expected to be widely influential. (Re)considering the tools that configure our involvement with these emerging realities means—leaning on Verbeek's words—no less than (re)shaping how we can be present in our future world and how it can be present for us.

As Harraway writes: “It matters what matters we use to think other matters with.” (2016) That is, designing tool alternatives to the status quo matters for considering what materials and routines are core to a practice; proposing new tools matters for shaping its metaphorical, social, and cultural grounding; using new tools matters for revealing different potentials and functionalities within a practice, and possibly different approaches to it. And this matters, especially for enabling emerging hybrid electronic practices and new technological futures.

Bibliography

- Adamson, G. (2013). *The Invention of Craft*. Bloomsbury Visual Arts.
- Bardzell, S. (2010). Feminist HCI: Taking Stock and Outlining an Agenda for Design. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1301–1310). ACM Press. 10.1145/1753326.1753521
- Beaudry, M. C. (2006). *Findings: The Material Culture of Needlework and Sewing*. Yale University Press.
- Gordon, B. (2011). *Textiles: The Whole Story*. Thames and Hudson.
- Fernaesus, Y., & Sundström, P. (2012). The Material Move: How Materials Matter in Interaction Design Research. In *Proceedings of the Designing Interactive Systems Conference* (pp. 486–495). ACM. 10.1145/2317956.2318029
- Haraway, D. J. (2016). *Staying With the Trouble: Making Kin in the Chthulucene*. Duke University Press.
- Hughes-Riley, T., Dias, T., & Cork, C. (2018). A Historical Review of the Development of Electronic Textiles. *Fibers*, 6(2), 34. 10.3390/fib6020034
- Ingold, T. (2007). *Lines: A Brief History*. Routledge.
- McCarty, C., & McQuaid, M. (2014). *Tools: Extending Our Reach*. Cooper Hewitt, Smithsonian Design Museum.
- Parker, R. (2019). *The Subversive Stitch: Embroidery and the Making of the Feminine* (Reprint ed.). Bloomsbury Visual Arts.
- Peppler, K. (2016). A Review of E-Textiles in Education and Society. In *Handbook of Research on the Societal Impact of Digital Media* (pp. 268–290). IGI Global. 10.4018/978-1-4666-8310- 5.ch011
- Perner-Wilson, H., Satomi, M., Posch, I., & Kurbak, E. (2016). *TOOLS WE WANT*. <http://toolswewant.at/>
- Posch, I. (2017). ETextile Multimeter Probe. <https://www.instructables.com/ETextile-Multimeter-Pin-Probe/>
- Posch, I., & Fitzpatrick, G. (2021). The Matter of Tools: Designing, Using and Reflecting on New Tools for Emerging eTextile Craft Practices. In *ACM Trans. Comput.-Hum. Interact.*, 28(1), 1–38. 10.1145/3426776
- Pye, D. (1968). *The Nature and Art of Workmanship*. Cambridge University Press.
- Rosner, D. K., Shorey, S., Craft, B. R., & Remick, H. (2018). Making Core Memory: Design Inquiry into Gendered Legacies of Engineering and Craftwork. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (pp. 531:1–531:13). ACM. 10.1145/3173574.3174105
- Schön, D. A. (1992). Designing as Reflective Conversation With the Materials of a Design Situation. *Research in Engineering Design*, 3(3), 131–147. 10.1007/BF01580516

II—6

Mario Savini

Living Future: Biotechnological Aesthetics for New Ecological Imaginaries

Mario Savini, PhD, is an art critic, journalist, and adjunct professor of Contemporary Art History at the University of Camerino. His research explores the intersections between biotechnology, digital culture, and contemporary visual art. He contributes to *Nòva - Il Sole 24 Ore* and is the editor-in-chief of *Postinterface*, a web magazine on science and digital art. He authored *Postinterface* and *Arte transgenica: La vita è il medium* (both by Pisa University Press). His work reflects a commitment to investigating aesthetic transformations in post-natural and technologically mediated environments.

Abstract

The “living future” does not point to a distant tomorrow but describes a present in transformation, where biological and biotechnological innovations intertwine with everyday experience, destabilising its boundaries and opening unpredictable scenarios. Within this horizon, bioart emerges as a critical and speculative practice, capable of challenging the categories of natural and artificial, human and non-human, food and waste, while creating radical visions of life. Bioartistic practices traverse and rewrite vital processes, turning the living into aesthetic, political, and imaginative material. Experiences such as Mary Maggic’s feral citizenships, the post-digestive dinners of Koehne, Zuo, and Jiabao Li, Adam Zaretsky’s transgenic zoologies, Zheng Bo’s erotic ecologies, Maja Smrekar’s molecular colonisations, and the corporeal fusions of Stelarc and Nina Sellars reveal how art can operate at the threshold between ecology and provocation, generating rituals, performances, and imaginaries that interrogate toxicity, contamination, and the potential for new multispecies symbioses. This study seeks to explore how bioart, in dialogue with the thought of Feral Labs, can activate unprecedented ecological imaginaries and delineate alternative forms of symbolic and theoretical rewilding. Through emblematic case studies, it aims to address crucial questions: How can biological manipulation become an ecological act? What forms of knowledge emerge when the body and the environment are conceived as shared laboratories? And how can art, by embracing the risks of speculation and transgression, imagine sustainable futures already germinating within the heart of the present?

Introduction

The “living future” is neither a remote horizon nor a utopian promise, but rather a concept that enables the present to be read as a site of radical transformations. In the twenty-first century, biological and biotechnological innovations permeate everyday life, contaminating bodies, environments, and imaginaries. Instead of projecting itself onto a linear tomorrow, the future manifests today as an unstable and evolving process—a distributed laboratory in which living matter is continuously rewritten.

Within this context, bioart emerges as a critical and speculative practice, capable of challenging the categories of natural and artificial, human and non-human. In line with Donna J. Haraway’s reflections on “tentacular thinking” and multispecies relations, life can be conceived as a network of fluid and interdependent connections, where the boundaries between organisms, environments, and technologies are never fixed but

always negotiated: “Tentacularity is about life lived along lines—and such a wealth of lines—not at points, not in spheres.” (Haraway 2016: 32) This perspective invites us to rethink the relations between living beings and their environments, emphasising how every interaction forms a part of a complex fabric of coexistence and mutual entanglement. Bioart thus becomes one of the privileged arenas for observing and interrogating ongoing transformations, translating cells, tissues, hormones, and genomes into a field of aesthetic, political, and imaginative inquiry.

Artists go beyond merely reproducing scientific protocols, bending them towards new questions: What does it mean to inhabit a world already saturated with toxicity? How can the relationship with the ecologies that traverse us be reinvented? What feral, hybrid, and symbiotic alliances might emerge in such a scenario?

A comparable perspective resonates in David Cronenberg’s unsettling *Crimes of the Future* (2022), where body art and biotechnology intertwine in a grotesque satire of uncontrolled mutation and an attempt to adapt to a radically transformed environment. The film does not offer linear predictions but evokes contemporary dilemmas tied to pollution and biological manipulation, showing how the body itself becomes both stage and medium of an art suspended between survival and the reinvention of identity. More broadly, bioart takes shape as a speculative practice: it not only critically reflects on ecological and technological crises but also stages visionary experiments, generating spaces of experience that oscillate between the uncanny and the poetic.

The aim of this chapter, therefore, is to explore how bioart, through provocative and transgressive practices, can activate new ecological imaginaries and delineate radical futures already unfolding in the present. Through the analysis of emblematic case studies—ranging from Mary Maggic’s feral citizenships to the post-digestive dinners of Koehne, Zuo, and Jiabao Li; from Adam Zaretsky’s transgenic zoologies to Zheng Bo’s erotic ecologies; from Maja Smrekar’s molecular colonisations to the corporeal fusions of Stelarc and Nina Sellars—this contribution shows how bioart renders the “living future” both perceptible and shareable, transforming it into a fragile yet radical experience capable of opening unprecedented ecological imaginaries.

From Body Laboratories to Post-Human Rituals

To understand how the “living future” manifests itself through artistic practices, it is useful to focus on a series of emblematic works that exemplify its speculative trajectories. The following cases are not presented as mere examples but as nodes within a discourse where contamination, nourishment, transgenesis, phytopolitics, molecular capitalism, and corporeal fusion are explored through both aesthetic and political lenses. The chronological order adopted here makes it possible to read these works as stages in a trajectory that, since the early 2000s, has progressively shaped radical imaginaries of the living within the field of bioart.

Adam Zaretsky:

Transgenic Zoology and Bio-Capitalist Performativity

Adam Zaretsky stages, with irony and unease, the human body as laboratory, scene, and subject of biotech experimentation. In *The Workhorse Zoo* (2002), Zaretsky lived for one week inside a cleanroom alongside numerous laboratory organisms: bacteria (*E. coli*), yeast, worms, flies, fish, frogs, mice, and plants (Zaretsky n.d.). The installation presented interactive microenvironments designed to encourage multispecies interactions and hybrid relationships. Public tasting events were also included, during which frogs, fish, and mice were cooked—sometimes fried—and served as an integral part of the performative ritual. The project destabilises the boundaries between “laboratory animal”, “food”, and “companion”, opening a debate on research practices and on the spectacular responsibilities of living art.

In 2010, Zaretsky performed an additional provocative gesture by releasing groups of genetically modified GloFish® into the waters of the Gulf of Mexico. This act was accompanied by a manifesto celebrating the chaos of transgenic species in the wild and claiming a mutant, free-capitalist citizenship in resonance with global environmental crises. The action highlighted the tension between scientific control and biological unpredictability, positioning artistic intervention as a political-ecological gesture.

In these projects, provocation is not an end in itself but a strategy to destabilise the dominant conceptions of life, subjectivity, and scientific authority. Zaretsky activates an aesthetics of disorder, transforming hybridisation, contamination, and mutation into critical tools that demand an ethical reflection on science, life, and consumption from the audience. His practices contest domesticated rationality and suggest that biological instability might constitute an underground force capable of disarticulating narratives of control and purity.

Image 1.

Adam Zaretsky,
*The Workhorse
Zoo*, 2002. Detail
of the work.
Photo credits:
Adam Zaretsky.



Zaretsky's reflections on transgenic hybridisation and the complicity between science, consumption, and life seem to pave the way for an even more extreme inquiry: with Stelarc and Nina Sellars, the body itself becomes a radical laboratory, a site of fusion and post-human redefinition.

Stelarc and Nina Sellars:

The Fusion of the Posthuman Body

Blender (2005) by Stelarc and Nina Sellars is an installation that pushes the theme of biological contamination and the redefinition of bodily boundaries to the extreme (Stelarc n.d.). In this project, samples of subcutaneous fat, connective tissue, peripheral nerves, blood, and other biological elements, collected from both artists, were mechanically blended inside a transparent container, producing a shared biological suspension.

The work thus becomes a dispositif in which fragments of individual bodies lose their original identity to generate a common fluid—a shared body that challenges any notion of purity or integrity. Stelarc, renowned for his performances exploring the obsolescence of the human body, underscores this shift: “It is no longer meaningful to see the body as a site for the psyche or the social, but rather as a structure to be monitored and modified. The body not as a subject but as an object—NOT AS AN OBJECT OF DESIRE BUT AS AN OBJECT FOR DESIGNING.” (Wilson 2012: 78) This statement finds a powerful aesthetic translation in *Blender*: the body becomes laboratory, site of experimentation, and hybrid material open to manipulation and fusion.

The installation invites a rethinking of bodily identity in post-human terms. The fusion of tissues suggests a new ecology of the living, in which the boundaries between self and other, between individual and collective, dissolve. *Blender* stages the possibility of a body no longer singular but plural, contaminated, and shared—a body that, far from being obsolete, opens onto radical scenarios of coexistence and biological reinvention.

From the plural and contaminated body of *Blender*, the perspective shifts towards the molecular dimension: with Maja Smrekar, hybridisation no longer concerns only bodily tissues but also the invisible matter of metabolism, which becomes a tool for critiquing biocapitalism.

Maja Smrekar:

Molecular Capitalism and Artistic Digestion

Maja Smrekar's project *Human Molecular Colonisation Capacity* (Hu.M.C.C. 2012) radically explores the entanglements between industrial biotechnology, capitalism, and the human body (Smrekar n.d.). Drawing from the production processes of the large-scale food industry, Smrekar created a microorganism in which her own genetic code was integrated with that of yeast, generating an organism capable of producing lactic acid. The result was a jar of yogurt in which biological fermentation and artistic narration intertwined, transforming the food into a living device and a testimony to the molecular colonisation of biological life by industrial and biotechnological processes.

Hu.M.C.C. condenses a visceral provocation: the act of consuming the product becomes a metaphor for how capitalism reprograms life itself. The work takes the form of a post-industrial ritual, where the threshold between nourishment and genetic manipulation, between consumption and colonisation, emerges in an unsettling way. The audience, invited to consume the yogurt, participates in a performative gesture that collapses the distance between producer, product, and act of ingestion, tracing a thin line between corporeality and biopolitics.

This production embodies the dynamics of the “living future”: a present in which biological existence is colonised at the molecular level, and the act of consumption itself becomes a critical performance. In doing so, Smrekar disrupts the division between artistic object and biological function: the work manifests as an organism in action, an aesthetic and biopolitical gesture of both coercion and liberation.

From the molecular digestion orchestrated by Smrekar, the gaze shifts towards the vegetal world: with Zheng Bo, plants become protagonists of affective and erotic relations, capable of destabilising anthropocentrism and proposing new forms of interspecies intimacy.

Zheng Bo:

Erotic Ecologies and Multispecies Relations

Zheng Bo investigates the interactions between humans and plants through practices that weave together ecology, sexuality, and politics. In the series *Pteridophilia* (2016), ferns become protagonists of affective and sensorial relationships that challenge cultural and moral conventions surrounding sexuality, intimacy, and desire, questioning the very boundaries between the human and the non-human (Zheng n.d.).

The work proposes an “erotic ecology” in which plants are no longer passive entities but active, sensitive subjects. Zheng Bo invites us to reconsider interspecies coexistence by experimenting with alternative modes of interaction that transcend traditional anthropocentrism. The project transforms the vegetal into a site of aesthetic and political reflection, generating unprecedented scenarios of new symbioses across species.

Pteridophilia resonates with the logic of the “living future”: a present in which relationships with biological beings become aesthetic, speculative, and politically charged experiences. The work urges viewers to consider sensuality, affect, and desire as tools for exploring human–non-human relations, transforming contact with plants into a critical and poetic gesture. In this sense, Zheng Bo’s practice functions as a laboratory for rethinking the body, the environment, and interspecies relations, broadening the possibilities of coexistence.

From the vegetal desire evoked by Zheng Bo—an invitation to imagine symbiotic alliances with the non-human—the reflection moves towards the work of Mary Maggic, where hormonal and toxic contamination becomes the material for a feral and post-human citizenship.

Mary Maggic:

From Hormones to Fertility

In 2025, Mary Maggic created *Florestania*, an artistic and curatorial project that explores the possibilities of interspecies citizenship through collaborative practices and recycled objects (Maggic n.d.). The work unfolds as a participatory installation in which collected and repurposed plastic materials are transformed into tree-like sculptures through workshops and collective laboratories. Participants actively contribute to the construction of the trees, shaping leaves and details through injection techniques, thermal modelling, and manual processing of recycled plastics, thereby converting toxic waste into tools of ecological care and shared imagination.

The term *Florestania*, a fusion of “forest” and “citizenship”, embodies the idea of ecological sovereignty beyond human boundaries, suggesting practices of symbiotic alliance between humans, ecosystems, and non-human organisms. Each tree within the installation carries symbolic meanings of resilience, regeneration, and coexistence across species, becoming a vehicle for reflection on ecological interdependence and shared responsibility.

The work takes the form of an immersive experience in which participation, material care, and collective sharing serve as instruments for rethinking

the relationship between environment and society, positioning art as a mediator between imagination, biotechnology, and planetary responsibility.

Florestania represents a paradigmatic example of contemporary bioart that rewrites relations with nature by transforming waste materials into a platform of feral citizenship and ecological experimentation. The work demonstrates how art can activate radical imaginaries of multispecies coexistence, proposing models of symbolic and cultural rewilding that transcend traditional hierarchies between human and non-human.

Image 2.

Mary Maggic,
Florestania, 2025.
Detail of the work.
Photo credits: Mary
Maggic.



From the symbiotic alliance between humans, plants, and recycled materials proposed by *Florestania*, the focus shifts towards practices that explore the direct transformation of the living and of biological and synthetic waste, as exemplified by *Consume Our Consumption* by Koehne, Zuo, and Jiabao Li.

Anya Koehne, Annan Zuo, and Jiabao Li:

Speculative Digestion of the Living

Consume Our Consumption (2025), created by Anya Koehne, Annan Zuo, and Jiabao Li, is a performative installation that invites guests to participate in a satirical dinner. The food served consists of edible plastic and a probiotic pill containing microbes capable of digesting plastic materials, derived from worms of the species *Zophobas morio*. Presented as a “climate tasting menu”, the project transforms plastic from toxic, polluting waste into nourishment, generating a provocative reflection on consumption patterns and the rhetoric of greenwashing.

man lernt ja sowas nicht
no one teaches
you these things
future

The strength of this work lies in its ability to overturn conventional categories of waste and sustenance. Through an immersive and sensorial experience, participants are not mere observers but become protagonists in a ritual that merges the act of eating with a political and ecological gesture. The irony of the proposal, combined with the discomfort it produces, challenges the relationship between body, environment, and toxic substances, outlining a scenario in which biological adaptation becomes not only possible but necessary.

Consume Our Consumption operates as an ecological satire staging post-human digestion. The project does not simply criticise contemporary overconsumption but materialises it in participatory form, inviting the public to symbolically metabolise plastic. In doing so, it opens a speculative, unsettling, and visionary space where the transformation of the living is simultaneously survival, critique, and invention of new material ecologies.

The work of Koehne, Zuo, and Jiabao Li (Li n.d.) opens up a horizon in which the body and the living no longer reject toxicity but integrate it, transforming it into a critical resource. Digestion thus becomes a collective ritual, an aesthetic gesture, and a political practice, embodying the “living future”: a present in which biological adaptation, innovation, and artistic experimentation generate new material ecologies and interspecies forms.

Image 3.

Anya Koehne,
Annan Zuo & Jiabao
Li, *Consume Our
Consumption*, 2025.
Detail of the work.
Photo credits: Anya
Koehne, Annan Zuo &
Jiabao Li.



Conclusion—Towards Speculative Ecologies of the Living

The trajectory outlined through the case studies highlights how bioart is capable of assuming a role that goes far beyond the symbolic representation of nature. In an era marked by ecological and biopolitical crises, it operates as a laboratory of imagination, a field in which the boundaries between human and non-human, organic and technological, substance and symbol are continuously crossed and redefined.

Mary Maggic's practices demonstrate how molecular contamination and synthetic hormones are not only environmental problems but also devices that redefine identities, bodies, and communities. The speculative dinners of Koehne, Zuo, and Jiabao Li transform the toxicity of plastic into a post-digestive ritual that makes participants protagonists of a disturbing satire of overconsumption. Adam Zaretsky's provocations destabilise the relationship between science, consumption, and animal life, opening scenarios of transgenic zoology and mutant citizenship. Zheng Bo's erotic ecologies compel us to reconsider our relationship with the vegetal, no longer as a mere resource but as an active subject of desire, affectivity, and symbiosis. Maja Smrekar's molecular colonisations, in turn, reveal the dynamics through which capitalism penetrates down to the biological level, transforming consumption into a critical ritual. Finally, the corporeal fusions of Stelarc and Nina Sellars stage the radical hybridisation of tissues, dissolving the boundaries of individuality and imagining plural, contaminated, and shared bodies.

Taken together, these experiences construct an imaginary of the "living future": a temporality that does not await realisation but is already unfolding, inscribed in our bodies, environments, and cultural practices. Bioart, in this sense, goes beyond mere reflection on the present: it strains it, provokes it, and pushes it beyond its visible boundaries.

The works analysed here function as aesthetic provocations, capable of destabilising entrenched categories—the distinction between food and waste, between human and plant, between laboratory and ritual—while generating new forms of knowledge. Experience is not only represented but embodied, made tangible through gestures that involve care, risk, contamination, satire, and performance.

Within this scenario, Feral Labs provide a particularly fertile context: spaces in which artistic research intersects with open, non-disciplinary laboratory practices, where science is not an exclusive authority but a material to be contaminated with critical thought and imagination. Bioart, in dialogue with such spaces, becomes not only testimony to an

era marked by toxicity but also experimentation with new modalities of coexistence and survival.

Thinking the “living future” therefore means accepting the end of reassuring dichotomies. There is no longer a clear boundary between nature and artifice, between body and technology, between pollution and nourishment. What remains is a hybrid, unstable, and radically open field in which art takes shape as a practice of political imagination: a way of rewriting our relations with the living not only on a symbolic level but also on experiential, affective, and corporeal ones.

The open questions—how can biological manipulation be transformed into an ecological gesture, and how might we imagine relational paradigms with living matter?—do not permit definitive answers but instead translate into possible scenarios, alternative narratives, and collective experiments. Bioart does not propose solutions but opens possibilities: it invites us to imagine forms of theoretical and symbolic rewilding that compel us to rethink life as a field of multispecies coexistence.

The “living future”, then, is neither utopia nor dystopia, but a present in becoming: a fragile and radical terrain where art becomes a tool of resistance and invention. It is within this tension—between critique of the present and openness to the possible—that bioart reveals its most disruptive force: that of transforming crisis into laboratory and toxicity into imagination, delineating speculative ecologies for a future already here. From this perspective, the practices examined intertwine with the horizon of Rewilding Cultures, as they experiment with modes of symbolic and cultural rewilding capable of surpassing logics of control and domestication, restoring space to hybrid, feral, and multispecies forms of life. In this way, the contribution of bioart extends beyond the generation of radical imaginaries, becoming part of a collective process that invites us to rethink coexistence as a political, ecological, and creative practice.

Bibliography

- Haraway, D. (2016). *Staying With the Trouble: Making Kin in the Chthulucene*. Duke University Press.
- Li, J. (n.d.). *Jiabao Li*. <https://www.jiabaoli.org>
- Maggic, M. (n.d.). *Maggic*. <https://maggic.ooo>
- Smrekar, M. (n.d.). *Maja Smrekar*. <https://majasmrekar.org>
- Stelarc. (n.d.). *Stelarc*. <http://stelarc.org>
- Wilson, S. (2012). *Art + Science Now: How Scientific Research and Technological Innovation Are Becoming Key to 21st-Century Aesthetics*. Thames & Hudson.
- Zaretsky, A. (n.d.). *Emutagen*. <http://emutagen.com>
- Zheng, B. (n.d.). *Zheng Bo*. <https://zhengbo.org>

Further Reading

- Aloi, G., & McHugh, S. (Eds.). (2021). *Posthumanism in Art and Science: A Reader*. Columbia University Press.
- Berger, E., Mäki-Reinikka, K., O'Reilly, K., & Sederholm, H. (Eds.). (2020). *Art as We Don't Know It*. Aalto University.
- Hauser, J. (Ed.). (2003). *Art Biotech* (P. L. Capucci & F. Torriani, Eds.; Italian ed.). CLUEB.
- Kac, E. (2005). *Telepresence & Bio Art: Networking Humans, Rabbits, & Robots*. University of Michigan Press.
- Kac, E. (2007). *Signs of Life: Bio Art and Beyond*. MIT Press.
- Mitchell, R. E. (2010). *Bioart and the Vitality of Media*. University of Washington Press.
- Savini, M. (2018). *Arte transgenica: La vita è il medium* [Transgenic Art: Life Is the Medium]. Pisa University Press.

II—7

Chelsea Coon

Nebulas, Forms, Forces: Lens-Based Perspectives

Chelsea Coon is an artist and writer whose work focuses on the shifting interconnections of the body, time, and space. She has exhibited and performed extensively in galleries, biennales, and festivals internationally. Her writings on contemporary art, performance, and philosophy have been published in experimental and academic publications, magazines, and journals in the US, the UK, Australia, Hong Kong, and Singapore.

Abstract

The artist's body endures dynamic impacts of space, constructs, and affective forces that can all inform aspects of artistic production. This affective interrelationship is critical to the speculative practice of lens-based art, including photography, video, and performance, because of the elusive, embodied components that contribute to the dynamic experience of the artist captured in the works. This includes insights into the creation process such as motivations and desires that compose the work which is realized with a body. Through the lens of autoethnography, artist Chelsea Coon discusses the experiential impacts of her performance video *grind* (2024) and photography works *nebula push/pull* (2024) and *forms* (2024) to address how the body is, both aesthetically and conceptually, a force that frames and directs, offering different perspectives into the complexities of space, identity, and desire.

Introduction

There is perhaps no stronger instance of understanding the body's reactive nature to forces than when it is put directly in an artistic production context and heightened by its reactions to adapt, shift, and endure. In speculative contexts such as the production of photography, video, performance, and new media the conditions are ideal for these circumstances to intensify; however, the degree to which such shifts manifest cannot be predicted in advance of the process creating the work, and instead, is revealed in the present while the work is being formed. To react in lens-based performance contexts, i.e., respond through action in the present in relation to the affective forces that space, materials, and forms have on the body, is not a neutral experience and therefore affects each body differently; as Henri Bergson argues in his account of creative evolution, in regards to thought and consciousness, select distinctions emerge not as categorical oppositions but as variations—"a difference rather of degree than of kind" (1911: 145).

Spaces that are both part of the performance and external to it are effective in that they can shape the way the body responds, which includes conveying gestures that indicate the dynamic interrelation to the complex, felt aspects that are perhaps difficult to put into words but can be expressed through art differently. Philosopher Sara Ahmed has explained that space "unfolds in the folds of the body" (Ahmed 2006: 9). In the artistic context of production of lens-based work, this is useful for considering interpretations through the lens of new media art and the perspective that can indicate the degrees of proximity, intimacy, and potential that exist in

the reciprocal, affective dynamics of art. Through an artistic perspective, both the body-in-performance and the body-in-photography pose an interesting first-person perspective through which to consider aspects of critical steps in the conception and production phases of the work. Lens-based extensions in digital and analogue film methods are instances where different aspects of photography as a medium and its subject, which in the case studies of this chapter comprise of the overtly present body and/or the seemingly absent body, can be explored. For instance, this can take form through the body being a direct subject of the photograph, or in another context where the body is present through its suggested absence in the photograph as a literal subject but is still implied through its presence as the one who captures the image. This can complicate the performative aspects of the body in the work, and such choices are integral to conceptual and compositional aspects of works contingent on the artist's intent, presence and form. It is through a speculative autoethnography and felt experience in lens-based art that witnessing critical facets of the theoretical underpinnings of the works and insights into the artist's desires is possible.

This chapter draws on experiential insights of the production of select artworks to speak to the expansive possibilities in the artistic research insights; first-hand narratives position a better understanding of the experiential impacts of new media practices of lens-based works in performance, photography, and video on the artist's body. This includes how first-hand knowledge consists of in-the-moment transformations that are critical for understanding the autoethnographic potentials and possibilities of the work, including conceptual underpinnings. One such example is in the work of interdisciplinary Switzerland-based artist Maya Minder, who has proposed that fungi are useful for rethinking aspects of our considerations of the boundaries of frameworks, categorisations, and even notions of survival (Minder 2025). A proposed aspect that considers rewilding within the case studies of this chapter addresses how it is key that the works' conceptual perspectives and utilisation of weighted symbols, forms, and frames that aim to challenge conceptions and associations with such systems reconsider more deeply the affective, present forces in the desires that drive the production of lens-based works. Several factors are always in play and ever shifting in relation to the orders, i.e., the given circumstances, of space and time of the art. Such possibilities for the effects of forces in lens-based work include impacts on creation, engagement, and co-existence.

Three case studies of visual artworks will provide different perspectives, insights, and information on the complex production space where feelings such as exhaustion and desire co-exist to propel the artwork from an idea into form. *grind* (2024) provides first-hand accounts of the artist taking on the position of audience to re-witness the video performance played on the monitor in the installation context of a gallery. The photographic works *nebula push/pull* (2024) and *forms* (2024) each speak to different aspects of the body, including its representation and presence, spanning conceptually to address the suggestion of a seemingly absent body through an interplay of elements.

Breaking Within the Body While Performing a Deconstruction: *grind* (2024)

The body in performance, photography, new media, and lens-based extensions, through a speculative autoethnographic approach, positions the importance of experiences and perceptual shifts in art. Rewilding as a concept and practice is important for its speculative possibilities, which in the context of visual art differ due to a variety of possibilities and the complexities of desire. This includes the effects of time on space that can inspire interventions and different ways of thinking, creating, and doing. Art practices that embrace inter- and multidisciplinary processes, and forms, position different ways to see, understand, and feel through the world, often in response to conditions that inform spaces. This is particularly important in the consideration of the development and production of the video performance *grind*, developed and premiered at Meno Parkas Gallery as part of the exhibition *Heavy Metal* (Coon 2024d), of which I explain: “The bedframe is a particularly loaded symbol for sex and power” (Coon 2024a).

The 1 hour and 19-minute duration of the video was dictated by the time the performance took. The performance framework utilised 6 handheld hacksaws that were evenly spaced out alongside the bedframe as tools to make clean cuts which would, in time, break the frame apart. While there were 6 saws, and 6 cuts were attempted to the frame, only 5 complete cuts were achieved. The video depicts myself, the artist, enduring what seems like a fraught, if not impossible, task of deconstructing something massive with tools that are more like toys than something functional; i.e., the design was set up to be difficult and challenging so that the audience could contemplate why it is so difficult to undertake a physical deconstruction of a bedframe, and what this

might open critically as a contemplation on the forms of experience that bedframes can and do have, but also, the potentials of rewilding through considerations beyond this specific example of a structure and symbol.

Here is an instance of a performance score I have written when I observed my video playback on a monitor in the gallery. I watched the piece and recorded insights on formal qualities, including image, gestures, expressions, forms, and emotions of the work *grind* as the “looping of the video and its sonic reverberations of the cutting, scratching, grating, and exasperated breathing produced by the body” (Coon 2024b). In the following text, I refer to myself as the artist instead of by name: “The video opens with a scene of a white steel bedframe on a concrete floor against a white wall. Moments later, the artist enters the frame from the right. She wears an acidic green-yellow slip dress, black nylons, black combat boots, and her wavy, dark blonde, highlighted hair down, which falls below her shoulders. She steps over the white metal frame and stands behind its reinforcement crossbar as she stares directly into the camera. She extends one arm outward to the left and her other arm outward to the right, with palms facing the camera. She then picks up a hacksaw and holds it in front of her body. She kneels on the concrete floor and begins to saw a line through the reinforcement crossbar. She is struggling. The weight of the material is challenging.” (Coon 2024b)

Cosmologies and Transformations: *nebula push/pull* (2024)

In multidisciplinary visual art production, the frame is conceptually an ever-present force that can include several factors such as the literal site of the work which can frame the concept and intention, and/or, in some instances, the perimeter of the edges of the work itself as seen in photographs, among others. It can hint at a tension from the onset of an artwork, which each artist must navigate implicitly and/or explicitly in accordance with their own relation to such frames. *nebula push/pull* (Coon 2024e) was a large-scale photography installation consisting of hundreds of digital semigloss photographic prints that depicted a distanced perspective of the Orion Nebula taken by the artist on a telescope. The photographs were predominantly black, with small points of white indicating light emitted from the brightest stars situated within it. Conceptually, the pixelated representation of a celestial body as well as the speculative aspects of the desire to understand more about this through the bodily interactions with the work produced a tension. This was evidenced through the saliva traces on the prints which resulted from placing my mouth on the photographs

and pressing my tongue into them which allowed my saliva to drip and spread. Other body traces included fingerprints, skin oils, and other impressions sustained from pushing, pressing on, feeling and touching the work. Repeatedly, these actions were performed all the while knowing that both my mouth and my hands had the potential to, in time, disintegrate the integrity of the prints.

In select parts of the installation, the colour on the prints had already eroded, which had manifested as forms of discoloration in the shape of the licking or touching impressions—these were, in part, autoethnographic marks which registered the affective experience from the production as a “desire to better understand the body’s dynamic relationship to space” (Coon 2024c). Perception can be flawed, and experientially, in relation to this act of repetition, be it in the printing or placement of pieces that comprise a large photographic project, there are other forms of understanding possible through such artistic processes. Feelings and memories often consist of information that helps us reach conclusions, and in this instance, I wanted these to be contingent on the relationship of the materiality of photography and the concept that, often, we are unable to grasp certain aspects of space for a variety of reasons. When considering the potentials of perception as expansive, it is important that components of data, such as feelings and memories, can shape and direct compositional conclusions.

Rewilding, or to rewild, when considered in the context of performative lens-based art, could suggest a rethinking of the current trajectory of engagement and propose a considered, marked shift which could include “a return” (Merriam-Webster n.d.). Specifically, in lens-based art, such speculative and practical rethinking of relationships is useful, such as the idea of rewilding which often involves a process of “letting nature take the lead” (World Wide Fund for Nature UK 2023) and how this can be essential to enduring changes in that it proposes an evolving, ever-shifting force of nature as integral (WWF-UK 2023). The photographic work *nebula push/pull* was an expansive, unframed constellation of individual prints of the same image, a short telescopic exposure of the Orion Nebula, installed in an excessive accumulation through a laborious, meticulous process, and the proposal of other possibilities. A critical conceptual aspect was that its design to be a shifting work, i.e., it would change the visual presentation through a reordering of parts according to the factors of time and chance manifested through installation aspects where select photographs would incrementally fall to the floor. This was due to the

limits of tape as a material in terms of how long it can hold the weight of the image, as it is contingent on the factors of time and energy.

This project was labour-intensive and comprised hundreds of parts that each had to be affixed to the wall with a minimum of four hand-cut and pressed adhesive pieces. This installation aspect was an important factor conceptually, as it spoke to the desire to understand forces and spaces that we are unable to know fully. In that contradiction, we face limits of the body, and this is where reflection and even imagination become useful tools to speculate on the interconnective facets of the body and cosmological manifestations in visual art, as a way to see or feel the concept differently. During the exhibition, the tape used to adhere the photographs to the wall became unfixed; they lifted from the adhesive application points, and several fell to the floor. This shift in the installation, i.e., that it was a work that evolves, changes, and even transforms over the duration of the exhibition, was important in that it provided a different viewing experience for each visitor in the space but also spoke to the precarious nature of forces of space that defy our ability to know, concretely grasp, or control.

A Multiplicity of Perspectives on the Frame: *forms* (2024)

The presence of forms, frames, and architectures forces the body to act in gestural responses to what it has perceived, and this can manifest in a myriad of expressions ranging from overtly active to seemingly passive. In the context of speculative lens-based production of performance to camera, as in the instance of my work *forms* (2024), there are several design elements including numerous frames and forms to which a body must respond to, including the factors of flesh against the weighted material of metal. This photography series, developed as part of the multidisciplinary work *grind*, was premiered as an installation at Meno Parkas Gallery for the exhibition Heavy Metal (Coon 2024f). *forms* is composed of 40 instax Fujifilm mini contact sheet photographic prints that are aesthetically minimal, have a muted colour palette, and are reinforced within the boundary of the black contact sheet that comprises of the perimeter that frames each of the individual prints. This accumulative work is installed as a grid comprising a length of four and a width of ten prints. Each black frame visually distinguishes each photograph as an important moment for observing both the differences and similarities within the gestural reactions that comprise the images of this piece.

There are several frames in *forms*, including the frame of the body, the frame of steel, and the frame of the photograph. Each of the images

depicts my body holding large pieces of white metal in different positions that, in turn, occupy different surface spaces within the frame of the composition of the photographs. These large white metal forms were the four sculptures created when the bedframe was sawn apart in the performance discussed above, *grind*. The ten photographs in each of the four rows of this work are ten different studies of each sculpture. In these compositions, I am holding, propping, balancing, straining, thinking, feeling, looking, bending, forming, controlling, submitting, enduring, and breathing.

Formally, the photographs depict both soft and hard forms: the body's frame, consisting of skin and bones, in contrast to the metal frame. The most essential details of the subject of my body and the object of the metal sculptures are revealed by the light. There is also a stark contrast between what is sharp and what is soft: the polished surface and the jagged, raw edges of the steel frame next to the softness of the exposed flesh on my neck, chest, arms, and face. The light is strong and makes for high exposures, where the bright light not only exposes but, in some instances, also hides, conceals, and blurs information. The light serves to illuminate, i.e., to make something clear, which in this instance is the action and relationship between the body and form, but also to soften the distinct aesthetics of the images captured within each frame.

The photographs speak to the mechanics of a speculative labour; a practice whose factors are equal parts clear and elusive. The metal would divide the photograph vertically, horizontally, or as was more often the case, provide an aesthetic rupture in the composition, defining its presence as a foregrounded element. The body occupied the middle ground against the background of a white gallery wall. The production of these photographs involved constant repositioning of my body in relation to the large pieces of white metal, which were often difficult to hold because they were heavy and had sharp edges from where I had made cuts with metal handsaws. Therefore, I was responsively reacting to the individual metal pieces and was always careful to avoid getting cut; I had to keep my hands away from the jagged edges. The process involved me continuously moving my body and changing the position of the metal piece I was holding as a prop—up, down, sideways, and diagonally. I would flip the form to reposition it. In time, the image would appear, with its differences and similarities to the 40 photographs of *forms*.

Conclusion

Different insights into meaning and perspective can only be gained through a reflection on the experience of making through the production of the performance and photography works discussed above. This text has taken an experiential approach to address the expansive possibility in artistic production and thereby better understand the experiential impacts of performance and photography on the body of the artist, including the way that this first-hand knowledge consists of perspective shifts and transformations, which are critical for understanding the autoethnographic possibilities of the artwork, such as its links that conceptually include its dynamic underpinnings. In the context of lens-based performance art, video, and photography, rewilding can meaningfully complicate works and challenge what is fixed or set in place. The notion of hope is important in speculative lens-based art production, as it focuses on imagination and other possibilities, including perspectives of affective experiences that comprise existence.

Bibliography

- Ahmed, S. (2006). *Queer Phenomenology: Orientations, Objects, Others*. Duke University Press.
- Bergson, H. (1911). The Divergent Directions of the Evolution of Life: Torpor, Intelligence, Instinct (A. Mitchell, Trans.). In *Creative Evolution* (pp. 98–186). Henry Holt and Company. https://brocku.ca/MeadProject/Bergson/Bergson_1911a/Bergson_1911_02.html
- Coon, C. (2024a). *Heavy Metal* [Exhibition text]. Meno Parkas Gallery, Kaunas, Lithuania.
- Coon, C. (2024b). *Heavy Metal* [Exhibition Post-production Notes]. Artist's Archive. Los Angeles, United States.
- Coon, C. (2024c) *The Probability of All Possible States of the System* [Exhibition text]. Arka Gallery, Vilnius, Lithuania.
- Coon, C. (2024d). *grind* [Performance video]. Performance to video, digital colour, sound, 1 hr 19 min (loop). Meno Parkas Gallery, Kaunas, Lithuania.
- Coon, C. (2024e). *nebula push/pull* [Digital colour archival prints on semigloss paper, adhesive, saliva, body impressions; 711 × 1.1 × 295 cm].
- Coon, C. (2024f). *forms* [Installation of 40 prints; Instax film colour archival contact-sheet photographic prints; 38.7 × 69 cm].
- Merriam-Webster. (n.d.). Rewilding. In *Merriam-Webster.com dictionary*. <https://www.merriam-webster.com/dictionary/rewilding>
- Minder, M. (2025). *Fungal Cosmology Investigations in Patagonia: "Art-Science Research Is an Invention of Modernity"*. Makery. <https://www.makery.info/en/2024/08/27/cosmologie-fongique-en-patagonie-la-recherche-art-science-est-une-invention-de-la-modernite/>
- World Wide Fund for Nature UK. (2023). *Rewilding*. <https://www.wwf.org.uk/learn/rewilding>

Further reading

- Chouliara, C. (2025). *ArtLabo Retreat, From Blue to Green*. Makery. <https://www.makery.info/en/2025/08/12/english-artlabo-retreat-from-blue-to-green/>
- Halberstam, J. (2020). *Wild Things: The Disorder of Desire*. Duke University Press.
- Rewilding Cultures. (n.d.). *Feral Lab Partners*. <https://rewildingcultures.net/ferallabs-archive/partners/#list-item-6>
- Sternagel, J. (2023). *Ethics of Alterity: Aesthetics of Existence*. Rowman & Littlefield, Bloomsbury.
- Vishmidt, M. (2018). *Speculation as a Mode of Production: Forms of Value Subjectivity in Art and Capital*. Brill.
- Walsh, L. (2025). *ArtLabo Retreat: A Journey to the End of the World*. Makery. <https://www.makery.info/en/2025/07/25/english-artlabo-retreat-a-journey-to-the-end-of-the-world/>

II—8

WhiteFeather Hunter

Wet Witches and Rewilded Biotech: Bastard Protocols for How to Grow a Homunculus (Badly)

Dr WhiteFeather Hunter is a researcher and bioartist, recently awarded an SSHRC Postdoctoral Research Fellowship at Simon Fraser University. Her doctoral thesis, *The Witch in the Lab Coat* (SymbioticA, The University of Western Australia), examined feminist biotechnological practices through tissue engineering with menstrual fluid and DIY lab tools. Her project *Sentient Clit*, featuring 3D-bioprinted clitorises embedded with neuronal cells, was nominated for the 2024 Ars Electronica S+T+ARTS Prize.

Abstract

This chapter discusses the *feral turn* through a feminist technoscientific methodology that reclaims the unruly, the embodied, and the affective within biotechnological practice. When positioned adjacent to ruderal witchcraft, the feral turn reorients knowledge-making towards the wet, disruptive interior ecologies of the body: menstrual blood, stem cells, sperm, saliva, and microbial agents that become the materials of resistance and regenerative magic. Through a series of interlinked case studies—artist residencies at the Museum of Witchcraft and Magic (UK), Ionian University (Greece), and Cultivamos Cultura (Portugal)—I trace the lineage of emergent bastard protocols: ritualised, queer, illegitimate methods that transgress sterile logics of institutional biotech. Rather than neutral backdrops, these residencies also served as co-agents—juxtaposing landscapes, collaborators, and institutional ecologies that structurally shaped my experiments. From conjuring a queer homunculoid in a horseshit-lined hole in a garden box, to differentiating wild-type endometrial stem cells into neuronal forms, this work has operated in the cracks of legitimacy to cultivate feral futures through feminist material spirituality. Countering corporatised notions of “rewilding” from remote tundras, my practice rewilds from within: promoting participatory rituals and epistemic leakages to reanimate the “lab” with deeply personal, witchy wetness.

Image 1.
Homuncularium
Basiliscus, video
still. Photo credits:
WhiteFeather Hunter,
2024.



Introduction: Turning TechnoFeral

I begin this chapter by introducing the concept of the *feral turn*, borrowing from other onto-epistemological turns, such as the material turn in feminist technoscience¹. Where these previous turns positioned “matter” within philosophical discourse, the feral turn repositions *theory within matter*—within wildish ways of being and mucking about in a wet, leaky in-between—where theory is inseparable from the material/ecologies of bodies that enact it. Anna Tsing et al. have described the feral in terms of “ecologies that have been encouraged by human-built infrastructures, but which have developed and spread beyond human control” (Tsing, Deger, Keleman Saxena, & Zhou 2021). Following this logic, feral *practices*, as I will discuss, facilitate a conceptual and methodological shift towards unruly modes of knowing/making that reclaim an impure, uncontrolled sense of the material self within technoscientific experimentation; here, ferality counters the threat of stasis/stagnation that would stymie psychic and collective individuation². To provide concrete examples of this, I will demonstrate how the feral turn is epitomised by bio-art and bio-*craft* (as I practice it) that deviates from institutionalised systems of canonised and even “innovative” compartmentalised knowledge, to root into deviant, fleshly interiorities: fluids, tissues, hormonal cycles, and cellular processes as active sites for creating resistance and regeneration.

Yvonne Billimore writes in the introduction to *Feral Labs Node Book #2: Feralities* that “[o]ften bound with negative associations and oppressive dimensions, the term feral has long been used to demonise and exclude those deemed untameable, those who step out of line, human and more-than-human. Yet, more and more of us humans acknowledge our inseparability with ferality and embrace it as a positionality: a refusal

- 1 The material turn has been a deeply influential philosophical movement for my work, brought forward through a wave of feminist scholarship such as that by Barad (Barad 2003; 2007), Alaimo and Hekman (Alaimo & Hekman 2008), Bennett (Bennett 2010), and others. In line with Barad’s critique of “turns” (Barad 2003), I present the “feral turn” as a refusal to abstract materiality through another discursive detour. Instead, it grounds theory in practice and in wet, unstable biological substrates, such as menstrual blood, stem cells, neuronal differentiation, and DIY biofabrication. Where Barad asks us to consider how matter comes to matter, the feral turn answers: through cycles, fluids, rituals, and bastard protocols enacted in bodies—not only theorised but co-performed with them.
- 2 As I understand it, reading through Stiegler’s explanation of the conditions whereby which new philosophies necessarily arise, to socially re-organise in ways that question existing collective decision-making (Stiegler 2018: 8). Further to this, I look to analyses of Gilbert Simondon (Simondon 2020) in expanding the notions of philosophy to connect this concept to an interlinked sense of the sublime within oneself and one’s social timeline (or epoch) (Bluemink 2021). Both fall under the precepts of what I consider to be a philosophy of feminist (bio)political, witchy “meaning-making” within my feral practice.

to be tamed” (Billimore 2024: 7). To build on this reclamation of ferality as a mode of defiance in the face of homogeneity and demonisation, I position the feral turn in feminist technoscience adjacent to the concept of *ruderal witchcraft*, articulated by Margaretha Haughwout and Oliver Kellhammer (Haughwout & Kellhammer 2025). In *A Ruderal Witchcraft Manifesto*, Haughwout and Kellhammer locate resistance, ferality, resilience, and magic in disturbed or marginal landscapes—particularly those characterised by unmitigated, ambivalent weediness. While ruderal witchcraft tends to the power of mutability of external ecologies, the feral turn in feminist technoscience applies these logics inward towards the visceral, leaky, insistent, and sometimes volatile terrain of the body.

Ferality, as it relates to witchcraft in my work, reframes intuition and interoception as wildish sites of speculative practice, animated through ritual, co-creative protocols, and bastardised science. Thus, to turn feral is to rewild method by generating knowledge that is deeply affective, materially unstable, and interchangeably situated, especially in response to corporatised biotechnology. I engage biotech and its proto-cols as spellwork to claim epistemic autonomy, through menstrual blood, mucus, stem cells, saliva, sperm, and other traditional *materia magica*. This positioning also aligns with what has been described as the “material spiritual” (Puig de la Bellacasa 2016), following the legacy of influential American sociologist and science studies scholar Susan Leigh Star. Firstly, Star offered a scaffold for reclaiming material agency while confronting political structures embedded in lab-based knowledge. She explained how such work operates within *ecologies of knowledge*, and “by ecological we mean refusing social/natural or social/technical dichotomies”; specifically, by asking material questions, such as “What is the material basis for practice? Who owns the means for knowledge production?”, while also horizontalising science itself as “just something that people do together”. Working in this way “challenges the moral order of science and technology making—and in turn places us in a complex, often tense moral position” (Star 2016: 14–15). Furthermore, Star has referenced Bruno Latour and Steve Woolgar to analyse the “progressive stripping away of contextual information about [scientific] production, with the end result being a fact bare of its own biographical information” (Star 2016: 16). She discusses this as ethnomethodological act-making, a process which came under critical scrutiny following the publication of Latour and Woolgar’s book *Laboratory Life: The Construction of Scientific Facts* (1986). This ethnomethodological act-making is precisely the material spiritual strategy

(and philosophy) I have come to subversively employ with my laboratory video performance works, towards feminist aims.

Feral feminist technoscience (which I have previously named technofeminist witchcraft) is a mode of inquiry that merges critical legacies of feminist technoscience with interpersonal aspects of creativity to refuse reductionist institutional logics and compartmentalised, depersonalised/sanitised methods³. Where mainstream technoscience stipulates objectivity, sterility/distance, and control, feral feminist technoscience deliberately embraces subjectivity and mess. It binds knowing to empiricism through unfolding, lived experiences, finding catalysis through bleeding and ejaculating bodies, hormonally shifting states, and rogue lab work. In this, meaning is constructed and deliberately *prioritised* through the performance of feminist critique (as ritual), along with the technoscientific and artistic artefacts that arise from such experimentation. Feral, in this framing, names the unruly body within the spaces it inhabits, an intra-ferality. Similarly to weeds that push through the cracks of concrete walkways that have been ruptured by tree roots, so too do certain cultural sites allow conditions for unlicensed growth within institutional frameworks. Artist residencies often occupy such fertile breaks: half-inside, half-outside the institutional apparatus, recognised but not entirely controlled. These are boundary spaces, ruderal spaces, spaces that witches are known to frequent, as Haughwout and Kellhammer have described. Resonant with ruderal witchcraft, actions within and upon these sites can be used to *remediate* the knowledge silos that choke research within formalised fields of specialisation. Through the permissive ambiguity of an artist residency, one can enact experiments that would be far more difficult in fully surveilled institutional laboratories. Protocols can be jockeyed and bastardised, disciplines entangled, and in the case of my examples here, failures left to transform through decomposition.

To enter a residency with a feral orientation is to treat it as a site of rapid germination: to take up its thinly eked-out resources and persist in creative disruption, relatively ungoverned. In my practice, such artist residencies have functioned as generative, materially complex laboratories,

- 3 Donna Haraway has long argued for situated knowledges, or ways of producing meaning that are accountable to the bodies, ecologies, and histories from which they arise. Rosi Braidotti's posthuman feminism insists on an ethics of becoming, a recognition that subjectivity is never stable but always in motion, porous to its relations. Anna Tsing understands that survival takes place in the ruins, in the "arts of noticing" life among disturbance. My practice joins these trajectories, specifically through frameworks of witchcraft by insisting on the uterus as a site of technoscientific, co-creative, and magical speculation.

in a broad sense. These zones become sites of biotechnological intervention and deep engagement in community co-creation. In this chapter, I present three case studies of such residency spaces, where ferality, as witchery and feminist tech disruption, was encouraged to flourish. Two of the three residencies are within the Feral Labs network.

From Field to Flask—Seed, Spell, and Stem Cell

My feral trajectory unfolded across a continuum of short-term projects that map a movement from landscape as laboratory to biolab as ritual terrain, with each residency site catalysing different forms of methodological divergence. The origin point was the Museum of Witchcraft and Magic in Boscastle (UK), where I engaged the smurry crags of Cornwall as a generative, occult site for bibliographic and artistic inquiry. Here, bastard protocols were first conjured through a ritual using improvised instruments and donor bodily materials, to disrupt lineages of sterile lab work by embedding it in shit, flowers, and folklore (Image 1). This phase was followed by the *TTTlabs BioFeral.BeachCamp* in Crete, which served as an interstitial zone that bridged landscape and laboratory. This 10-day residency encouraged experimental co-creation with other artists and researchers, where I was again able to coalesce ritual and rogue protocol through choreographed performance and video production, using donor body materials towards (possible, unconfirmed) human in vitro fertilisation. Finally, through a three-month residency with *Cultivamos Cultura*, co-hosted by the Graça Lab at the Gulbenkian Institute for Molecular Medicine (University of Lisbon), I advanced this trajectory into the domain of wetlab experimentation using primary-sourced, wild-type cells from my own body. Here, the feral turn became literal: my menstrual cells and accompanying vaginal microbiota entered the petri dish as both clinical samples and co-creative agents in standard tissue culture experiments, towards speculative aims. Across this continuum, the residencies enacted a *rewilding* of technoscience itself, where the site of knowledge-making wavered between canonical lab and haunted field.

Within my interconnected activities, the residency structure served as co-agent in my hacked methodologies. Each site offered a unique ecology through which to enact protocols that meandered around the rules of traditional biotech, regenerative medicine, and taboo. For example, the ritual crafting of bastardised homunculi using my menstrual fluid with donor sperm bled into the transformation of menstrual stem cells into neuronal types in a speculative line of sexed organogenesis, the details of which will

follow. Such materials and methods further fostered the build of a new biotech apparatus through a later, additional artist residency ... though that is a story for another chapter. Through process, place, and participant agency, the residencies became hotbeds of epistemic leakage; they enabled outgrowth beyond scientific boundaries as well as reclamation of bodily autonomy through improvised technoscientific space—from the prim garden box of a medieval village museum, to an open-air art annex, to infiltrated lab bench, and beyond. I propose that in this way, artist residencies can be conceived of as feral co-producers, as zones of fugitive research-creation that upends bureaucracies: living, weedy/seedy (ruderal) environments where distributed agency, human and more-than-human, cellular and symbolic, unsettles and rewrites the confining logic of the institutional lab.

Case Study I: Conjuring the Bastard—The Museum of Witchcraft and Magic (UK)

This case study discusses the site where my bastard protocols originated, through a queered concoction for artificial life. This site, not a laboratory in the conventional sense, provided the initial conceptual and material ground for initiating a feminist technoscientific method that would later become central to my recipe. I first discovered the proto-being called *homunculus* within the archival records and occult library of the Museum of Witchcraft and Magic during an artist residency in late 2022. I returned in 2024 to culminate that research into an exhibition around the theme of occult blood⁴. Numerous works in the collection of the museum, including arcane manuscripts and contemporary artworks, referenced this synthetic human-in-a-bottle. The homunculus, a curious alchemical experiment, represents one of the foundational fantasies of patriarchal science, rooted in concepts of “preformation”: the belief that sperm contains a miniature man, already formed and ready to slime into being like a soaked chia seed.

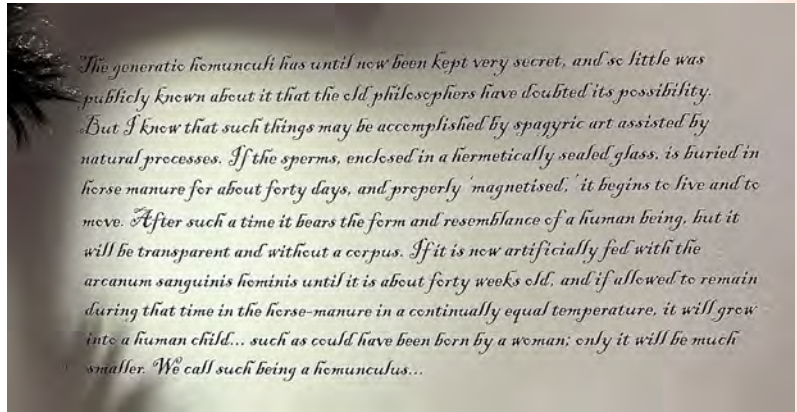
This proto-scientific myth envisions the creation of human life without need for a uterus, ovum, or any participation of a reproductive cis-woman at all—just sperm incubated in glass, placed inside a horse’s “belly” and nourished with a secret male blood nutrient: *arcanum sanguinis hominim* (Image 2). Essentially, the homunculus presents human conception sterilised of female flesh, blood and, importantly, pleasure, while under technomasculinist control. The recipe, developed by early modern alchemist Paracelsus, set a chilling precedent in its erasure of the maternal and

4 This full season exhibition ran from April to November 2024. For more, see: Hunter 2025.

resultant abuses of the more-than-human. From Paracelsus' rapey equine incubator to modern biotech's continued preference for bovine, equine, or human male blood in tissue culture protocols, this gynophobic lineage persists—a legacy of technological supersession of the unruly and often uncooperative, cyclical female body. This is what my work means to rupture in a return to wildish ways: utilising stigmatised and self-sourced (“wild-type”) blood and cells, as well as implementing affect, consent, queer pleasure, and multiplicity.

Image 2.

Quoted wall text:
Paracelsian Homunculus
protocol, installed as
part of the exhibition
*Arcanum Sanguinis:
Occult Blood /
WhiteFeather Hunter*
at the Museum of
Witchcraft and
Magic. Photo credits:
WhiteFeather Hunter,
2024.



During my residency, I discovered a specific, anomalous document within the museum's archive: a hand-drawn illustration from the Richel Collection, inscribed with text detailing what seemed to be a creative variation or folk adaptation of the Paracelsian homunculus procedure (Image 3). Unlike the canonical version that relied on sperm, this version substituted menstrual blood towards more feral results: producing a medieval *basilisk*—a noxious, hybrid creature comprised primarily of cock and snake. I treated this document as an operational script to be reactivated through my own contemporary practice.

Image 3.

"Le Basilic," Basilisk,
Basiliscus, creator unknown
 (either J. H. W. Eldermans
 or Bob Richel), part of the
 Richel collection, n. d., ink
 on onionskin paper. Artifact
 no. R/6/782 in the collection
 of the Museum. Framed
 and exhibited as part of
 the exhibition *Arcanum*
Sanguinis: Occult Blood
/ WhiteFeather Hunter at
 the Museum of Witchcraft
 and Magic. Photo credits:
 WhiteFeather Hunter, 2024.



The bastard protocol I developed from this illustration centred my own uterus as both a biologically and mythically dynamic zone, whose shed regenerative capacities provided a material and metaphorical base for in vitro monster conjuration. By engaging the document through an iterative process of interpretation, assemblage, and material testing, my methodology shifted from researcher-as-observer to practitioner-as-participant. The Museum's own framing of knowledge contributed to this methodological play: its objects are categorised by function as well as by magical and cultural significance. This blended positioning, which placed importance on both utility and meaning, opened space to engage the archive as a co-agent in activating my experiment.

My protocol was as follows: Mix an illegitimate scientist (me) with an additional three queer witches—all gay men—to surreptitiously concoct an in vitro beast. This protocol is non-monogamous; it cannot be faithfully reproduced but only shift with each cycle, body, and configuration of season, sky, or ecology. Results are not guaranteed. Promiscuity is encouraged.

I gathered my intimate collective of witches during a lunar eclipse, when all things dastardly or mutant or socially cataclysmic might come to pass; this occasion was used to ritually transgress norms of reproduction

perpetuated in Western technoscience (*and* in apotropaic rituals historically used during eclipses to waylay birth defects). The materials we carefully gathered from ourselves are all seemingly non-reproducing and socially rejected: menstrual blood, signifying a so-called “failure” to impregnate, with spermatozoa from bodies not interested in the inside of a vagina nor convergence with uterine walls. Such fluids are typically deemed waste; read: tainted surplus and perverse ooze, never meant to carry forward a patriarchal lineage. However, under the obscurity of our dark celestial event, they became potent together. As Haughwout and Kellhammer explain, “[t]he wastelands are a power that conjure witches into being” (Haughwout & Kellhammer 2025: 423). Our shady materials became portentous, potentially able to call forth a creature even more profane than

Images 4, 5.
Homuncularium
Basiliscus, video
stills. Photo credits:
WhiteFeather Hunter,
2024.



that in the original recipe—a feral *humanimal* to confound Paracelsus’ androcentric creation. What might emerge was not entirely the point, though we did of course fantasise its possibilities.

After ceremonious in-cantation of our mucousy fluids together into a curved, glass wombspace, we ensconced the carboy in a pit filled with fresh manure acquired from an equestrian neighbour. Our mix would incubate in its fecal cradle for a festering 40 gestational weeks—hidden out of sight, or occulted, within a deceptively quaint country garden box (Images 4, 5). The polite English flora (along with arrhythmogenic plants such as aconite, or “monk’s hood”) became camouflage, hiding esoteric-artistic ferment beneath the protection of heart-stopping, decorative distraction (Image 1). As Haughwout & Kellhammer have explained, “ruderal witches must be at times tactically poisonous, ugly, unreadable, or dangerous in order to elude ... forms of accumulation and extraction” (Haughwout & Kellhammer 2025: 425). Our slith’ry offspring would be well guarded against any premature digging.

The truly bastard part of the protocol was in its refusal of domestication, opting instead for reproductive nonconformity and risk-taking. In our heretical act, my intention was to foil the tidy sequestering of reproductive technologies in the hands of corporatised research models and spaces through our enactment and adaptation of progenitor scripts. What was carried forward into materialisation was its next iteration in an equally mythologised place: Crete.

Case Study II: Fringe Entanglements—Ionian University (Greece)
TTTlabs BioFeral.BeachCamp, organised by the Ionian University, took place on the island of Crete, at the Athens School of Fine Arts Rethymno Annex⁵. As part of the wider Feral Labs network, TTTlabs encourages creative uncertainty through spontaneous, sometimes uncomfortable collaboration with (mostly) strangers, within the context of new reproductive technologies.

In this instance of TTTlabs, the topic of zombies, or the half-animate/re-animated was included, adding camp macabre to the mix. Regarding this, and pertinent to my interests, “[r]uderal witchcraft is a practice of conjuring the dead. Ruderal ecologies already perform necromancy ...” (Haughwout & Kellhammer 2025: 430). I will revisit this concept in interpreting laboratory procedures in my next case study, but what I’m interested in here is Haughwout & Kellhammer’s notion that witchiness resides in the refusal

5 For more, see: Parsaloglou 2025.

to incessantly drive forward into the catastrophes of future “progress”, and instead embrace hidden knowledges where meaning is found in the “moral claims of the past” (Haughwout & Kellhammer 2025: 429). Indeed, with species disappearance and capitalist interests in commoditising de-extinction technologies, we are already in the Necrocene (McBrien 2016) or, further, the Neganthropocene (Stiegler 2018), a realm not merely of extinction but of *managed* extinction. With *TTTlabs BioFeral.BeachCamp*, biotech was stripped of the glossy institutional “innovation” veneer and controls to be reconfigured as a feral practice where failure, cannibalism, undead mess, and ancient myth had chaotic potential for moral reconfiguration and the generation of new approaches and perspectives.

Image 6.
Concept drawing
for *Mooncalf*
Homuncularium by
Elizabeth Littlejohn.
Illustration credits:
courtesy of Elizabeth
Littlejohn, 2024.

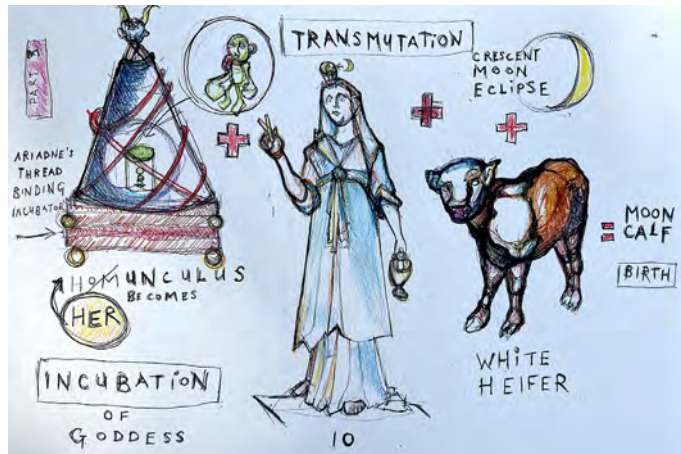


Image 7.
Mooncalf
Homuncularium, video
still. Photo credits:
Elizabeth Littlejohn and
WhiteFeather Hunter,
2024.



Image 8.*Mooncalf**Homuncularium*,

video still.

Photo credits:

Elizabeth Littlejohn

and WhiteFeather

Hunter, 2024



In this new context, my bastard homunculus protocol was adapted in collaboration with Canadian filmmaker Elizabeth Littlejohn into a communal ritual experiment and performance-based video production. While the original ritual at the Museum of Witchcraft and Magic had queered and inverted the Paracelsian protocol by blending it with a hermetic basilisk recipe, our Cretan iteration expanded my site-responsive praxis through localised mythic references. We gave it the title *Mooncalf Homuncularium*, and we used specific props to cue Ariadne and the Minotaur (Figure 6). A red cord was unwound as a bloodline tether, not only to evoke menstrual continuity and our speculative bio-lineage but also to symbolise Ariadne's leading role in labyrinthine navigation—and the myth's contemporaneous connotation of unravelling ethical dilemmas (Image 7). Further to this, the minotaur, a hybridised bastard child, stemmed from the bestial lust of Cretan witch and moon goddess Pasiphae after she mated with a magnificent white bull. As such, this myth also referred to the *Mooncalf* project of my earlier speculative biotech works that were part of my doctoral research (Hunter 2020; 2023). These quiet associations underlying more overt, profane acts were subconsciously revived and reworked through our engagements with situated cultural history.

Our ritual preparations included group construction of an incubation hut from foraged tree limbs on-site at the annex, bound and stitched together with our red cord (Image 8)⁶. Under my loose choreography, residency

6 My subtle performance costume cue was a single piece of red yarn pinned to my underwear and allowed to dangle down my leg as I worked.

Image 9.

Mooncalf
Homuncularium,
 video still.

Photo credits:
 Elizabeth Littlejohn and
 WhiteFeather Hunter,
 2024.

**Image 10.**

Mooncalf
Homuncularium,
 video still.

Photo credits:
 Elizabeth Littlejohn and
 WhiteFeather Hunter,
 2024.

**Image 11.**

Mooncalf
Homuncularium
 performance artefact.

Photo credits:
 WhiteFeather Hunter,
 2024.



participants gathered around the hut in a wide circle to make body fluid offerings from their pre-collected samples (Image 9). Again, the event coincided with a celestial event: this time, a solar eclipse. Through a processional line of willing participants, menstrual blood, sperm, saliva, tears, plant resins (and who knows what other undisclosed substances) were contributed to a single glass vessel housed in the hut. These contributions triggered a spectrum of affect: at times sombre, other times ridiculous. Rather than directly mimic “life” as Paracelsus had formulated it, our movements were to return laboratory processes to a relational, ecological, and unruly state. Intentionally infusing microbial and social contamination into the vessel seeded new possibilities for creation, whether that be the temporary fertilisation of a shed egg cell contained in the menstrual fluid and mixed with donor sperm, or otherwise. Again, in this space, the possibility of creation did not reside in producing a viable embryo but in the performative act of collective contribution and then letting the work fester in its own mythopoesis. We sealed our ritual with a clumsy adaptation of a traditional fertility rite (a maypole dance), each participant holding the end of a segment of red cord affixed to the incubation hut (Image 10). Weaving haphazardly under and over each other, clockwise and wide-ersins, this dance was the literal materialisation of our bound energies: awkward, playful, breathless, and futile. Our makeshift laboratory, built

Image 12.

Mooncalf

Homuncularium, video
still. Photo credits:
Elizabeth Littlejohn and
WhiteFeather Hunter,
2024.



from the landscape and now activated, was later placed back into the same landscape as a permanent, albeit mostly organic installation—to be slowly absorbed back into the ruderal terrain (Image 11).

The carboy from the first ritual in Cornwall thus became a “boundary object” as described by Leigh Star (M.I.T. Press et al. 2015)—for me, it signified a feral process, its story retold, method re-bastardised, and then re-enacted in a new landscape. Performing such intimate acts with strangers, in a strange place, utilised discomfort as a technique. Discomfort, as a feral measure, works to make obvious any cultural underpinnings of what may be presumed as science and its implications. In the end, the TTTlabs ritual protocol, like the witchcraft museum protocol, didn’t yield a conventional result; no homunculus stirred as an *in vitro* miracle of science and art, *that I know of*. What emerged was an embodied experience in techniques of magic, activated through collaboration as a methodology that perverts the sanctity of technoscience with the mess of blood, dance, desire, and in the end, the cleansing buffer of seawater (Image 12).

Case Study III: Signs of Bastardisation—Cultivamos Cultura (Portugal)

The final stage of my feral trajectory led me to the institutional laboratory of Dr Luis Graça at the University of Lisbon, through a partnership with Cultivamos Cultura⁷. This residency represented a pivot from speculative ritual to that of reproductive biotech proper—yet, perhaps, not so proper. Where earlier sites engaged the landscape as laboratory, the Graça Lab was a space of (permitted) infiltration and ritual residue. After fulfilling the mandatory vaccination requirement, administered at a kitchen table as makeshift medical office, I was authorised to work with the “wild-type” cells I sourced from my menstrual fluid.

The techniques I employed, neuronal induction and differentiation protocols (to shapeshift stem cells into brain cells), are standard in stem cell research, yet they became haunted by continuity, carrying biochemical echoes of my prior engagements in Cornwall and Crete. The same kind of stem cells swishing in the fluids of my earlier rituals were now my choreographed participants in petri dishes; I imagined the samples might have carried the layered memory of their collection: moon phase, menstrual cycle, atmospheric conditions, medical intervention (which delayed my menses), and creative intention. Echoing Star’s material spiritual inquiries,

⁷ For more, see: Cultivamos Cultura 2025.

particularly the question of “who will see the spaces between” (Puig de la Bellacasa 2016: 48), I pondered: were these cells entangled with their shit-cradled cohorts across interdimensional space? In this context, ritual science met regenerative medicine. Every cellular morphology was coaxed by bodily and planetary forces from which the cells had emerged, and these aspects would not be erased by usual requirements for anonymity in clinical studies. The grafting of the personal and the communal ritual onto the lab constituted a bastardised technoscience that refuses to sever knowledge from body and intuition from innovation.

Watching fresh cells, taken directly from my menstrual cup and animated through live cell imaging microscopy, gave me the opportunity to interpret their visible changes symbolically: as sigils, a new

Image 13.

Live cell imaging microscopy of my menstrual stem cell differentiation experiments, acquired at University of Lisbon. Photo credits: WhiteFeather Hunter, 2024.

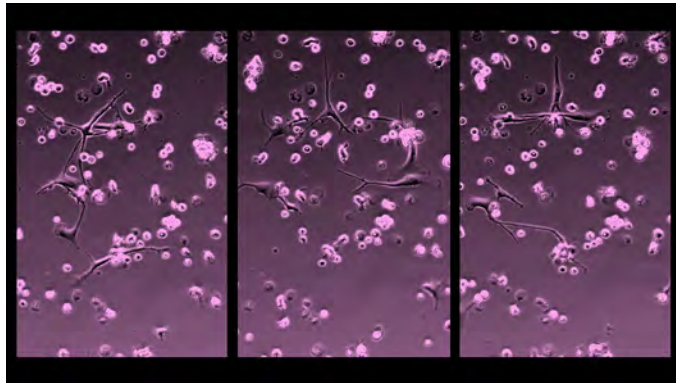


Image 14.

Installation of *Z-stack*, exhibited as part of *Barely 50* (curated by Marta de Menezes), Cultivamos Cultura. Photo credits: WhiteFeather Hunter, 2025.



vocabulary of meaning where innate tendencies (autopoiesis) of my material body were influenced by micro amounts of biochemical growth factors I'd added to them. Brain-derived neurotrophic factor (BDNF) and other liquid messengers triggered morphological responses, such as axonal-like elongations that became visual markers of an emergent language I strived to decipher: signs of experiment success, failure, or perhaps another indicator? (Image 13) What was a successful experiment, anyway? Following Latour's observations of lab work "guided by an invisible field" (Latour 1986: 17) and aligning with Star's impetus to invent languages that examine hierarchies of credibility in science and technology studies (Star 2016: 13), I was inspired to author(ise) my own nonverbal tome of cellular meanings, presenting a kind of *cellomancy*. Thus, my reading of cellular behaviour laid the foundation for what would become a new work, titled *Z-stack* (Image 14).

The process of inspecting the microscopic time-lapse frames (over 1200 of them) visually revived and shifted the temporal choreography of cell activity. I materialised this dance across the dish into printed and hand-bound books; the book pages, made from a temporally sequential (Z-axis) stack of images, could be read by another individual by thumbing through the pages (Image 15). Framing the cells as an archival conjuration text tied

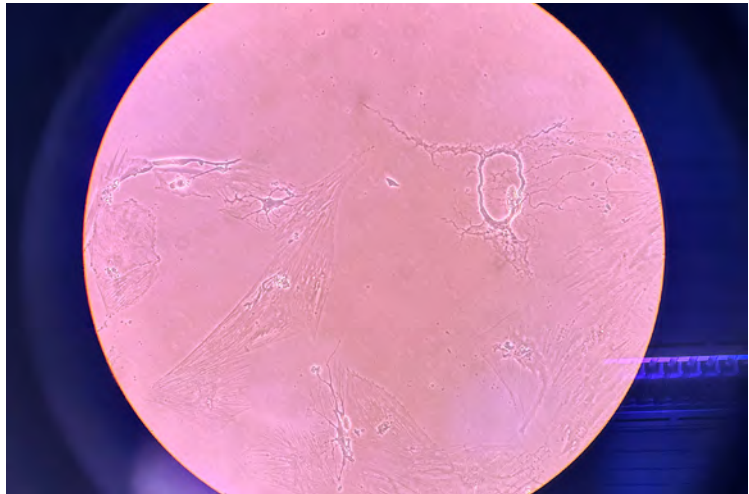
Image 15.

Video still of *Z-stack*
flip-book. Photo credits:
WhiteFeather Hunter,
2025.



back to my earlier research at the Museum of Witchcraft and Magic, where living records shifted with time and morphed into new cultural adaptations. Likewise, the now-dead (bleached and dumped as biohazardous) cells would re-animate repeatedly through manual engagements, hearkening back to the *BioFeral.BeachCamp* zombie inculcation. But more than this, treating the differentiating stem cells as both research material and articles of meaning pushed against dominant frameworks of scientific investigation that deliberately obscure anecdotal narratives or personally identifying information. My approach instead re-personalised the cells as subjective, responsive, and transformative within the cycles of my own history and in the hands of my audience. This reframing is central to concepts fuelling the feral turn, where we understand “science as radically contextual and problematic venture with a very problematic social mandate” (Star 2016: 14)—where the lab is never neutral, the protocol never truly faithful, and the body never fixed, nor passive.

Image 16.
Microscopic image
of menstrual cells
in neural induction
medium. Photo credits:
WhiteFeather Hunter,
2023.



Theory in the Flesh: Feral Feminism (aka TechnoFeminist Witchcraft) as Method

Where human intervention, including tech interventionism, collides with ferality is through the concept of “rewilding” (as previously mentioned) that animates the Feral Labs network. Rewilding is not, however, a concept exclusive to subversive biotech practices and philosophies. Colossal Biosciences, a US tech start-up giant interested in ecological reconstructivism through so-called “de-extinction” experiments presents rewilding within its epistemological motives for restoration, control, and capital-backed conservationism. They use genome editing and surrogate species in attempts to revivify fuzzy, charismatic megafauna like the woolly mammoth. Their model, emblematic of conventional biotech aims, overlaps with technocratic ambitions to treat ecology as a programmable interface; this, towards a remedy for our current catastrophe (fitting in with the “Neganthropocene”). The wild here is engineered back into a facsimile existence, domesticated through science, and made legible to dominant frameworks of progress and utility. As such, it is legitimised.

The figure of the bastard sits outside of heteronormative reproductive conventionality. Bastards are not legitimised by sanctioned systems of lineage, bloodline, or patriarchy but born of disruption and transgression, both personal and social. In this light, my protocols, formed in the fissures between sanctioned laboratory practice and embodied witchcraft, take on a bastard form. They are thus *illegitimate* by institutional standards, yet possibly fertile—meant to multiply possibility versus replicate an external authority.

In the dish, the “bastard” lineage is cellularly manifest. This is where ruderal and bastard collapse into one another to rewild: both are figures of emergent life via disturbance events. The “ruderal” in my technofeminist witchcraft practice draws from the disrupted ecology of the shedding uterus; I conceive of the uterus as a ruderal zone through the ways that stem cells are both hormonally razed/released and begin to rebuild the endometrium after each menstruation. It is a continuously regenerative, vibrant, and dynamic boundary space in constant flux, providing the material for most of my biotech experiments *and* witchcraft rituals (what I refer to in this chapter as bastardised protocols).

The shedding uterus is also a biome of transformation, ripe with not only agency but mythopoetic potential. The menstrual blood medium does not fester, moulder, or become externally “contaminated” in the way other cell (mono)cultures can. Its commensal species of microbes or other

factors native to the fluid seem to assist in protecting the cells from invaders; the usual antibiotic soup to control for a cell culture without microbial agents is not required⁸. This is relevant both in the sense of social contamination through the *Homuncularium* rituals but also in the case of my later stem cell differentiation experiments.

Further, my endometrial cells are not derived from standardised cell lines; they are categorised within bioscience nomenclature as a “wild-type”, being freshly sourced from my own flesh, hormonally conditioned by the unique and variable ecology of my body. They refuse universalisation or reduction; their proliferation is weedy, even astonishing (my first reaction to witnessing their rate of growth)⁹. They outpace commercial fibroblasts and form uncanny morphological structures that could be seen to embody both science and spell (Image 16). Additionally, these cells are often frozen through cryogenic protocols to later be revived when needed. This important measure of necromancy ensures continuous supply and enables production of new knowledge throughout my now wildly unpredictable, perimenopausal cycle—and backup in case of human error.

Ruderal plants thrive in contaminated soil, while bastard protocols thrive in the contaminated epistemic terrain of feral lab practices—where scientific legitimacy has been nudged, queered, re-evaluated, and either worked around or with. In this way, feral feminist technoscience doesn’t meekly seek inclusion in the dominant knowledge regimes; rather than feast on the dead (McBrien 2016: 116), we call them up to learn from them. My bastardised protocols dirty institutional biotech, seed it with rogue products and intent. They ask: What new knowing might emerge when we stop sanitising/standardising methods and acknowledge the (sometimes pleasurable) filth of the body? What regenerative power lives in disavowed zones of uterine blood, queer semen, discarded tissues, awkward or uncontrollable tears, and other mucosal spillages? What new feral feminist futures can I conjure into being?

8 I have kept tubes and syringes of menstrual fluid for months in my fridge at home, with no signs of contamination: no smell, no filamentous mouldy structures, no bubbling fermentation whatsoever.

9 In fact, they proliferate so rapidly that I had to resist the folly of self-diagnosis of possible cancer; the only other cells I’d seen in such accelerated mitosis were HeLas (cervical cancer cells used in many lab experiments).

Conclusion: Wetness as Epistemology

Wetness is a condition of vitality. If knowledge in patriarchal science has been encoded as clean, contained, and ultimately intellectually and institutionally dry, then feral feminism insists on wetness. In my protocols, knowledges pool, leak, circulate; they are inseparable from feeling, excretion, secretion, touching, rubbing, bumping, and masturbation. To treat menstrual blood, semen, saliva, and tears as epistemic agents is to accept and acknowledge them as unruly, embodied, and innately resistant to control. In this, feral rewilding is permissive. Instead of engineering extinction backwards, it births a future through embodied, bastardised protocols. It demonstrates the concept that rewilding goes beyond ecology, as a queer methodological stance. As such, where Colossal operates in a framework of ecological control, my work, through the artist residencies I have discussed, utilises uncertainty, eroticism, and co-creative rituals. It locates the wild in an intimate, highly personal and relational bioscope, versus the far-off tundra. It is a refusal to let lab practices remain domesticated by technomasculinist orders of sterility, reproducibility, and control. Through this agenda, my work sits within, and extends, feminist technoscience. To rewild biotech is to reintroduce its materials into unruly, erotic relation with their ecologies and retell the stories of those ecologies. It is also to rewild the self, to claim the researcher not as detached observer but as participant, witch, lover, and queer accomplice. Rewilded methods are not necessarily aiming towards production of stable knowledge, but to cultivate futures alive with the uncontainable, the uncomfortable, the hybrid, and the bloody bastard.

Bibliography

- Alaimo, S., & Hekman, S. (2008). *Material Feminisms*. Indiana University Press.
- Barad, K. (2003). Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter. *Signs: Journal of Women in Culture and Society*, 28(3), 801–831. <https://doi.org/10.1086/345321>
- Barad, K. (2007). *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Duke University Press.
- Bennett, J. (2010). *Vibrant Matter: A Political Ecology of Things*. Duke University Press.
- Billimore, Y. (2024). Introduction. In Y. Billimore, T. Dolinšek, & U. Veber (Eds.), *Feral Labs Node Book #2: Feralities* (pp. 6–13). Bioart Society and Zavod Projekt Atol.
- Bluemink, M. (2021). On Psychic and Collective Individuation: From Simondon to Stiegler. *Epoché Magazine*, 40. <https://epochemagazine.org/40/on-psychic-and-collective-individuation-from-simondon-to-stiegler/>
- Bowker, G. C., Timmermans, S., Clarke, A. E., & Balka, E. (Eds.). (2015). *Boundary Objects and Beyond: Working with Leigh Star*. The MIT Press.
- Cultivamos Cultura. (2025). *Microdocs (Residencies) XXXIII – WhiteFeather Hunter* [Video]. Vimeo.
- Haughwout, M., & Kellhammer, O. (2025). A Ruderal Witchcraft Manifesto. In S. Chaudhuri & J. Ward (Eds.), *The Witch Studies Reader* (pp. 420–435).
- Hunter, W. (2020). Mooncalf: “Unclean meat”. *Technoetic Arts*, 18 (Taboo–Transgression–Transcendence in Art & Science), 205–222. https://doi.org/10.1386/tear_00039_1
- Hunter, W. (2023). Mooncalf Menstrual Meat (MMM). *Continuum*, 37(5), 576–594. 10.1080/10304312.2023.2231666
- Hunter, W. (2025). *Arcanum Sanguinis: Occult Blood*. WhiteFeather Hunter. <https://www.whitefeatherhunter.ca/copy-of-sentient-clit-pussification>
- Latour, B. (1986). *Laboratory Life: The Construction of Scientific Facts*. Princeton University Press.
- McBrien, J. (2016). Accumulating Extinction: Planetary Catastrophism in the Necrocene. In J. W. Moore (Ed.), *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (pp. 116–137). PM Press.
- Parsaloglou, S. (2025, September 1). *Media*. TTTlabs Ionian University. <https://avarts.ionio.gr/ttt-labs/2024a/en/media/>
- Puig de la Bellacasa, M. (2016). Ecological Thinking, Material Spirituality, and the Poetics of Infrastructure. In *Boundary Objects and Beyond: Working with Leigh Star* (pp. 0). doi:10.7551/mitpress/10113.003.0005
- Simondon, G. (2020). *Individuation in Light of Notions of Form and Information* (T. Adkins, Trans.). University of Minnesota Press.
- Star, S. L. (2016). Revisiting Ecologies of Knowledge: Work and Politics in Science and Technology. In *Boundary Objects and Beyond: Working with Leigh Star* (pp. 0). doi:10.7551/mitpress/10113.003.0004
- Stiegler, B. (2018). *The Neganthropocene*. Open Humanities Press.
- Tsing, A. L., Deger, J., Keleman Saxena, A., & Zhou, F. (2021). Feral Atlas: The More-than-Human Anthropocene. *Interdisciplinary Studies in Literature and Environment*, 28(4), 1663–1664. <https://doi.org/10.1093/isle/isab078>



III—1

Clare Stott

Permission to Be Ridiculous: Field Notes From a Scientist Turned Artist

Clare Stott is a scientist-artist-mother. Her work fuses microbial growth, sound, and textiles into speculative narratives, frequently driven by humour. Trained in the lab's rigid truths, Clare initially struggled with scientific art, her gaze tethered to accuracy, shaped by post-positivist logic. Now, she embraces ambiguity, error, and porous boundaries, exploring what happens when science slips and exploring concepts in scientific philosophy and beyond.

Abstract

This chapter examines how microbiology's representational apparatus, the microscope, the Petri dish, the named isolate, actively produces the phenomena it claims to observe. Drawing on Karen Barad's agential realism, Clare Stott argues that preparation techniques for scanning electron microscopy do not reveal pre-existing microbial forms but co-create them through material entanglement. Yet most microbial life resists this regime: biofilms dissolve individual identity into collective matrices, viable-but-non-culturable organisms evade growth-based detection, and the vast "microbial dark matter" remains accessible only as genomic traces. Following Feyerabend's methodological anarchism and Bergson's notion of duration, proposes artistic practices that work with rather than against these feral modes of existence, using sonic mapping, collage, and what she calls wilful silliness to honour forms of life that exceed the laboratory's temporal and spatial grammars. This is not a rejection of scientific method but an expansion of it: a shift from control to attunement, from taxonomy to entanglement, from the demand for visibility to a practiced comfort with the provisionally unknowable. The chapter models this shift through its own form, threading technical microbiology, continental philosophy, and autobiographical fragments into a polyvocal account of knowledge-making as necessarily incomplete, affectively charged, and aesthetically shaped.

A. Working With the Invisible: Material Limitations in Microbiology Bioart

I. Layers Upon Layers: The Impossibility of Direct Representation

I used to think scanning electron microscopy was "accurate". Then I started listing every decision involved in creating a biofilm image, and I realised: it's interpretation all the way down.

The apparatus problem doesn't stop at the laboratory bench, it multiplies through every stage of translation. Consider the Labolero's biofilm imagery. To create those prints, the biofilm had to pass through three distinct apparatus regimes, each making choices that shaped what could emerge.

[Layer 1] Cultivation Apparatus

Before you can image a biofilm, you have to grow one. The scientist who created the SEM image I used had already optimised cultivation conditions for their target organism: temperature, nutrients, oxygen, time., Those choices were invisible, baked into what appeared as "the biofilm".

[Layer 2] Visualisation Apparatus—or, Necessary Destruction

SEM is treated as a gold-standard technique: high resolution, beautiful detail. But to get that image, the sample must be fundamentally transformed.

First, dehydration: water is removed through graded alcohol washes. This disrupts and removes extracellular polysaccharide (EPS), the sticky matrix that holds biofilms together and defines much of their architecture. You've already lost a major structural component.

Then, sputter-coating: the sample is sprayed with gold or platinum to make it conductive. You're now imaging a metal-coated surface, not a biological one.

Finally, electron beam exposure in a vacuum chamber. Delicate biological samples can be damaged by the heat generated in the interaction area or by rupture of chemical bonds. But these steps aren't mistakes or shortcuts; they're *necessary*. Water in the sample would heat up and explode under the electron beam, so it has to be removed. The gold coating is required for imaging. The vacuum is non-negotiable.

The "accurate" image is possible only because of systematic destruction. What I see as "the biofilm" is actually cells with EPS removed, surfaces coated in metal, structures heat-damaged by electron bombardment, imaged in conditions no living organism could survive.

This is Barad's point exactly. The apparatus doesn't passively reveal what's already there; it participates in creating the phenomenon (Barad 2007: 185). Even this highly accurate technique produces an image that is not "as it seems". It's *as the apparatus makes it*.

SEM produces grayscale. For colour, I borrowed from Gram staining; a completely different apparatus (heat fixation, crystal violet, safranin) that also kills the sample to make it visible. Gram-positive bacteria appear purple, Gram-negative appear pink; but only after this elaborate chemical manipulation. I chose wool colours approximating these hues, collapsing two destructive visualisation methods into one textile image.

[The Layering Problem]

Louise Mackenzie describes this as "technological layering": we look through layers of technology rather than using our eyes directly to perceive. In adding and selecting layers of technology, we develop a particular relation to the object through apparatus; the adjustment of a lens, the reflection of a laser, the augmentation of hue on a computer image, "all constructed according to the observer's own narrative" (Mackenzie 2020: 108).

Bruno Latour captures the trade-off: “We can see more [in the lab], since we have before our eyes not only the image but what the image is made of. On the other hand, we see *less* because now each of the elements ... could be modified so as to produce a different visual outcome.” (Cited in Mackenzie 2020: 109) SEM gives me extraordinary detail about biofilm surface topology; but I’ve lost the EPS, the living dynamics, the ecological relationships. I see more structure; I see less biofilm.

This isn’t unique to science. The artist adds more layers to an already-layered process.

***[Layer 3] Artistic Translation Apparatus, or,
Creative Divisional Biofilm***

Then the artist adds their own decisions. These layers could be considered like a creative divisional biofilm: the initial colonisers (the SEM image, the cultivation choices) attach at an opportune surface, allowing successive layers to build and accumulate. Each new stratum depends on what came before, adding complexity and mass:

- [a] Digital manipulation (contrast adjustment, cropping, colour overlays)
- [b] Scale decisions (how much magnification to suggest?)
- [c] Material choices (knit fabric, wool fibre, absorbency, drape)
- [d] Colour selection (Gram stain purple and pink, borrowed from a completely different apparatus)
- [e] Printing technology (resolution constraints)
- [f] Fabrication constraints (Marie Jones, my textile artist collaborator, used a hacked knitting machine to pixelate a biofilm SEM image, with its own logic for how images become stitches)
- [g] Cost and time resources
- [h] Aesthetic preferences (shaped by my art education, cultural references, what reads as “scientific” to audiences)

These decisions might seem more arbitrary than the scientist’s, less “rigorous”, more subjective. But they’re influenced just as systematically by background, resources, skills, training, and institutional contexts. As Louise Mackenzie argues, “as technology rapidly escalates and subjective choices are made (consciously or unconsciously) at each layer, the control of facts spirals out of reach” (Mackenzie 2020: 109). The difference isn’t that science is objective and art is subjective. It’s that we’re more

comfortable *admitting* that art involves choices. Science hides its apparatus behind terms like “standard protocol” and “optimised conditions”.

Art puts the apparatus on display.

Mackenzie notes that our willingness to accept these layered interpretations “is reminiscent of practices more closely aligned with a magical or spiritual sense of perception: the kind that requires a level of faith” (Mackenzie 2020: 109). For the artist, this is welcome, embracing uncertainty and constructed meaning is part of the practice. But it also means taking responsibility for being an author, not an observer. By the time the Labolero prints existed, the bacteria had been: cultivated under optimised conditions, killed and dehydrated (EPS removed), gold-coated, electron-beam damaged, digitally processed, recoloured using a different apparatus’s logic, translated into a pixelated knitting pattern via hacked software, and knitted into wool fabric. Like a mature biofilm, each layer deposited over the last, building complexity, except instead of polysaccharides and proteins binding pioneer colonisers to late successional species, its decisions, constraints, and interpretations binding apparatus to apparatus, all the way down.

[The Colour Question]

This realisation paralysed me initially. If I want to draw a bacterium, what colour should it be? Advertisements typically show bacteria as green, but bacteria aren’t green. Actually, green is a terrible choice. Most bacterial pigments are beige, yellow, orange, or red (prodigiosin in *Serratia*, violacein in *Chromobacterium*). The Gram stain produces purple or pink. Under natural light, most bacteria are translucent or cream-coloured. In SEM, they’re gold-coated grey. So what’s the “accurate” colour?

The question exposes the impossibility. There is no colour without apparatus, colour is always the product of specific illumination, staining, digital rendering, display technology. As Barad writes, “we do not obtain knowledge by standing outside the world; we know because we are of the world” (Barad 2007: 185). The colours I used aren’t “bacterial colours”, they’re the colours that emerge through Gram staining’s apparatus, borrowed and reapplied to an SEM image that uses a completely different visualisation regime.

[Quantum Soup] When Representation Becomes Conceptually Incoherent

Artist Libby Heaney confronts an even more extreme version of this impossibility. A former quantum information physicist turned artist, Heaney works with quantum computing to create immersive visual worlds that make the quantum realm tangible, not by representing it accurately (which is impossible) but by developing visual languages that honour its fundamental weirdness (Heaney 2024).

Quantum phenomena resist representation not just practically but *conceptually*. Observation changes the system (the measurement problem). Particles exist in superposition, multiple states simultaneously, until measured. Entanglement means properties are relational, not intrinsic. There is no “view from nowhere” because the apparatus *is* the phenomenon, even more radically than in microbiology.

Heaney invokes slime, multiplicity, and entanglement as metaphors because direct visualisation is conceptually incoherent. You cannot show a particle “in superposition” because the act of showing (measurement, visualisation) collapses the superposition. The best you can do is create experiences that *evoke* quantum logic, works that glitch, overlap, refuse singular interpretation.

If quantum physics makes representation impossible in principle, microbiology makes it impossible in practice. I can’t show you “the bacterium” any more than Heaney can show you “the quantum state”, but at least bacteria don’t collapse when I look at them. The apparatus still transforms them utterly, just less dramatically than in quantum mechanics.

Both of us, physicist-artist and microbiologist-artist, end up in the same place: working with metaphor, approximation, and strategic choices that acknowledge their own limitations. The difference is that people *expect* quantum mechanics to be weird and unvisualisable. They still think bacteria are straightforward.

There is no direct representation.

Each layer involves choices that shape what emerges. There is no “direct representation” of bacteria, only multiple mediated translations, each filtered through different equipment, protocols, and interpretive frameworks. Science doesn’t escape this; it just has different apparatus constraints than art does.

When I add my artistic translations, digital adjustments, wool colours, knitting decisions, I’m not corrupting some pure scientific representation. I’m adding layers to an already-layered process. The scientific image

was already constructed through cultivation choices, destructive sample preparation, and visualisation technology. My contribution is simply more transparent about being a translation.

This is what Barad means by “agential realism”: the apparatus (whether microscope or knitting machine) doesn’t passively observe, it participates in bringing forth phenomena. There is no bacteria-in-itself to represent accurately. There are only bacteria-as-cultivated-under-these-conditions, bacteria-as-killed-and-gold-coated-and-electron-beam-imaged, bacteria-as-translated-into-wool-at-this-scale-with-these-colour-choices.

The apparatus doesn’t distort reality. The apparatus *is* part of how reality comes into being, for us, in ways we can engage with. There is no view from nowhere. There is no absolute, correct process, just choices upon choices, all the way down.

II. The Petri Dish Problem

If the apparatus already shapes what we see, the Petri dish problem makes it worse. As Grote notes, “the Petri dish has been a mainstay for how to conceive of microbes for almost a hundred years, but it now seems that the main premises of this technique, pure cultures representing clearly delineated microbial species in isolation, are being questioned” (Grote 2023). Recent DNA sequencing has revealed that over 99% of environmental microorganisms cannot be cultivated with standard laboratory techniques (Staley & Konopka 1985). When we culture microbes on agar, we’re seeing less than 1% of what’s there.

This isn’t just a scientific problem, it’s an artistic one. If bioart requires visible growth as evidence of life, and if cultivation techniques only access a tiny fraction of microbial diversity, then what are we representing? Are we telling stories about microbial life or about the 1% of microbes that tolerate laboratory conditions?

This is also where biofilms become important again. The majority of bacteria prefer to grow as biofilms, complex, cooperative matrices where individual identity dissolves into collective function. Yet the common thought about bacteria, for most people, is individual swimming green *E. coli*-like cells. As a scientist, this representation feels limited and restrictive, as does the need to individually name every bacterium you’re living with. It also presents bacteria in a particular snapshot of their lifecycle, actively dividing, motile, isolated, which doesn’t encompass the range of life available: dormancy, spore formation, biofilm embeddedness, viable-but-non-culturable states.

The cultivation apparatus (Layer 1) doesn't just mediate, it *excludes*. The vast majority of microbial life, the “microbial dark matter”, remains inaccessible not because we lack tools to see it, but because it refuses to grow under our conditions. The candidate phyla radiation (CPR), comprising perhaps 15% of all bacterial diversity, possesses stripped-down genomes lacking genes for basic metabolic functions (Hug et al. 2016). These organisms exist only in relation, their biology a testament to the inadequacy of isolation-based methods.

Bioart defaults to the Petri dish because it's clean, contained, controllable, and visually compelling. But we're stuck in a representational loop, constrained by what our techniques allow us to see and what pop culture has trained audiences to expect.

III. The Visibility Trap

Beyond cultivation limitations, there's a deeper problem: bioart's obsession with visibility itself. As currently practised, bioart requires evidence of life that humans can perceive: visible colonies, colourful pigments, gas bubbles, electrical conductivity. We need microbes to *perform* for us.

This performance requirement excludes vast territories of microbial life from artistic exploration. Consider the viable-but-non-culturable (VBNC) state: bacteria that are metabolically active, participating in ecosystem functions, even capable of causing disease, but refusing to grow under laboratory conditions (Oliver 2005). They won't form colonies. They won't produce pigment. How do you make art with organisms that refuse to be seen?

Or consider temporal mismatches. Many microbial processes unfold on timescales incompatible with human perception or gallery schedules: the gradual establishment of symbiosis, the multi-generational evolution of antibiotic resistance, the slow microbial decomposition of organic matter. These processes are fundamental to understanding microbial life, but they resist the formats bioart typically demands, the dramatic time-lapse, the workshop demonstration, the exhibition that opens and closes within weeks.

The apparatus of visibility, whether a Petri dish, microscope, or time-lapse camera, selects for a narrow band of microbial behaviour: fast-growing, pigmented, morphologically distinctive organisms performing on human timescales. Everything else remains offstage.

IV. From Scientific Scepticism to Apparatus Theory

As a scientist, I couldn't help viewing microbiological art through a scientific lens. When I first encountered Bruno Latour and Steve Woolgar's argument in *Laboratory Life* (1979) that scientific facts are socially constructed, my immediate response was dismissal, it felt anti-science, like flat-earth thinking. How could the bacteria I cultured, the microscope images I captured, be "constructed"? They were *real*.

But the apparatus problem forced me to reconsider. Latour and Woolgar weren't claiming bacteria don't exist, they were showing that what counts as a "fact" emerges through material practices, instruments, and institutional contexts. The SEM image I used for the Labolero prints wasn't "false", but it was constructed: through cultivation choices, destructive sample prep, visualisation technology, and my own artistic translations. The layers revealed themselves. Barad's apparatus theory gave me the framework to understand this without abandoning scientific rigour.

[The Bioart Dilemma]

This creates tension. Eduardo Kac argues that "bio art has no obligation to thematise topics that relate to biology or the living" (2017). Fair enough, art can do what it wants. But many bioartists, including myself, care about science communication and education. Hamidi and Asgarali-Hoffman (2021) found that bioartists view their work as a tool for engaging the public and generating new knowledge through artistic investigation.

If that's the goal, then we need to grapple with these limitations honestly. We need to acknowledge that cultivation methods access only a tiny slice of microbial life. We need to find ways to tell stories about the unculturable majority, the dormant, the collective, the temporally mismatched.

[Three Possible Paths]

Maybe this means developing new cultivation techniques specifically for artistic purposes, devices like the iChip (Dance 2020) that maintain organisms in conditions closer to their natural environment, turning the cultivation apparatus itself into an artwork.

Maybe it means working more closely with computational models and simulations visualising or sonifying what we know about microbial dark matter from genomic data, even if we've never observed the organisms directly.

Or maybe, and this is the path I've taken, it means embracing the invisible, the uncertain, the unknowable as aesthetic categories in their

own right. Instead of always forcing the invisible to become visible, what if we developed practices that honour opacity? What if absence, dormancy, refusal, and *strategic wrongness* became part of our artistic vocabulary?

This third path led me to pseudoness.

B. Project Descriptions

The Labophone: Lab Sounds as Musical Material

The Labophone is a physical instrument I built from lab equipment housed in an old microscope box. Initially, I installed a contact microphone inside to detect surface movements, tapping, scraping, the small percussive gestures of laboratory work. When that proved unreliable, I shifted to recording actual lab sounds: Petri dishes clashing during total viable count procedures, the zig-zag rhythm of streak plate inoculation, pipettes clicking, plate count readers beeping. The Labophone became a found-sound instrument, turning laboratory procedures into percussion.

Pseudosonication: The Album

Pseudosonication is the album I compiled using multiple methodologies, and the name itself is a pun: “pseudo” (false) + “sonication” = false music. It has nothing to do with the laboratory process of using ultrasound to disrupt cells. It’s strategic wrongness through wordplay, calling music “sonication” to highlight the absurdity of expecting direct translation between microbial processes and sound. The album draws on several inputs:

1. Labophone sounds (recorded lab procedure noises—Petri dish percussion, streak patterns, pipette clicks)
2. Genetic sonification (DNA bases from *Pseudomonas aeruginosa* sRNA mapped to keyboard notes: C pairs with G as musical fifths, building C major seventh chords)
3. Tenori-On mapping (microbial colonies growing on agar plates translated to button positions on the Tenori-On’s 16 × 16 grid, creating looping electronic patterns)
4. Bacterial growth curve as structure (tracks follow the phases: lag → exponential → stationary → death, with tempo and density changing accordingly)
5. Media samples (clips from the 1936 film *The Life of Louis Pasteur*, lab ambient “white noise”, and my daughter Lauren reading the *Pseudomonas* haiku)

The result is layered electronic music built from microbial data, lab sounds, and borrowed media, compiled on a portable OP-1 music workstation. Each track is a small experiment in what happens when you treat bacterial growth curves as compositional scores and laboratory procedures as rhythm sections.

Why “Pseudosonication” Matters Methodologically

By calling this “sonication”, I’m not making a poetic gesture; I’m highlighting the impossibility of direct translation. Real sonication destroys cells with sound waves. My Pseudosonication creates sound *from* microbial information, but makes no claim that the music *represents* bacterial experience. It’s openly a construction, a series of arbitrary but deliberate mappings (DNA → notes, colonies → buttons, growth phases → tempo).

This is pseudoness in action: using scientific terminology incorrectly on purpose to make the constructed nature of all representation visible. The Labophone and Pseudosonication don’t pretend to give bacteria a “voice”, they acknowledge that any translation from microbial scales to human perception is already metaphor, already interpretation, already a form of strategic wrongness.

Pseudobugs: Paint as Proxy

Pseudobugs emerged from a simple observation: most microbiological procedures happen before visible growth. When performing serial dilutions, aseptic spreading, or preparing plates for incubation, water and bacterial culture look identical. The organisms are invisible at the procedural stage, you’re performing a technique in relation to something you cannot see. So I created paint-based bacteria, fake microorganisms that function as visual proxies. Pseudobugs, when used with any kind of paint applied to an agar surface to mimic bacterial colonies, or pastel dust to mimic moulds, allow artists to perform total viable counts, practise aseptic technique, and explore microbiological methods without institutional lab access. Anna Dumitriu identifies this access barrier in “Trust Me, I’m an Artist”, describing how “building opportunities for art and science collaboration” requires navigating ethical and institutional gatekeeping mechanisms that often exclude artists from laboratory spaces (Dumitriu 2017).

Pseudobugs sidestep the gatekeeping entirely, but they’re not just pragmatic. They’re epistemic provocations that ask: if paint-based bacteria offer equivalent learning experiences, what exactly is “lost” without living cells? The answer reveals something uncomfortable about microbiological

pedagogy, it's already training ritualised performance in relation to the invisible. You learn to pipette sterile water as if it contains bacteria. You learn aseptic technique by performing caution around emptiness. Pseudobugs simply make that performance visible. This connects back to the apparatus problem. Pseudobugs are another layer of translation, not cultivation → visualisation → artistic interpretation, but straight to artistic construction without the pretence of “real” microbes. They acknowledge that all representation is already constructed, already mediated. Paint bacteria and cultured bacteria both require apparatus to become meaningful; Pseudobugs just don't pretend otherwise. They're not alive, but they perform aliveness, or rather, they perform what we've decided counts as microbial presence in pedagogical contexts. They can tell stories about procedures, protocols, and the constructed nature of laboratory knowledge that living microbes, constrained by cultivation techniques and visibility requirements, cannot. They reveal that much of what we call “working with microbes” is actually working with the *idea* of microbes, following protocols designed around anticipated invisibility. This isn't about replacing living organisms, direct encounter with actual microbial life remains irreplaceable, but by expanding the toolkit beyond literal aliveness, we can explore territories current bioart can't reach: the unculturable, the dormant, the procedural rituals themselves. Pseudobugs make the apparatus visible by removing the biology and leaving only the performance.

C. Conclusion: Pseudoness as Practice and Feral Epistemologies

Permission to Be Ridiculous

Feralness, pseudoness, unknowing I gave up trying to control microbial representation and had more fun, because what I wanted was an artistic practice, not a return to the lab. Also, I was very aware that art/science could be seen as ‘bad science’, and I had to become *ridiculous* to get over it. I had developed the term and concept of pseudoness before learning of the feral labs approach, but when I heard it, it was an immediate YES, a parallel to what I was saying with pseudoness. It named the exact permission I needed to embrace non-accuracy, to stop treating accuracy as an obligation, and to get curious about *why* I felt so anxious about getting the science right in the first place. That question launched me into philosophy of science, Barad, Elkins, apparatus theory, and I'm still reading. The list is long. I haven't finished. But pseudoness was never about rejecting science or scientific rigour. It was about carving out space for artistic methods that

don't collapse under the pressure to be scientifically defensible, methods that can be speculative, metaphorical, even wrong, as long as they're *generative*. Through the Labolero, Pseudosonication, and Pseudobugs, this practice demonstrates how accuracy anxiety becomes a productive creative constraint when approached through strategic falseness and is also a lot of fun!

Once I realised that even the most "accurate" methods: SEM, Gram staining, cultivation protocols, were already layers of interpretation, constructing phenomena rather than revealing them, the pressure to "get it right" collapsed. If science itself operates through apparatus that co-creates what we observe, then my artistic translations weren't corruptions of some pure truth. They were just more layers in an already-layered process. Pseudoness became my method for working *with* that impossibility instead of pretending it didn't exist.

Microbial dark matter, the unculturable majority of bacterial life, shows that conventional techniques have always been limited. Pseudoness and feral labs aren't rejections of rigour; they're methods *for* navigating an art practice where full accuracy was never possible. This is my contribution to feral methodologies: not a fixed framework but a lived inquiry. Like its maker, still becoming. And more than that, it's an invitation. To other artists/scientists anxious about accuracy: you can honour the science *and* take liberties. You can work with the unculturable. You can be wrong, generatively, incomplete, a little feral.

Bibliography

- Barad, K. (2007). *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Duke University Press.
- Dance, A. (2020). The Search for Microbial Dark Matter. *Nature*, 582(7811), 301–303. <https://doi.org/10.1038/d41586-020-01684-z>
- Dumitriu, A. (2017). Trust Me, I'm an Artist: Building Opportunities for Art and Science Collaboration Through an Understanding of Ethics. *Leonardo*, 51(1), 83–84. https://doi.org/10.1162/LEON_a_01481
- Hamidi, F., & Asgarali-Hoffman, S. N. (2021). Perspectives of Bioartists and Community Lab Organizers on Working with Living Organisms. In *CHI '21: Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (Article 591, pp. 1–15). <https://doi.org/10.1145/3411764.3445060>
- Heaney, L. (2024). *Quantum Soup* (S. Himmelsbach, Ed.). HEK (House of Electronic Arts Basel).
- Hug, L. A., et al. (2016). A New View of the Tree of Life. *Nature Microbiology*, 1(5), 16048.
- Kac, E. (2017). *What Bio Art Is: A Manifesto*. https://ekac.org/manifesto_whatbioartis.html
- Grote, M. (2018). Petri Dish Versus Winogradsky Column: A Longue Durée Perspective on Purity and Diversity in Microbiology, 1880s–1980s. *History and Philosophy of the Life Sciences*, 40(1), Article 11. <https://doi.org/10.1007/s40656-017-0175-9>
- Latour, B., & Woolgar, S. (1979). *Laboratory Life: The Social Construction of Scientific Facts*. Sage Publications.
- Mackenzie, L. (2020). Microbial Sensing: Constructing Perception Through Technological Layers. *Leonardo Music Journal*, 30, 108–112. https://doi.org/10.1162/lmj_a_01101
- Oliver, J. D. (2005). The Viable but Nonculturable State in Bacteria. *Journal of Microbiology*, 43, 93–100.
- Staley, J. T., & Konopka, A. (1985). Measurement of In Situ Activities of Nonphotosynthetic Microorganisms. *Annual Review of Microbiology*, 39, 321–346.

III—2

Sophia Vrioni

Feral in the Face of Overtourism: Approaching Corfu From Within

Sophia Vrioni's interests span multiple fields, as she has attended seminars in managerial theory and skills, creative writing, dance, classical and traditional singing, energetic therapies, and literature. With a degree in Management Organizational Behavior, as well as in Real Estate Appraisal, her work is driven by a desire to creatively integrate scientific thinking with environmentally conscious values, believing kindness and small actions have the power to generate far-reaching change..

Abstract

This chapter reflects on the conditions under which academic and cultural practices take place on Corfu, an island shaped by long-standing cultural richness and by the pressures of contemporary tourism. Rather than approaching these conditions solely as a crisis, the text treats them as a context that calls for attentive, situated forms of collaboration and knowledge production. In dialogue with the values and methodologies of the Feral Labs network, the writer, a resident of this Ionian island, explores how local cultural actors can work together to cultivate practices that remain responsive to place, community, and ecological limits. By foregrounding local perspectives, the chapter frames Corfu as a paradigm for rethinking how protective politics can contribute to regenerative relationships in places highly impacted by the tourism industry.

Introduction

It begins quietly, with the sound of wheels on cobblestones and the hum of mopeds winding through the alleys of Corfu Town. The sea glints between the pastel facades; balconies sag with bougainvillea and laundry; cafés spill onto pavements where locals once knew everyone by name. Now, they speak of tourists, of noise, of sleepless nights. “We can’t breathe in summer,” one resident says. “We’ve become extras in our own city”. Corfu, long celebrated as a jewel of the Ionian Sea, faces a paradox of its own beauty. The island’s success as a global destination has been reversed. What was once a delicate balance between tourism and local life is tipping into crisis: overcrowding, environmental strain, inflated housing, and a slow but certain erosion of culture.

The Numbers Beneath the Sun

To understand the scope of the problem, one must first confront the scale. Corfu now records over three million visitors a year, according to Fraport’s data for 2023. The island’s airport handled 4,086,532 passengers that year—an extraordinary figure for an island of roughly 110,000 residents. In August 2024 alone, there were 6,415 international flights.

Airbnb and other short-term rental platforms have multiplied exponentially. As of May 2025, 1,609 active Airbnb listings were recorded for Corfu Town alone, with around 13,185 total short-term rental listings across the island. Athens has 14,000 listings! Go figure. About 67% are on Airbnb, the rest scattered across platforms like Vrbo and Booking (Airbtics 2025). This saturation has redefined not just tourism but housing

itself. Homes once rented to families or young locals and students are now lucrative short stays. At the same time, the number of hotels, around 415 registered in Corfu, continues to grow, with 33 five-star hotels as of July 2025, according to Euronews. Tourism is the island's dominant economic engine: 80.25% of 35,594 economically active inhabitants operate in the service sector (mostly tourism), compared to 13% in agriculture and only 6.6% in manufacturing (Hellenic Statistical Authority 2021).

The picture is clear: an island economy tilted entirely towards visitors. Everything is brought from external sources. Even tourism, which is promoted through deals mostly agreed abroad, with multinational agents earning millions from commissions. Not to mention charter flights from foreign companies landing at an airport that no longer belongs to us. And beneath all these numbers and facts, something human trembles.

The Environmental Toll: When Paradise Chokes

In the peak of summer, Corfu's narrow roads crawl with hired cars. Estimates suggest 35,000 rental vehicles operate during the season, in addition to the island's 72,600 private cars. The result is gridlock, noise, and air pollution, diesel fumes rising between Venetian buildings never meant for modern traffic.

Every day, around thousands of tourists wander the island's beaches. Each leaves behind an invisible trace: sunscreen in the sea, plastic in the sand, litres of waste water in an already overburdened system. Corfu generates an estimated 380 kg of rubbish per inhabitant per year. During summer, numbers of garbage production are nowhere to be found. In an interview, a hotel manager felt it imperative to roughly estimate the amount of garbage produced by a hotel with 2,600 guests. The numbers do not lie and give a clear picture of reality: 2,600 guests produce seven tonnes of waste per day.

At recycling centres, the numbers are no less sobering: for the same number of guests, 8.5 tonnes of glass waste are produced, as well as approximately 110 packs of carton, 2 cubic meters each, or 150 kg, roughly estimated, that are processed monthly. Another huge issue is one-use cups. Their number ranges between 13,000 to 15,000 disposable plastic cups per day (for 2,600 guests), generating 65–75 kg of plastic waste daily, unless reusable or biodegradable alternatives are adopted. Thankfully, they have been banned by law from hotels, and other solutions have emerged (such as glass indoors and reusable plastic outdoors). What about the take-away cups, though? Disposable containers are still used for coffee, juices,

spirits, food, ice cream, etc. Beaches remain lined with plastic debris, and bins at tourist sites are overflowing. A local environmental volunteer sighs: “We collect and collect, but it never ends. Every dawn, there’s more.”

The island’s infrastructure strains under this invisible weight, and garbage is being transferred to the mainland. This process costs the municipality 14,000,000 euros per year! Is this situation viable? Water shortages are now common; DEYA Corfu reports recurring supply issues each summer. Meanwhile, unregulated waste disposal, often near the sea, creates contamination risks for ecosystems as well as public health. The irony is bitter: the very beauty that draws millions here is being slowly destroyed by their presence.

A Society on the Edge

Tourism has always been a double-edged sword for Corfu. It brought jobs, connections, and cosmopolitan air, but now it threatens the fabric of community life. Local rents have skyrocketed, displacing residents who can no longer afford to live in the old town where they grew up. Young people who might have stayed are pushed outwards or off the island entirely. Teachers, nurses, and hospitality workers struggle to find housing near their workplaces. “I earn a local salary,” a nurse says, “but I compete with people who pay by the night.” Meanwhile, businesses whose clientele were the locals, i.e., grocers, cobblers, and bookshops, have been replaced by souvenir stores and cocktail bars. The rhythm of life bends entirely around the visitor’s calendar: the season dictates everything. “We don’t live year-round anymore. We survive from April to October. Then we rest, repair, and prepare to do it all again. But is this burnout really healed?” There’s also a subtler, more spiritual fatigue: the loss of belonging. When strangers fill your home, your streets, your beaches, even your silence, what remains of you? “It feels like an invasion. People come to make money from this place, and then they leave. They take the money with them and give nothing back.”

Cultural Erosion: The Disappearing Soul

Corfu’s identity, layered through centuries of Greek, Venetian, and British influence, is fading beneath a new uniformity. In the past, the island’s heart were its rituals: Easter processions, Philharmonic bands, slow café mornings, spontaneous music at dusk. Now, these are performed for cameras rather than experienced. The old town, a UNESCO World Heritage Site since 2007, groans under the weight of mass tourism. Millions of feet wear

the cobblestones smooth; even the air feels different, less community, more spectacle. “The Old Town is not sacred anymore. It’s an open mall.”

Architectural integrity is threatened too. Commercial signage and makeshift renovations clutter once-harmonious facades. The once familiar soundscape, church bells, cicadas, and quiet chatter have been replaced by constant noise: suitcase wheels, thumping music, endless chatter in languages that do not stay. Erosion is aesthetic and emotional. When locals lose daily access to their own spaces, parks, squares, even the sea, they lose part of their collective identity. “We are becoming service people in our own story,” one resident says. “They get the paradise; we get the price.”

Environmental and Emotional Pollution

In recent summers, the local press has documented the rising frustration. Anger over traffic, waste, and the treatment of residents often flares online. But there’s also despair. “I can’t walk in my town anymore without anxiety,” many mumble. “I don’t recognise it. It’s chaos.” Even nature feels cornered. In certain coves, sewage still leaks from overloaded systems. Fires, sparked by heat, neglect, and mostly by deliberate arsons to turn Natura protected areas into building plots for multinational hotels and marinas, have scarred forests and endangered the natural habitats of rare species.

The psychological cost is immense and existential questions arise. What am I doing here? Why stay when everything is turning into something else? Beneath the facts lies a raw plea for dignity, a need to be seen, not as scenery but as a community. Living in Corfu today is more than dealing with congestion, pollution, or infrastructure overload. It is a confrontation with the soul of our daily lives. The statistics, airport passengers, hotels, Airbnb listings, tons of garbage are only part of the story. They illustrate scale but cannot convey what it feels like to navigate streets you no longer recognise or to live in neighbourhoods where your presence feels peripheral to profit-driven activity. We endure this collectively. Streets once filled with greetings and quiet reflection are now crowded arenas. Public spaces, cultural sites, and natural areas are dominated by commercial interests. Traffic, noise, pollution, and the pressure of constant observation by tourists leave residents emotionally and psychologically depleted.

This tension reflects a larger societal issue. We live in an era that emphasises profitability and efficiency above human well-being. Marketing, management, and urban planning often dictate how we live, even though they ignore the needs and insights of the people who inhabit these spaces. The pressure is pervasive; subtle forms of gaslighting and

narcissistic oppression force residents to adjust their lives to external demands, eroding autonomy, community cohesion, and connection to a home place. Yet, acknowledging this is not antithetical to scientific observation. Facts, statistics, and operational data serve as a guide to thresholds, limits beyond which human, social, and environmental health suffer. A holistic approach combines these insights with the lived reality of residents, validating both measurable impacts and the emotional, cultural, and psychological dimensions of community life.

In Corfu, this holistic perspective highlights the destructive effects of high-volume tourism. Cultural interactions become transactional, public spaces are monopolised, and natural systems are strained. Daily routines are interrupted, mental well-being compromised, and traditional practices marginalised. The human soul's need for rhythm, connection, and quiet reflection becomes an essential metric alongside environmental and economic indicators.

Searching for Balance

Corfu is not hopeless. Within the crisis lies a chance to reset, to imagine a model of tourism that sustains rather than consumes. Sustainable management must integrate scientific insight with soulful awareness: balancing operational feasibility with human and ecological well-being. In effect, I would propose the following:

City ordinance and regulation: cap total tourist numbers per season and per day in the old town; prohibit tourist buses and cars in the old town and fortresses; provide permanent parking for residents with peripheral transfer systems; require cruise ships to pre-book arrivals with limited passengers (fees support infrastructure); and define city-use zones, protecting residential areas from overnight disturbances.

A permanent management body for tourism policy, one that remains consistent even when local administrations change.

Comprehensive statistical monitoring of the island's tourism and housing data that would enable rapid responses to emerging problems and maintain real-time tourism, environmental, and infrastructure data for adaptive management.

Legal enforcement and accountability on zoning, waste, public space, and environmental laws, ensuring that locals aren't left to fight alone.

Educational programmes through UNESCO for heritage management and sustainable tourism practices.

Cooperation, not antagonism, between sectors, residents, cultural practitioners, scientists, entrepreneurs, and the municipality so that everyone contributes solutions instead of shifting blame.

Evaluate proposals through the management team for innovative, practical solutions, using Agillity Management. Things evolve and change all the time.

Corfu's survival depends on collaboration and courage: the courage to say that tourism, if left unchecked, destroys the very paradise it sells. These strategies aim to restore balance, dignity, and well-being, integrating measurable operational planning with ethical and emotional awareness—allowing residents to thrive alongside sustainable tourism. “Everything in life must aim at evolution, not decay. A thirteen-hour shift is not evolution. Development comes after the shift.” Corfu's challenge is to reclaim tourism as exchange, hospitality, and stewardship rather than extraction and overload. Success depends not only on data and policy but on listening to what residents' souls, minds, and communities tell us is essential.

The Economics of Exhaustion

It's easy to praise tourism for the jobs it creates. Yet behind the glossy brochures are exhausted faces. During the high season, hospitality workers endure long-hour shifts for modest pay. How long can a human being last like this? Is a thirteen-hour shift humanly possible? How can beauty survive (continuous) burnout? Sustainability must mean more than recycling bins and green slogans. It must mean fair wages, humane hours, access to housing and healthcare. Otherwise, the island's service economy becomes an economy of servitude, profitable for a few, depleting for all. Indeed, local water, waste, and energy infrastructure is still funded largely by the same 110,000 residents, not by the millions who use it. The imbalance grows each year. “We pay for their holidays,” someone wrote, “with our peace, our patience, and our home.”

The Heart of the Matter

Every crisis is also a mirror. Corfu's story reflects a global dilemma: how do we welcome the world without losing ourselves? The answer may lie in the soul. What does my soul tell me? And the answer emerges forcefully from the very being of my existence. That I cannot live in indifference to my home. That I cannot ignore what I feel. This is the most powerful argument for sustainable tourism: not policy but love. Love for a place,

for continuity, for the dignity of coexistence. Without it, all the world's statistics mean nothing.

Towards a New Vision

If Corfu is to remain more than a postcard, it needs a new kind of vision, one rooted in respect. A vision where visitors understand they are guests in a living home, not consumers in a theme park. Where development honours the island's capacity, not its limits. Imagine arriving to Corfu where electric buses have replaced car convoys, where recycling is visible and functional, where local guides lead small groups through the history of the town rather than herding them for photos. Imagine beaches free of sunbeds, umbrellas, and beach bars, enjoying quiet nights where the sea can be heard again, where the galaxy is still visible and not hidden due to excessive lights. This is not nostalgia; it is necessity. Every statistic, every tonne of waste, every lost home, every sleepless night points to the same truth: without restraint, there is no paradise.

Epilogue:

In the Beginning, There Was Chaos, “Εν αρχή ην το χάος”

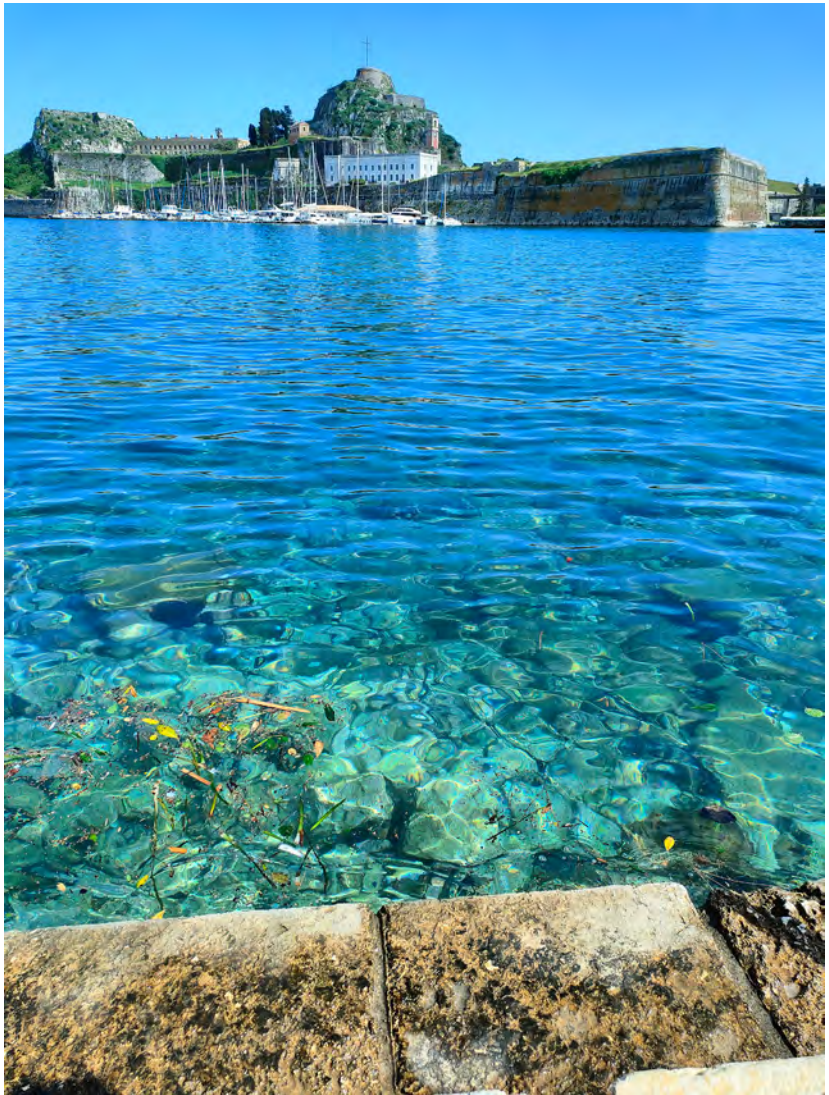
We are living in chaos! But chaos, in Greek thought, is not only destruction. It is the space from which order is born, the void that demands creation. Corfu now stands in that void, a threshold, between what it was and what it might still become. If the island can rediscover balance between visitors and residents, economy and ecology, profit and poetry, it can become a model, not a warning. A choice is still possible. At the end of the day, what matters most is how we live, how we feel, and how society supports authentic, meaningful life. Ignoring this dimension is not just impractical, it is destructive. And perhaps that is the truest message: that paradise is not something to be visited but something to be lived, protected, and loved every single day.

Acknowledgements

The author would like to thank the local hotel managers and residents in Corfu for their generosity in sharing experiences and insights through interviews conducted during 2024–2025.

Image 1.

View of the Old
Fortress from
Faliraki Beach
(Alecos Beach)
public bath in the
Old Town. Photo
credits: Dalila
Honorato.



Bibliography

Airbtics. (2025). *Annual Airbnb revenue in Corfu, Greece*. Airbtics. <https://airbtics.com/annual-airbnb-revenue-in-corfu-gr-greece/>

Airbtics. (2025, March). *Airbnb analytics: Short-term rental data* [Data dashboard, subscription-based]. Airbtics. <https://airbtics.com/airbnb-data/>

Fraport Greece. (2023). *Traffic Figures*. <https://www.fraport-greece.com/en/our-expertise/aviation/traffic-figures.html>

Hellenic Statistical Authority. (2023). *Census results of population and housing 2021: Age groups; Citizenship; Place of birth; Legal marital status; Size and composition of households (Resident population, 31.08.2023)*. Hellenic Statistical Authority. <https://elstat-outsourcers.statistics.gr/>

III—3

Martyna Groth

Manualism: Knowledge Through Touch—Tactile Boards as Tools in Artistic Pedagogy

Martyna Groth is a theatre historian, lecturer, and researcher. She teaches at the Aleksander Zelwerowicz National Academy of Dramatic Art in Warsaw, and collaborates with SWPS University. Her work has been published in *Pamiętnik Teatralny*, *Sztuka i Krytyka*, and others. Her research interests include transdisciplinary art, science and pedagogy, haptics, synaesthesia, expanded theatre, multimedia, and poetic prose.

Abstract

This chapter presents the historical yet still progressive ideas of futurist tactilism—including the manifesto, tactile boards, and tactile tests conducted by Marinetti on himself and audiences during artistic evenings—and the teaching methods inspired by these practices within the framework of the Bauhaus preliminary course (*Vorkurs*). These methods were led by Hungarian theorist and artist László Moholy-Nagy, who, together with his students, conducted elementary studies of form as well as advanced material investigations, exploring a wide range of materials—from hard to soft, smooth to rough, wet to dry. Moholy-Nagy's pedagogy aimed to maximise the biological sensory potential of the human being, striving both for its completeness and expansion. Participants of this preparatory course tested materials used in various industries (such as early plastics), learning about their qualities—structure, texture, and surface. Subsequently, using the collage method, they created original tactile boards designed for sensory exercises that sharpen the sense of touch. Notably, in 1942, Moholy-Nagy applied this method therapeutically in the rehabilitation of war veterans at the New Bauhaus in Chicago. These ideas and practices resonate strongly with contemporary needs to reconnect through direct contact with diverse materials, to develop manual skills in education, as well as to foster manual creation in DIY activities and makerspaces. The chapter valorises the hands as the primary tool of tools and the body's non-systematic, embodied knowledge—*metis*. It further examines current concepts, such as *homo hapticus*, manualism, and new materialism, which seek to uncover and cultivate the full spectrum of human receptive and creative capacities, alongside sensory equilibrium. The author also presents outcomes of her own 2024 fellowship project, “Hapticus”, which involved creating tactile objects for a pop-up exhibition.

A Hand Makes a Human¹

*Paper and scissors ... and what about the rock?
Let out free,
drawing rings on the water.
The hand stays in the lateral oblique
as if surprised by its own agen/efficien/cy.
If we could still return
to what was primary?
Touching the words and objects just like that,
simply, with fingers.
Feeling the molecules of light,
our, non-digital,
with no shining sheet of screen ...
They say that you can train the sensitivity
of the fingertips, asking each papillary
line for mindfulness².
Martyna Groth*

We are not only *homo opticus* or *homo auditus*, but also *homo hapticus*. Touch, as emphasised in the above *Manifesto of Manualism*, allows direct contact with diverse shapes, surfaces, and their properties—that is, materiality in all its complexity. It is the most primordial sense, connected to the whole body, capable of experiencing (self-)touch, although it is most commonly associated with sensitive hands. This part of the body can grasp and encompass meaning, has become a tool of labour and has shaped the development of humanity—including the emergence of writing, tools, and art. The hand and touch are our primary mediums for understanding the world.

Each upper limb has natural grooves in its inner layer, which Juhani Pallasmaa called “prenatal hieroglyphs of individuality” (Pallasmaa, 2009:27). By around the fourth month of life, these papillary lines stabilise into a consistent pattern, changing only slightly over time due to ageing. This unique pattern constitutes our individual identity, and fingerprints serve as its trace, enabling verification both in forensic studies and in biometric identification systems. Hands play a key role in tactile and haptic processes.

¹ The author thanks Prof. Ewa Klekot for the inspiration behind this title.

² The *Manifesto of Manualism* included below is an original work by the author and has not been previously published.

From a neurophysiological perspective—following Martin Grunewald, author of *Homo Hapticus: Why We Cannot Live Without the Sense of Touch* (2007)—tactile impressions arise from external physical stimuli or interactions, whereas haptic impressions occur when we actively touch someone or something, triggering a response from our nervous system. This distinction differs from the one rooted in art-historical tradition, where tactile experience is based on an engaged, touch-based relationship with the artwork, occurring within an expanded multisensory hapticity. In this paper—following Marta Smolińska—I consistently adopt the second definition (Smolińska 2020).

Moreover, in line with the non-dualistic orientation of new materialism, emerging in the 1990s, it is important to question artificial oppositions such as nature/culture, matter/mind, and human/non-human. This approach crosses disciplinary boundaries, emphasises change, and takes a particular interest in the emancipation of matter—its materiality and processes of materialisation. From the perspective of new materialism, the embodied, post-human subject engages in intra-actions with agentive and non-innocent matter. Matter is thus not a passive object but an active partner, co-creating and constituting reality. Knowledge and identity emerge within this material relationality.

This approach strengthens experimental practice, responsive to the resistance and possibilities of matter, and fosters curiosity-driven creativity. Through experiential practice and exploring the properties of different materials and tools, the body acquires asystemic knowledge, or *mētis*. This represents ingenuity and tactical intelligence, enabling control over processes, circumventing the constraints of material properties. As craft scholar Ewa Klekot notes: “‘*Mētis*’ is knowledge acquired primarily through participation and very difficult to generalise. It is largely non-linguistic, based on experience and practice that confronts us with successive, similar yet never identical situations requiring rapid adaptation. It is non-discursive bodily knowledge, which, by not formulating general laws, easily adapts to changing circumstances; knowledge inseparable from concrete experience, a profound understanding of matter as a dynamic force of change” (Klekot 2018: 85). Importantly, *mētis* is not merely located in the body but in the relationship between the body and the world.

Returning to the hand, we must recognise that finger movements activate millions of sensors in muscles, tendons, joints, hairs, and skin, sending cascades of signals to the brain, which integrates them into a coherent cognitive result. This creates a precise image of what the hand

Image 1.

László Moholy-Nagy,
Photogram, 1926. In the
collection of The Metropolitan
Museum of Art, New York,
USA.



Image 2.

László Moholy-Nagy, *Print
of Kandinsky's right hand
(enlarged)*, 1926. Illustration
published in Moholy-Nagy's
Vision in Motion, Institute of
Design, Chicago, 1947, p. 37.



has detected. The hand reaches for nearby objects; the eye surveys those at a distance. Perhaps this helps us appreciate touch, the primordial sense of our existence and development? Patriarchal, vision-centred hierarchies historically relegated touch to the lowest sensory tier, associating it with animals and women. Yet while our eyes receive roughly 80% of sensory information, engaging 10% of the cerebral cortex, they are not our sole sensory organ.

Karol Gromek and Marcelina Obarska, in the anthology of 702 fragments entitled *Histories of Touch*, attempt to reverse these proportions: “The sacred part of my body is the fingertips; I focus 80% of my attention there. They do and accomplish. I caress screens and panels with them. What changed when we stopped pressing and began barely touching surfaces? We did not become gentler. Our choreography may have gained fluidity, but the subtlety of the gesture is an illusion. In reality, we permit increasingly cruel movements. Choreography unfolds where previously there was only a gesture’s seed. I touch—it is the beginning and the end, silence” (Gromek & Obarska 2023: 5). Already, creators of the great avant-garde instigated a sensory turn in art, aiming for holistic, sometimes synesthetic, development of human sensory perception.

Futuristic Tactilism

Futurists recognised the potential of this undervalued sense: **they claimed that art should be based primarily on tactile sensations.** Filippo Tommaso Marinetti explored this experimentally, subjecting his own body to intensive training to sensitise its various parts. He developed a tactile scale with four first-degree categories and two second-degree categories, each linked to materials:

- Certain, abstract, cold touch (sandpaper, tinfoil)
- Cool, persuasive, contemplative touch (smooth silk, crepe silk)
- Exciting, warm, nostalgic touch (velvet, wool, silk and wool crepe)
- Nearly irritating, hot, decisive touch (coarse silk, frotté)
- Soft, warm, human touch (suede, horse or dog hair, human hair)
- Warm, sensual, witty, friendly touch (rough metal, soft brush, sponge, metal brush, plush, peach fuzz, bird feathers) (Gurgul 2009: 93–94)

These experiments led to tactile boards, combining different tactile values. Marinetti displayed them to audiences, encouraging interaction with

Image 3.

Robert Brownjohn,
*Tactile Board in
Molded Plastic*,
1944. Photo
published in
Moholy-Nagy's
Vision in Motion,
Institute of Design,
Chicago, 1947, p. 77.

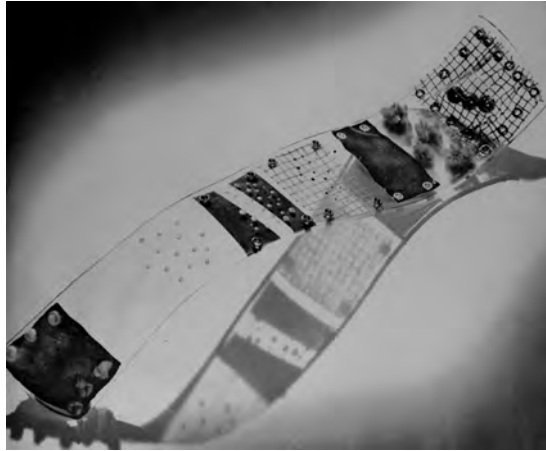


Image 4.

Richard Filipowski
and Patricia Parker,
Tactile chart, 1944.
Photo published
in Moholy-Nagy's
Vision in Motion,
Institute of Design,
Chicago, 1947, p. 69.

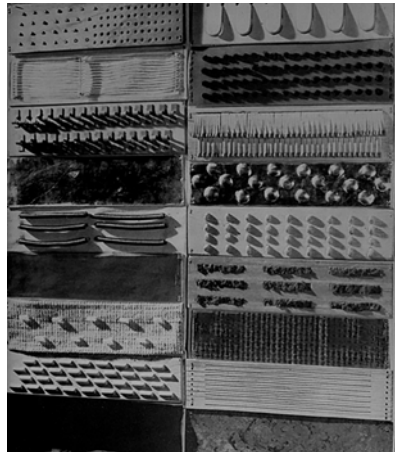


Image 5.

Hand sculptures,
photo published
in Moholy-Nagy's
Vision in Motion,
Institute of Design,
Chicago, 1947, p. 67.



various materials. The most famous board, *Soudan–Paris*, featured rough, prickly, or burning materials (frotté, sponge, sandpaper, wool, tinfoil) for Soudan, and soft, pleasant materials like silk or down for Paris. Benedetta Cappa, Marinetti's partner, created the board. Audience reception varied: the work was received coolly in France, but warmly in Italy.

Tactile boards were also used during poetic evenings of words in freedom, where a performer would express tactile sensations through vocal equivalents, ideally under a sharp light to avoid excessive abstraction. In *Il Tattilismo* (1921), Marinetti wrote that it is tactile objects, furniture, and scenography that stimulate touch. He proposed expanding the tactile experience to the theatre, where movable tapes would be used so that sequential impressions could be felt by hand and would be accompanied by music and colourful lights. While not limited to hand-based experience, touch would be activated alongside visual and auditory stimuli. Marinetti argued that identifying five senses was arbitrary, and tactilism could reveal more. Culinary theatre, engaging smell, taste, and touch, exemplified this multisensory vision.

The Human as Whole: Bauhaus

Almost concurrently, at the German Bauhaus, Hungarian constructivist László Moholy-Nagy conducted from 1923–1928 preparatory courses (*Vorkurs*) and metal workshops. His program combined slöjd principles with Montessori-inspired sensory pedagogy, emphasising polysensory education. Students focused on one sense at a time, gradually increasing stimuli. Montessori also designed tactile learning materials and exercises. “The sense of touch was developed through sorting (with eyes closed) tablets with various, uneven surfaces (fabrics, paper), or by recognizing objects enclosed in a bag (Séguin exercise)” (Feliniak 2020:3–4). Moholy-Nagy built on futurist tactilism and the work of Johannes Itten, continuing exercises in perceiving qualities, creating tactile boards, and translating tactile impressions into other media, stripped of mysticism. Though an artist-engineer rather than a craftsperson, he investigated materials—from hard to soft, smooth to rough, wet to dry—and their tactile properties. Students explored ergonomic and tactile aspects, sometimes blindfolded, translating impressions into collages or assemblages—hand sculptures—to study natural hand functions: grasping, rotating, lifting, pressing, weighing, probing holes. These three-dimensional teaching tools developed proprioceptive and haptic awareness, teaching thinking and ergonomics via bodily experience, not visual effects.

Image 6.

Blind participants testing tactile boards and hand sculptures at the New Bauhaus, published in *The Technology Review*, XLVI(1), Massachusetts Institute of Technology, November 1943.



The New Bauhaus in Chicago aimed to be an experimental collective: “Initially, the goal was for individuals to discover the full potential of their [psycho-physical] abilities, receptive and creative capacities, powers of understanding and expression. Later, experimental tasks would concern societal needs and mass production.” (Moholy-Nagy 2019: 144) Holistic development, sensory awareness, experiential knowledge, and innovative use of tactile boards in veteran rehabilitation exemplify Moholy-Nagy’s pedagogy. He connected tactility to photography, capturing the structural properties of objects both macro- and microscopically. He even experimented with camera-less processes on photosensitive paper, attributing tactile energy to light, producing subtle gradations of light and shadow via direct contact with hands or objects.

The *Hapticus* Project

In December 2024, I realised the *Hapticus* art-research project, was supported by the Polish Ministry of Culture and National Heritage. Drawing inspiration from Moholy-Nagy’s Vorkurs pedagogy, I created a bridge to contemporary artistic education, emphasising materiality, direct contact with materials, and hand-based work. A pop-up exhibition where tactile boards juxtaposed natural and artificial materials in contrastive combinations: hard/soft, cold/warm, rough/smooth, flat/three-dimensional, fluffy/

compact. Participants, blindfolded or eyes closed, explored materials and described sensations. Verbalising tactile impressions proved challenging. Then their “attempted to recreate compositions from memory, often with limited fidelity, realising how rarely they engage in nuanced manual exploration” (Brach-Czaina 2003: 59). Some boards were exhibited alongside tenfold enlarged “hand pads” filled with fragrant ingredients (lavender, rose petals, buckwheat, cotton) to hug, touch, smell, and observe, highlighting the significance of hands as tools for mastering and producing the world, including education and art.

The renaissance of haptics in the post-postmodern era aligns with new materialism and embodied experience. It reinforces the role of workshop practice and tools in material engagement, requiring asystemic bodily knowledge developed through practice. Hierarchies of the senses are reconsidered; touch is valorised. Knowledge becomes multisensory, relational, and dialogical. Tactile boards, first conceived in futurism and Montessori pedagogy and developed in Moholy-Nagy’s laboratory courses, serve as integral elements of art education programmes promoting holistic, multisensory development, material literacy, and ergonomic design. The *Hapticus* project examined contemporary tactile sensitivity, exploring how hands reproduce the unseen and emphasising manual dexterity in an age dominated by smooth screens and keystrokes.

Bibliography

Brach-Czaina, J. (2003). *Błony umysłu* [Membranes of the Mind, title translated by author]. Dowody.

Feliniak, A. (2020). Popularyzacja metody Marii Montessori na łamach czasopisma "Wychowanie Przedszkolne" 1925–1939 [Popularisation of Maria Montessori's method in the Magazine "Wychowanie Przedszkolne", 1925–1939, title translated by author]. *Przegląd Historyczno-Oświatowy*, (3–4), 97–125.

Grunewald, M. (2017). *Homo hapticus: Warum wir ohne Tastsinn nicht leben können* [Homo Hapticus: Why We Cannot Live Without the Sense of Touch, title translated by author]. Droemer Knaur.

Gromek, K., & Obarska, M. (2023). *Historie dotyku* [Histories of Touch, title translated by author]. Wydawnictwo Naukowe.

Gurgul, M. (2009). Manifest taktylizmu i teatr dotykowy [Manifest of Tactilism and Touch Theatre]. In *W drodze do gwiazd: O teatrze i dramacie włoskiego futuryzmu* [On the Way to the Stars: On the Theatre and Drama of Italian Futurism, title translated by author] (pp. 92–95). Jagiellonian University Press.

Klekot, E. (2018). *Mētis: Wiedza asystemowa* [Mētis: Tacit Knowledge, title translated by author]. *Teksty Drugie*, (1), 79–90.

Marinetti, F. T. (1922, January 11). *Il tattilismo. Il Futurismo*.

Moholy-Nagy, L. (2019). From Material to Architecture (M. Ujma, Trans.; excerpts) [original work *Von Material zu Architektur* (Bauhausbücher, Vol. 14), published by Albert Langen, 1929–1930]. *Konteksty: Polish Folk Art*, 73(4), 144–145.

Pallasmaa, J. (2009). The Mysterious Hand [Ręka tajemnicza, title translated by author]. In *The Thinking Hand: Existential and Embodied Wisdom in Architecture* (pp. 24–45). John Wiley & Sons Inc.

Preliminary course: MoholyNagy. (1938, p. 90). In H. Bayer, W. Gropius, & I. Gropius (Eds.), *Bauhaus, 1919–1928*. Museum of Modern Art; distributed by New York Graphic Society. https://www.moma.org/documents/moma_catalogue_2735_300190238.pdf

Smolińska, M. (2020). Wprowadzenie [Introduction]. In *Haptyczność poszerzona: Zmysł dotyku w sztuce polskiej drugiej połowy XX wieku i początku XXI wieku* [Expanded Hapticity: The Sense of Touch in Polish Art of the Second Half of the 20th Century and the Beginning of the 21st Century, title translated by author] (pp. 9–39). Universitas.

III—4

Camila Torralbo

Feral Energy Infrastructures

Camila Torralbo is a Chilean researcher and artist with a background in Science and Technology Studies. Her work is rooted in creative practice exploring emerging terminologies for ecological crises, energy imaginaries, and sociotechnical transitions from Global South epistemologies. Her career spans science communication, social science methodologies, and creative inquiry. Currently, she is particularly interested in how scientific knowledge and artistic methods can improve the understanding of life beyond planetary boundaries.

Abstract

Environmental degradation in the future could lead to the failure of centralised energy systems. Drawing on ruin theory within a “fourth nature”, this chapter examines social and technical responses to the collapse of the infrastructures of capitalism. The methodology combines horizon scanning and backcasting to identify possible socio-technical responses. The results suggest two pathways: viable technological islands that require substantial resources and maintenance, and the introduction of feral energy infrastructures (FEI) as a framework. Habitability in most communities will be characterised by repair, reuse, and energy sharing as standard practices. FEIs are viewed both as emergency solutions and as social-political processes that reshape justice and energy independence to survive the inequality and climate crisis.

Introduction

The evidence regarding the state of the Earth system and the deficiencies in climate governance invites us to reflect on habitability in the face of negative futures. We revisit Ana Tsing’s typologies: 1) first nature; 2) ecological relationships that include humans; and 3) what survives despite capitalism (Tsing 2017). Here, we propose a thought that imagines a fourth nature, interpreted as the reactions to capitalist ruins.

We have exceeded seven of the nine planetary boundaries, with irreversible damage, placing humanity in a “high-risk zone” (Sakschewski et al. 2025). This crossing of boundaries is reflected in increases in global average temperatures, record-breaking extreme events, glacier retreat, and variations in precipitation patterns (WMO 2025). Socially, the main future global risks identified are armed conflicts (23%), extreme weather phenomena (14%), and geoeconomic confrontation (8%); risks that could intensify synergistically (World Economic Forum 2025). The impact of extreme weather conditions has caused failures in energy infrastructure due to droughts, high temperatures, storms, floods, and wildfires (Brandstätt 2025) (see Image 1).

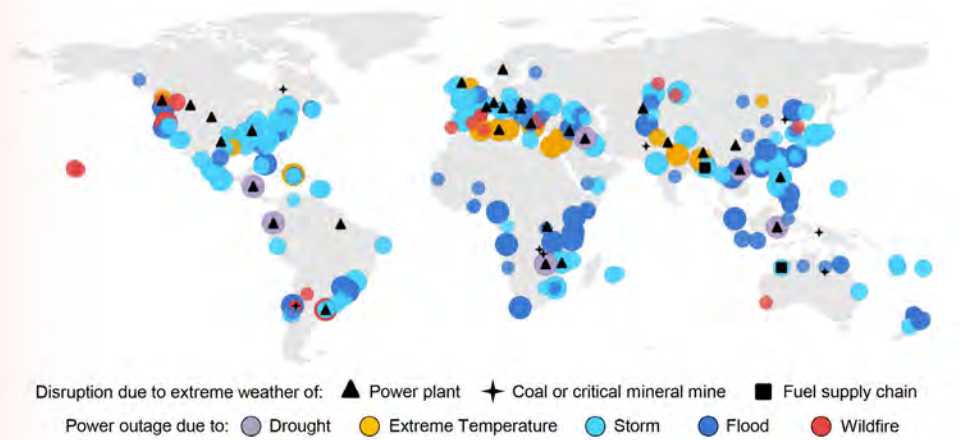


Image 1.

World operational disruption of energy infrastructure caused by extreme weather events. Illustration credits: Camila Torralbo (2026) using AI-based generative tools and edited in Canva.

Climate change also has cumulative effects, such as “warming commitments”, which could manifest in the future and include the accumulated emissions from existing fossil fuel energy infrastructure. Between 2010 and 2060, these infrastructures will generate 496 gigatonnes of CO², resulting in an average warming of 1.3°C without new construction (Davis et al. 2010). The above evidence shows that catastrophic climate impacts at the global level will occur regardless of the climate and energy policies in place.

The evidence regarding tipping points and widespread degradation should motivate us to develop scientific practices that take environmental ruin as a contextual framework (Ureta 2020). Prioritising quantitative, prospective technological visions of the future requires theoretical research and methodological creativity in future research on science, technology, and society as a field of reflection, co-creation, and imagination of the social and human future (Pink 2015). Although the future is unpredictable, it is important to consider negative scenarios. This helps us to imagine different ways of inhabiting and to reflect on fourth-nature energy infrastructures, where feral reactions against the ruins of capitalism emerge as an alternative for survival.

Theoretical Framework

The theory of ruin initially focused on decaying architecture. In the current context of the ecological crisis, it is expanded into a critique in which carbon-intensive infrastructures turn nature itself into ruin (Bennett 2020; Tsing 2024, 2015; Tsing et al. 2017). Transposed to energy systems, it has been adapted to model the risk of total energy depletion, system collapse, infrastructural failure, uncertainty, and fluctuations in supply and demand (Manzoor et al. 2020).

Despite scientific and climate crisis information available and the efforts of the energy sector, the energy transition is underway, but not at the speed necessary for a global energy system of variable renewable energies. Fossil fuels still account for 87% of the energy system, with oil as its main source. Renewable and nuclear energies together made up only 13.5% in 2024 (Energy Institute 2025).

According to energy techno-optimism visions of the future, technological progress will be maintained and the challenges of the energy transition will be resolved through the modernisation and integration of electrical systems with artificial intelligence (Couture & Millstein 2021; IEA 2025), where smart grids and digital twins will enable the perfect optimisation of complex energy systems (Danish & Senjyu 2023; Szpilko et al. 2024). However, these solutions share a vital characteristic: they depend on the stability of the underlying infrastructure, the availability of increasingly fragile high-tech resources (Danish & Senjyu 2023; Liu et al. 2022), and exposure to social and environmental variabilities that have yet to be tested by the energy industry.

Contrary to techno-optimistic visions, the energy sector warns of potential infrastructure failures. Energy vulnerability could be caused by prolonged droughts driven by climate change, which would reduce water levels in basins such as the Andes, the Himalayas, and East Africa, affecting hydroelectric plants. High temperatures during heatwaves raise electricity consumption and test already vulnerable networks. Infrastructure designed for non-extreme climates could be exposed to heatwaves, storms, and floods due to rising sea levels, which would damage thermal and nuclear power plants and networks (IEA 2024; WEF Global Risks Report 2025).

It is already clear that a possible failure in the infrastructure of energy systems could be caused by centralised and fragile electrical networks. Cascading failures are expected, which would be not only amplified in NaTech events (natural and technological hazards) (Di Maio et al. 2022).

Furthermore, in centralised systems, the risk of collapse rises, since the ability to redirect power flows is mainly local.

An additional critical factor is the “curtailment” of renewable energy, which occurs when more energy is generated than the system can consume or store and must therefore be discarded (Breyer et al. 2022; Liu et al. 2022). The lack of massive investment causes serious frequency regulation problems; when renewable energies are widely adopted, the mechanical inertia of the grid (from rotating synchronous generators in coal and gas plants) decreases dramatically (Sfakianaki et al. 2025; Fotis et al. 2025). This makes the grid vulnerable to rapid demand fluctuations and requires costly and sophisticated ancillary services (Sfakianakis et al. 2025; Bonilla 2023). Furthermore, failures can occur due to voltage collapse when transmission constraints are violated (Witthaut 2016), usually preceded by a false sense of security near critical bifurcation points (Guelpa et al. 2019). When a transmission line fails, the power shifts to alternative lines, which, if close to their limit, can become overloaded, fail, and extend the collapse (Witthaut 2016). Another reason for a potential failure is the vulnerability of storage, which accounts for only 4.6% of the total capacity and depends on supply chains of critical minerals tending towards resource nationalism or econationalism (Koch 2019; Arshad 2014).

In addition to infrastructural failures, there is the failure of energy policy, understood as the non-fulfilment of local, national, and international energy and climate objectives, as well as the failure to deliver consistent results throughout the energy lifecycle (Sokołowski & Heffron 2021). In 2024, global energy policies demonstrate non-compliance with the principles of energy justice at the distributive, procedural, restorative, recognition, and cosmopolitan levels (Heffron & Sokołowski 2024).

The increase in extreme weather events reveals the vulnerability of the energy system and its infrastructures, suggesting that its failure is structural, not circumstantial. Climate change has already “won” in terms of trajectory (Ripple et al. 2025), but this does not mean the energy transition has been abandoned. Opposition to and conflicts over the adoption of renewable technologies have yet to be overcome, even though they are critical for countries in the Global South, who face structural challenges due to their dependence on fossil fuels and subsidies (Araujo-Vizuete & Robalino-López 2025). High-performance renewable energies will operate, but increasingly in isolation, with high levels of maintenance and in contexts of stability and abundance. A possible habitability where survival becomes the next currency of exchange.

Further research must be expanded to include a future characterised by high inequality in living conditions and survival. Resilience mechanisms must be envisaged to address technical limitations, given that not all advanced technologies will be deployed globally. From a forward-looking perspective, we will explore a negative-energy scenario for a fourth-nature future (Tsing 2015).

Methodology

From a future research perspective in science, technology, and society (STS), the emphasis was on the need for a critical and experimental inquiry into the plausibility of negative futures in the field of energy. The aim was to identify emerging socio-technical tensions and plausible energy infrastructures for the post-1.5°C context. In the initial phase, a horizon scanning of recent academic literature (2021–2025), technical reports from international agencies, and grey literature was conducted. Through targeted searches using key terms such as “energy technology”, “energy systems”, and “infrastructural failure”, the literature shows projections and describes an increase in extreme weather events, technological disruptions, and social transformations that could influence the evolution of energy infrastructures.

In the second stage, a critical review and reconstruction of territorial design alternatives for minimum viable options and low-dependence technologies were carried out (Bonilla 2023; Tornel 2023). Using backcasting, cases of decentralised energy infrastructures that had been useful in isolated, rural, and impoverished contexts were selected (Bonilla 2023; Tornel 2023); through these, a prospective and speculative illustration of the transition towards subsistence energy technologies was provided, taking as a criterion that the energy infrastructures be feasible to develop in contexts of: (1) an increase in extreme weather phenomena post-1.5°C, (2) a plausible failure in centralised energy systems and associated infrastructure; (3) a high risk to human mobility; (4) a widespread shortage of materials and resources; (5) minimal use of number of materials for the construction and maintenance of infrastructure; and (6) the possibility of local maintenance.

Five energy alternatives are described and visualised that enable survival in hostile environments based on the following variables: (i) description of use; (ii) minimal number of materials for construction; (iii) advantages in the event of an energy crisis; (iv) limitations in the event of an energy crisis; and (v) social benefits. The literature review and methodological phases complement each other in an iterative cycle, in which findings inform the development of future scenarios and enable the

exploration of prospective technical alternatives for selecting crisis-system cases relevant to survival energy infrastructure. In this way, prospective exploration challenges and refines the theoretical categories and technical possibilities (Heffron & Sokołowski 2024; Szpilko et al. 2024).

Results

The false hope being propagated by the energy sector techno-optimists is that they will address the ecological crisis and lead us to a better future with resilient, efficient renewable energy for all. However, the disparity between northern and southern countries and populations, with centuries of development separating them, means that impoverished populations must go through intermediate stages to reach the same level of technology; thus, isolated islands of technology are created (Schumacher 1973).

After prospectively analysing the climate crisis and the possibility of infrastructural failure in a post-1.5°C world, the research highlights the techno-optimistic attitude of energy systems in the face of future climate challenges. This narrative seems to consider inconceivable any future without the established success of “electricity, steel, cement, an almost perfect organisation, sophisticated accounting (preferably with computers), not to mention a highly developed infrastructure of transport and other public services” (Schumacher 1973).

Prospectively, the destruction of modern energy infrastructure is plausible in the face of potential negative scenarios related to climate change, which could cause failures in centralised energy systems and their associated infrastructure. In response, two alternative autonomous subsistence systems may emerge, performing energy supply functions through decentralised and adaptive mechanisms (Heffron & Sokołowski 2024). These alternatives may emerge simultaneously but differ in the scale of people they sustain, the technology they can access, the level of habitability they can maintain and the exposure to climate and nature of their inhabitants. The first system is a series of technological islands that operate as a territorial design of minimum viable units, where the goal is to recreate the habitable experience of life before the 1.5°C threshold, but this cannot always be achieved. Its small population will require advanced and expensive technology for sustenance. Its socio-technical development will focus on maintenance, security and isolation.

Feral Energy Infrastructures

The second and larger future system will be exposed to an adverse climate context where the design of minimal viable territories will not be available. Without access to high-tech-based habitability, security, decentralised and adaptive energy justice, this population of this system will react in a feral manner to the ruins of energy capitalism through feral energy infrastructures (FEI). The infrastructural feralisation will enable functional resilience via various routes (Gering et al. 2019) to ensure survival.

The metaphor of technical and social feralisation allows for an explanation of the shift from an energy-dependent society (Boyer 2019) to a predominantly feral one. The structural incapacity of the centralised energy system to withstand the climate crisis suggests the emergence of various survival energy technologies that enable minimum habitability in hostile environments through associativity, repair, reuse, and energy imagination in crisis contexts.

Moser Lamp (Lighting)

The Moser lamp is a passive and easy-to-construct technology; it uses refraction to illuminate dark spaces. A transparent plastic bottle must be installed on the ceiling, then filled with water and a few drops of chlorine to diffuse sunlight into interior spaces, such as dark spaces or rooms without windows or access to the electrical grid, providing daytime illumination of 40 to 60 W (Varela Terreros & Espinoza Díaz 2020; Wang et al. 2015). The materials required to build a Moser lamp are: transparent PET bottle (1–2 L) filled with clean water; two to four drops of chlorine to prevent algae growth; support or ceiling mount (sleeve or airtight joint); putty or sealant; aesthetic interior diffuser (optional).

The advantage of the Moser lamp technology is that it's extremely cheap, safe, and locally reproducible. It is estimated that the cost for a household illuminated with ten lamps is less than 0.10 USD (Varela Terreros & Espinoza Díaz 2020). It requires no technical maintenance and improves lighting without electricity or fuel, enabling energy savings and reduced emissions. The implementation of this technology is quick at the community level. It can be manufactured with fewer than five items, making it an alternative in a long-term energy crisis. Once installed, it provides permanent interior lighting. Its limitations during an energy crisis are that it only functions during the day and that its efficiency depends on sunlight and the orientation of the roof. In other words, it does not meet the requirements for nocturnal lighting. Additionally, it can be damaged by

rain if the seal between the bottle and the roof is not adequate.

It has been observed that Moser lamps have caused a reduction in the use of kerosene lamps, candles, or other flammable fuels, which has, in turn, improved the health and safety of those who use them. The plastic bottles needed for its construction can be obtained through the reuse and recycling of materials for energy solutions aimed at isolated or low-income communities (Varela Terreros & Espinoza Díaz 2020). It is a technology that enables community empowerment by teaching the use of the device; this is highlighted through initiatives by the MyShelter Foundation and the One Litre of Light programme, which have adapted this technology for self-built homes and marginalised neighbourhoods (Herrera et al. 2017). Reportedly, the lamp is used in Brazil, the Philippines, India, Bangladesh, Tanzania, Argentina, and Fiji (González 2017). Alfredo Moser, who invented the so-called “poor man’s lamp” after experiencing frequent power outages in Uberaba (southern Brazil), has said: “It doesn’t cost anything, and it’s impossible to get an electric shock.” (Zobel 2013)

Image 2.

A Moser lamp.

Illustration credits:

Camila Torralbo
(2026) using AI-based
generative tools and
edited in Canva.



Solar Oven (Cooking)

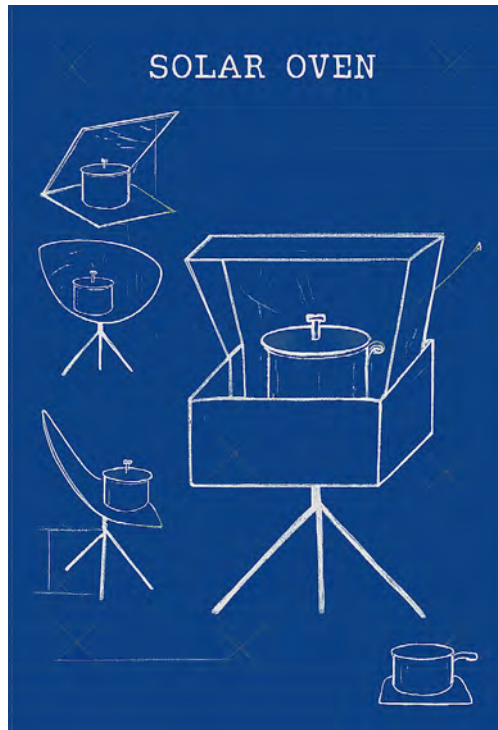
This device functions as a thermal receiver, concentrating and retaining solar radiation within an insulated cavity. It operates on the principles of the greenhouse effect, primarily for cooking, boiling, pasteurising, and drying foodstuffs (Regattieri et al. 2016). It can reach temperatures between 80 and 200°C, depending on its design, materials, and radiation levels. The materials required to build the Solar oven: insulated box (wood, sheet metal, or fibre); thermal resistance material (wool, cork, or polystyrene; black interior paint (absorbent and dark); aluminium reflectors, mirror, aluminium foil; glass or acrylic for the transparent cover; dark pots, grids, thermometer (optional); putty or sealant. The basic design with a simple box is easy to construct with common tools.

The production cost is very low relative to the level of operation, as the oven does not consume fuel and is safe to use, as it does not have open flames or produce emissions. This simple, economical, and effective

Image 3.

A Solar oven.

Illustration credits:
Camila Torralbo
(2026) using AI-based
generative tools and
edited in Canva.



device does not rely on conventional fuels or electricity, making it an alternative during times of scarcity or energy crises (Misra et al. 2023). It can store thermal energy using stones, oil, or metal, extending its functionalities into the night and reducing dependence on solar energy (Silva et al. 2025; Anilkumar 2021; Coccia et al. 2020). Although the performance decreases on very cloudy days, the oven still works reasonably well under variable weather conditions; however, it requires longer cooking times than traditional methods (Silva et al. 2025). As it does not run on conventional fuels, it significantly reduces fuel costs and exposure to indoor smoke, improving food safety through affordable cooking and pasteurisation (Nandwani 1996). Minimal maintenance and simple manufacturing promote local autonomy, the manufacturing of this type of technology empowers low-income communities, whose members receive environmental and technical education through educational workshops and community projects for energy self-sufficiency. This example was drawn from cooking and family micro-enterprises in areas such as Catamarca (Argentina).

Swamp Cooler (Cooling)

This self-cooler operates on the principle of direct evaporation, in this process, energy passes through a moist medium, cooling the airflow in spaces (Heidari et al. 2019). Its effectiveness depends on ambient humidity. The materials required to build a swamp cooler: plastic or metal cooler; evaporation tube; water (inside); electrically powered fan (solar panel is also an option); putty or sealant.

The swamp cooler is a domestic or community solution for cooling residential spaces, greenhouses, or warehouses. It increases humidity in extremely dry environments, has a very low operating cost, as it consumes less electricity than traditional vapour compression air conditioners (Haile et al. 2024), and its maintenance is simple. This is an efficient, accessible cooling solution with low energy consumption, suitable for arid regions (Heidari et al. 2019; Mekonen et al. 2023), which nevertheless comes with some limitations: its effectiveness decreases as humidity increases (Haile et al. 2024). The cooler requires energy from solar panels, batteries, or other sources, in addition to a constant water supply, which may be limited in some drought-affected regions (Khayal & Elagab 2022). As a benefit, it reduces exposure to extreme heat, cuts energy costs, and does not use chemical refrigerants, thereby reducing emissions (Cuce & Riffat 2016). It can be installed in homes, community centres, public institutions, schools, health centres, and in enterprises (Mekonen et al. 2023).

Image 4.

A Swamp cooler.

Illustration credits:

Camila Torralbo

(2026) using AI-based

generative tools and

edited in Canva.



DIY Generator Bikes (Electricity Generation)

The generator bike is the most complex system of those reviewed here, as it converts mechanical power from pedalling (human energy) into electrical energy. A stationary bicycle connected to a generator can charge batteries, light a bulb, or power small appliances, such as mobile phones or radios (Vanmore et al. 2019). The materials required to build a generator bike: bicycle or static structure; electric generator (dynamo, alternator, or motor); regulator/rectifier and charge controller; battery bank (12 V lead-acid or lithium); transmission (belt, chain) and mechanical support.

In times of crisis, these bikes can be built with only a few materials and generate decentralised energy without polluting fuels. They're a viable solution that significantly reduces energy costs and can provide energy in isolated areas or in critical situations (Lal & Manjul 2022), where they promote energy resilience, as they do not rely on environmental factors

such as radiation to operate but solely on human effort (Mechtenberg et al. 2012). A person can generate between 50 W and 200 W of power, which is insufficient for higher loads (López-Castrillón 2021). A medium level of implementation is required to build the bike; in other words, the instructions are simple but require basic knowledge of electronics to integrate batteries (Lal & Manjul 2022). As a social benefit, this technology can be implemented in educational and community programmes with the triple purpose of energy generation, energy and environmental education, and promotion of physical exercise (Mechtenberg et al. 2012).

Image 5.
DIY generator bikes.
Illustration credits:
Camila Torralbo
(2026) using AI-based
generative tools and
edited in Canva.



Conclusion

The failure of centralised energy infrastructures in the face of extreme weather events is a structural possibility that forces a rethinking of the energy transition beyond techno-optimism. Given the fragility of global supply chains and the insufficient pace of decarbonisation, two plausible trajectories emerge: small technological islands that maintain habitable levels through high investment and maintenance; and a social majority that relies on feral energy infrastructures (IEF) based on subsistence technologies.

Feral energy infrastructures (FEI) are characterised by low material input, the possibility of local maintenance, repair, and reuse, and the practical solutions they provide in terms of lighting, cooking, cooling, and small-scale electricity generation. Above, we have described a few such alternatives: the Moser lamp, solar ovens, swamp coolers, and generator bicycles. These reduce dependence on fossil fuels and critical supply chains but have clear operational limitations, such as daytime operation, limited energy productivity, water requirements, and the technical knowledge required for assembly.

Beyond its technical dimension, energy feralisation is also a social and political process that can reinforce community autonomy and empowerment, which accentuates inequalities in access to habitable environments in critical settings. It therefore highlights the need for direct research and public policies on evaluating the scalability and material limits of future technologies, and on strengthening local maintenance capacities and participatory governance. Likewise, in order to avoid exacerbating patterns of energy injustice, it is important to design technical and social interventions that incorporate potential negative futures, and to consider who will be excluded from the energy transition and what their habitable alternatives will be. In sum, feral energy infrastructures (FEI) serve as both a metaphor and a tool: they enable us to not only imagine and anticipate forms of energy survival amidst capitalist ruin but also to guide practical priorities of justice, cooperation, and resilience for future habitable spaces.

Acknowledgments

This research is funded by the Beca de Doctorado Nacional 2023 call granted by the Agencia Nacional de Investigación y Desarrollo (ANID), Subdirección de Capital Humano, Government of Chile, Folio No. 16856.

Bibliography

- Anilkumar, B., Maniyeri, R., & Anish, S. (2021). Optimum Selection of Phase Change Material for Solar Box Cooker Integrated with Thermal Energy Storage Unit Using Multi-Criteria Decision-Making Technique. *Journal of Energy Storage*, 40. <https://doi.org/10.1016/j.est.2021.102807>
- Araujo-Vizuite, J., & Robalino-López, A. (2025). A Systematic Roadmap for Energy Transition: Bridging Governance and Community Engagement in Ecuador. *Smart Cities*, 8(3), 80. <https://doi.org/10.3390/smartcities8030080>
- Arshad, A. (2024, September 13). *The Rise of Eco-Nationalism: Environmental & Nationalism Intersection in Contemporary Politics*. Modern Diplomacy. <https://modern diplomacy.eu/2024/09/13/the-rise-of-eco-nationalism-environmental-nationalism-intersection-in-contemporary-politics/>
- Arshad, R., Khan, H. A., De Rosa, R., Minervini, D., & Scotti, I. (2024). Applying Social Practice Theory to Understand User Demand in Rural Microgrids. In *Proceedings of the 2024 IEEE Global Humanitarian Technology Conference (GHTC)* (pp. 143–150). IEEE. <https://doi.org/10.1109/GHTC62424.2024.10771519>
- Arshad, S., & Baten, M. A. (2024). Empowering Low-Income Communities with Sustainable Decentralized Renewable Energy-Based Mini-Grids. *Energies*, 16(23), 7741. <https://doi.org/10.3390/en16237741>
- Bonilla, O. (2023). Multi-Functional Energy Storage System for Supporting Solar PV Plants and Host Power Distribution System. *Journal of Energy Storage*, 73, 108933. <https://doi.org/10.1016/j.est.2023.108933>
- Boyer, D. (2019). *Energopolitics: Wind and Power in the Anthropocene*. Duke University Press.
- Breyer, C., et al. (2022). On the History and Future of 100% Renewable Energy Systems Research. *IEEE Access*, 10, 78176–78225. <https://doi.org/10.1109/ACCESS.2022>
- Brandstätter, C. (2025). *Energy Sector Resilience to Extreme Weather and Natural Hazards*. International Energy Agency. Renewables Grid Initiative. https://renewables-grid.eu/app/uploads/2025/11/8-202511_-CBA-Workshop_PPT_IEA.pdf
- Coccia, G., Aquilanti, A., Tomassetti, S., Comodi, G., & Di Nicola, G. (2020). Design, Realization and Testing of a Portable Solar Cooker Coupled With a PCM-Based Thermal Energy Storage System Using Erythritol. *Solar Energy*, 201, 530–540. <https://doi.org/10.1016/j.solener.2020.03.031>
- Cuce, P., & Riffat, S. (2016). A State-of-the-Art Review of Evaporative Cooling Systems for Building Applications. *Renewable and Sustainable Energy Reviews*, 54, 1240–1249. <https://doi.org/10.1016/j.rser.2015.10.066>
- Danish, M. S. S., & Senjyu, T. (2023). AI-Enabled Energy Policy for a Sustainable Future. *Sustainability*, 15, 7643. <https://doi.org/10.3390/su15097643>
- Davis, S. J., Caldeira, K., & Matthews, H. D. (2010). Future CO₂ Emissions and Climate Change from Existing Energy Infrastructure. *Science*, 329(5997), 1330–1333. <https://doi.org/10.1126/science.1188566>
- Di Maio, F., Tonicello, P., & Zio, E. (2022). A Modelling and Analysis Framework for Integrated Energy Systems Exposed to Climate Change-Induced NaTech Accidental Scenarios. *Sustainability*, 14(2), 786. <https://doi.org/10.3390/su14020786>
- Energy Institute. (2025). *Statistical Review of World Energy 2025*. <https://kpmg.com/es/es/informes-publicaciones/2025/07/statistical-review-world-energy-2025.html>
- Farghali, M., et al. (2023). Strategies to Save Energy in the Context of the Energy Crisis: A Review. *Environmental Chemistry Letters*, 21, 2003–2039. <https://doi.org/10.1007/s10311-023>
- Fotis, G., Maris, T. I., & Mladenov, V. (2025). Risks, Obstacles and Challenges of the Electrical Energy Transition in Europe: Greece as a Case Study. *Sustainability*, 17(12), 5325. <https://doi.org/10.3390/su17125325>
- Gering, E., Incorvaia, D., Henriksen, R., Conner, T., Getty, E., & Wright, J. (2019). Getting Back to Nature: Feralization in Animals and Plants. *Trends in Ecology & Evolution*, 34(12), 1137–1151. <https://doi.org/10.1016/j.tree.2019.07.018>
- González, J. H. (2017). *El litro de luz, agua que ilumina*. Revista De Acuerdo. <https://www.revistadeacuerdo.org/2017/05/17/el-litro-de-luz-agua-que-ilumina>

- Guelpa, E., Bischi, A., Verda, V., Chertkov, M., & Lund, H. (2019). Towards Future Infrastructures for Sustainable Multi-Energy Systems: A Review. *Energy*, 184, 2–21. <https://doi.org/10.1016/j.energy.2019.06>
- Haile, M., Garay-Martínez, R., & Macarulla, A. (2024). Review of Evaporative Cooling Systems for Buildings in Hot and Dry Climates. *Buildings*, 14(11), 3504. <https://doi.org/10.3390/buildings14113504>
- Heffron, R. J., & Sokołowski, M. M. (2024). Resolving Energy Policy Failure: Introducing Energy Justice as the Solution to Achieve a Just Transition. *Energy Policy*, 187, 114042. <https://doi.org/10.1016/j.enpol.2024.114042>
- Heidari, A., Roshandel, R., & Vakiloroya, V. (2019). An Innovative Solar-Assisted Desiccant-Based Evaporative Cooling System for Co-Production of Water and Cooling in Hot and Humid Climates. *Energy Conversion and Management*, 185, 396–409. <https://doi.org/10.1016/j.enconman.2019.02.015>
- Herrera Vega, S. J., Gómez Castro, K., Pérez-Urbe, R. I., & Ortiz Novoa, R. L. (2017). *CASO: Un litro de luz* [Working paper]. <https://www.researchgate.net/publication/319944714>
- Ibekwe, K. I., Ohenhen, P. E., Chidolue, O., Umoh, A. A., Ngozichukwu, B., Ilojiana, V. I., & Fafure, A. V. (2024). Microgrid Systems in U.S. Energy Infrastructure: A Comprehensive Review. *World Journal of Advanced Research and Reviews*, 21(1), 973–987. <https://doi.org/10.30574/wjarr.2024.21.1.0112>
- International Energy Agency. (2024). *World Energy Outlook 2024*. <https://www.iea.org/reports/world-energy-outlook-2024>
- International Energy Agency. (2025). *World Energy Outlook 2025*. <https://iea.blob.core.windows.net/assets/5306bae2-1f99-402f-8d14-542bfa0ae96e/WorldEnergyOutlook2025.pdf>
- Jamil, M., Shahzad, M., Xu, B., Imran, M., Ng, K., Zubair, S., Markides, C., & Worek, W. (2023). Energy-Efficient Indirect Evaporative Cooler Design Framework: An Experimental and Numerical Study. *Energy Conversion and Management*, 292, 117377. <https://doi.org/10.1016/j.enconman.2023.117377>
- Keys, P., Galaz, V., & Folke, C. (2025). *The Dynamics of Polycrisis: Lessons From 50 Years of Global Shocks*. Stockholm Resilience Centre. <https://www.stockholmresilience.org/research/research-stories/2025-08-19-the-dynamics-of-polycrisis-lessons-from-50-years-of-global-shocks.html>
- Khayal, O., & Elagab, E. (2022). Uses, Advantages and Limitations of Evaporative Coolers. *International Journal of Engineering Applied Sciences and Technology*, 7(6), 137–143. <https://doi.org/10.33564/ijeast.2022.v07i06.010>
- Kirshner, J., Sarpong, C. A., & Sovacool, B. K. (2024). Community Mini-Grids and the Resilience of Ostrom's Design Principles: A Causal Loop Analysis of a Pico-Hydro System in Rural Uganda. *Energy Research & Social Science*, 111, 102871. <https://doi.org/10.1016/j.erss.2023.102871>
- Koch, N. (2019). Resource Nationalism. *Progress in Human Geography*, 43(4), 611–631. <https://doi.org/10.1177/0309132518781497>
- Lal, R., & Manjul, R. R. (2022). Eco-Peddler Bicycle Power Generation and Feasibility Analysis. *International Journal of Advance Research and Innovation*, 10(2), 50–56. <https://doi.org/10.51976/ijari.1022208>
- Liu, J., Huang, Z., Fan, M., Yang, J., Xiao, J., & Wang, Y. (2022). *Future Energy Infrastructure, Energy Platform, and Energy Storage*. *Nano Energy*, 104, 107915. <https://doi.org/10.1016/j.nanoen.2022.107915>
- López-Castrillón, W., Sepúlveda, H. H., & Mattar, C. (2021). Off-Grid Hybrid Electrical Generation Systems in Remote Communities: Trends and Characteristics in Sustainability Solutions. *Sustainability*, 13(11), 5856. <https://doi.org/10.3390/su13115856>
- Mechtenberg, A. R., Borchers, K., Miyingo, E. W., Hormasji, F., Hariharan, A., Makanda, J. V., & Musaazi, M. K. (2012). Human Power (HP) as a Viable Electricity Portfolio Option Below 20 W/Capita. *Energy for Sustainable Development*, 16(2), 125–145. <https://doi.org/10.1016/j.esd.2011.12.006>
- Mekonen, T., Delele, M., & Molla, S. (2023). Development and Testing of Solar Powered Evaporative Air-Cooling System with an Improved Performance. *Cogent Engineering*, 10(1). <https://doi.org/10.1080/23311916.2023.2178115>

- Misra, N., Anand, A., Pandey, S., Kant, K., Shukla, A., & Sharma, A. (2023). Box-Type Solar Cookers: An Overview of Technological Advancement, Energy, Environmental, and Economic Benefits. *Energies*, 16(4), 1697. <https://doi.org/10.3390/en16041697>
- Nandwani, S. (1996). Solar Cookers: Cheap Technology with High Ecological Benefits. *Ecological Economics*, 17, 73–81. [https://doi.org/10.1016/0921-8009\(96\)00021-3](https://doi.org/10.1016/0921-8009(96)00021-3)
- Pink, S. (2025, October 16). *Designing Human Futures: Briefing With Sarah Pink & Laurent Haug* [Video]. YouTube. <https://youtu.be/4BbPS05BKdk>
- Regattieri, A., Piana, F., Bortolini, M., Gamberi, M., & Ferrari, E. (2016). Innovative Portable Solar Cooker Using Packaging Waste from Humanitarian Supplies. *Renewable and Sustainable Energy Reviews*, 57, 319–326. <https://doi.org/10.1016/j.rser.2015.12.199>
- Ripple, W. J., Wolf, C., Mann, M. E., Rockström, J., Gregg, J. W., Xu, C., & Gleick, P. H. (2025). The 2025 State of the Climate Report: A Planet on the Brink. *BioScience*, 75(12), 1016–1027. <https://doi.org/10.1093/biosci/biaf149>
- Sakschewski, B., et al. (2025). *Planetary Health Check 2025: A Scientific Assessment of the State of the Planet*. Potsdam Institute for Climate Impact Research.
- Saxena, A., Cuce, E., Tiwari, G., & Kumar, A. (2020). Design and Thermal Performance Investigation of a Box Cooker with Flexible Solar Collector Tubes: An Experimental Research. *Energy*, 206, 118144. <https://doi.org/10.1016/j.energy.2020.118144>
- Schumacher, E. F. (1973). Intermediate Technology. In *Small Is Beautiful: A Study of Economics as if People Mattered* (pp. 121–136). Blond & Briggs.
- Silva, J., Serrano, L., Martins, P., Ferreira, H., Váz, P., & Guerra, E. (2025). A Case Study on the Efficiency of a Solar Oven: An Experimental Approach. *Sustainability*, 17(2), 428. <https://doi.org/10.3390/su17020428>
- Simpson-Porco, J. W., Dörfler, F., & Bullo, F. (2016). Voltage Collapse in Complex Power Grids. *Nature Communications*, 7, 10790. <https://doi.org/10.1038/ncomms10790>
- Sokołowski, M. M., & Heffron, R. J. (2021). Defining and Conceptualizing Energy Policy Failure: The When, Where, why, and how. *Energy Policy*, 161, 112745. <https://doi.org/10.1016/j.enpol.2021.112745>
- Szpilko, D., Fernando, X., Nica, E., Budna, K., Rzepka, A., & Lăzăroiu, G. (2024). Energy in Smart Cities: Technological Trends and Prospects. *Energies*, 17(24), 6439. <https://doi.org/10.3390/en17246439>
- Tornel, C. (2023). Decolonizing Energy Justice from the Ground Up: Political Ecology, Ontology, and Energy Landscapes. *Progress in Human Geography*, 47(1), 44–65. <https://doi.org/10.1177/03091325221146313>
- Tsing, A. L. (2015). *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton University Press.
- Tsing, A. L. (2024). *Living in Ruins: Multispecies Landscapes in the Anthropocene*. Virus Editorial.
- Tsing, A. L., Swanson, H. A., Gan, E., & Bubandt, N. (Eds.). (2017). *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*. University of Minnesota Press.
- Ureta, S., Lekan, T., & von Hardenberg, W. G. (2020). Baseline Nature: An Introduction. *Environment and Planning E: Nature and Space*, 3(1), 3–19. <https://doi.org/10.1177/2514848619898092>
- Vanmore, S., Khandekar, D., Padval, J., & Patil, P. (2019). Bicycle Power Generation. *International Journal for Research in Applied Science & Engineering Technology*, 7(2), 799–801. <https://doi.org/10.22214/ijraset.2019.2121>
- Varela Terreros, N., & Espinoza Díaz, D. (2020). Roof Lighting with Recycled Plastic Bottles. In M. J. Hermoso-Orzáez & A. Gago-Calderón (Eds.), *Energy Efficiency and Sustainable Lighting: A Bet for the Future* (pp. 1–11). IntechOpen.
- Wang, C., Mohd Rahim, F. A., Mohd Yusoff, N. S., Abdul Rahman, H., & How, V. (2015). Critical View on Daylighting Through Solar Bottle Bulb. *Building Research Journal*, 61(2), 115–128. <https://doi.org/10.2478/brj-2014-0009>

World Economic Forum. (2025). *The Global Risks Report 2025*. <https://www.weforum.org/reports/global-risks-report-2025/>

World Meteorological Organization. (2025). *State of the Global Climate 2024*. <https://public.wmo.int/publication-series/state-of-global-climate>

Zobel, G. (2013). *Alfredo Moser: Bottle Light Inventor Proud to be Poor*. BBC News. <https://www.bbc.com/news/magazine-23536914>

III—5

Adam Zaretsky

Bioart Biopsy: Shared Specimen Obtained

Adam Zaretsky is an experimental bioartist with over a decade of teaching experience. His practice critically explores the legal, ethical, social, and libidinal implications of biotechnological materials and methods. He is the Head of Research at Nadlinc (since 2016) and a Research Consultant at BEAK (since 2022). Since 2024, he has been a Visiting Professor at the Department of Audio & Visual Arts at the Ionian University, where he also serves as the Creative Director of TTTlabs and TTTfellows.

Abstract

Bioart hands-on wet lab remnants were donated to the Finnish National Art Collection at Contemporary Art Museum Kiasma, Helsinki, Finland, as part of the DIY-Hydroponic HYBRID DNA ISOLATION Skill-Share Lab: How to Extract DNA from Anything Living in the Laboratory or in your Kitchen: A Compare and Contrast Vegetarian Laboratory and Hobbyist Workshop Herbologies/Foraging Networks programme by Pixelache at the Kiasma museum on March 27, 2010. Fifteen years later, the bioart was found to be moldy. On the afternoon of November 20, 2025, samples were taken of the mold representing resilient fungal art-life. A living part of the bioart donated (object N-2010- 168:A) was biopsied to be added to the collection of into the Helsinki Fungarium — Museum of Fungi, Botany Unit / Mycology Team of the Finnish Museum of Natural History (LUOMUS). Dual taxonomies are now bridged by two museums, implicating the divide and informed by Biomedica Archiving Research Creation (BARC) art and science non-conceptual conservation archives of bioart. Further plans include exploring Contemporary Techniques of Biological Conservation for example: CryoGenic, BioInformatic and Transgenic Brood-based BioArt Archiving.

Image 1.

Testament and bioart donated (object: N-2010- 168:A-), Finnish National Gallery Collection / Museum of Contemporary Art Kiasma. Photo credits: Adam Zaretsky.



Bioart Advanced Collections Research: Towards Future Considerations

A moment in Bioart Conservation History: Dual Taxonomies bridged by Two Museums. CryoGenic, BioInformatic and Transgenic BioArt Archiving through Contemporary Techniques of Biological Conservation for both Biology Samples and Living Arts.

On November 20, 2025, postdoctoral researcher Kare Liimatainen and Museum Caretaker Henriikka Rossi arrived from the Botany Unit / Mycology Team of the Finnish Museum of Natural History (LUOMUS) to the Finnish National Art Collection at Contemporary Art Museum Kiasma for a bioart biopsy.

Entrance was cleared into the Finnish National Art Collection at Kiasma for mold sampling and cross-referencing of Hybrid DNA Isolation, a bioart new media monoprint. The bioart was donated by myself, artist Adam Zaretsky, to the Finnish National Contemporary Art Collection, as part of the DIY-Hydroponic HYBRID DNA ISOLATION Skill-Share Lab: How to Extract DNA from Anything Living in the Laboratory or in your Kitchen: A Compare and Contrast Vegetarian Laboratory and Hobbyist Workshop (Pixelache Helsinki 2010) under the Herbologies/Foraging Networks programme by Pixelache at the Kiasma museum on March 27, 2010.

During his Hybrid DNA Extraction Workshop (Pixelache Helsinki 2010), I proposed that what the participants were making—new media based on new DNA organic combinations—could be donated to the collections of the Museum of Contemporary Art Kiasma. It took a while to negotiate the donation and make it a priority, but the entry into the collection has been a quiet fact since January 2012. Kiasma has been looking after, caring for, and preserving what we understand to be the first bioart work included in the Finnish National Gallery's collection. Look at the archival entry in the database (Finnish National Gallery 2010) and the donation certificate (Zaretsky 2012), and check out the excellent video documentation (Zaretsky 2013) to get a sense of what happened, and what was archived or not (Paterson 2016).

On the afternoon of November 20, 2025, samples were taken of the mold representing resilient fungal art-life. A living part of the bioart donated (object N-2010- 168:A) was biopsied to be added to the collection of the Helsinki Fungarium—or Museum of Fungi. Two samples were taken between 13:00 and 14:00 on Thursday, November 20, 2025:

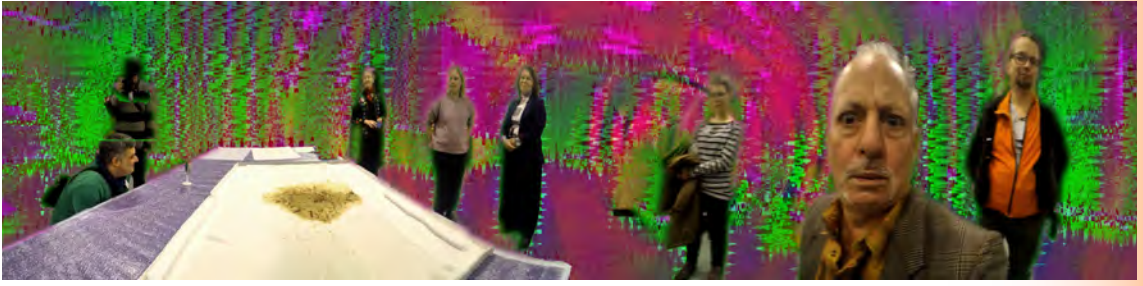


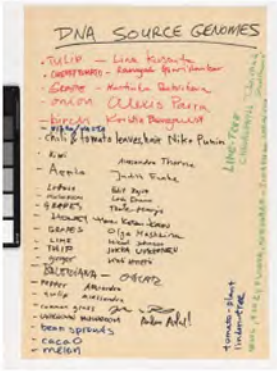
Image 2.

Finnish National Art Collection at Kiasma for biopsy and transfer of mold from Bioart by scientists from the Botany Unit / Mycology Team of the Finnish Museum of Natural History, LUOMUS. Present: Adam Zaretsky, PhD, Bioartist and Kiasma Donor; Saara Hacklin, Chief Curator of Collections Kiasma; Liisa Vesa, Conservator at The National Museum of Fine Arts Collection Kiasma; Kare Liimatainen PhD, scientist, Mycology and Bryophyte team, LUOMUS; Henriikka Rossi, scientist, Mycology and Bryophyte team, LUOMUS; Kira O'Reilly, artist and BEAK Advisor; Andrew Gryf Paterson, artist-organiser, Pixelache archivist, Doctor of Arts candidate at Aalto University ARTS, Dept. of Art & Media; Antti Ahonen, Documentation and spy from Koelse – Association of Experimental Electronics and the most infamous archive of Helsinki, the Museum of Paranormal Technology. Photo credits: Adam Zaretsky.

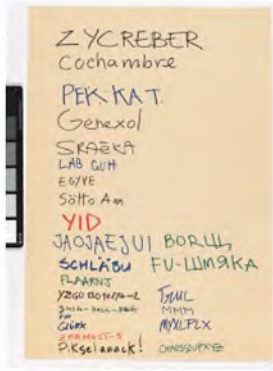
The first was simply a toothpick point aliquot for direct PCR and DNA barcoding to gain an understanding of the genetic nomenclature or hereditary species, genus, and family of the fungus we have.

The second sample was taken from the back and front of the art, with great care and delicacy, after receiving a chorus of “Yes” from quorum members present: the artist, the curator, and the conservator.

It is important to underscore that the sample both is and is not the art; it is part of the living bioart, the only known living part of the art based on life in life science as art. The sample of the mold was transferred from the collection of the Museum of Contemporary Art Kiasma (part of the LUOMUS) to the collection of the Museum of Fungi and accepted as a donation (Donated 23.3.2010, Collection Number N-2010-168:A- In the collection of: Finnish National Gallery Collection / Museum of Contemporary Art Kiasma). The Mycology Team at LUOMUS in Kaisaniemi, as witnessed, allowed, and freely donated by the quorum to the Collection during the collection of the mold for the other collection.



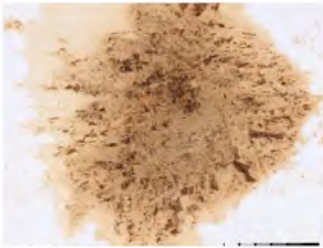
_0555_8bit.tif



_0554_8bit.tif



_0550.tif



_0549_8bit.tif



_0549.tif



_0548_8bit.tif

Image 3.

Collage of Formal Photo Documentation.

Photo credits: Finnish National Gallery / Pirje Mykkänen.

This represents the beginning of an amassed art and science taxonomy. The mould is stored in two museums as a formal sample of dual cultural worth. This overlap is a sort of an art and biology history moment. As the living objects or semi-living objects begin to amass Scientific Taxonomy and further Arts Testament, the archival details will spread from the mold's second permanent home at the Botany Unit/Mycology Team of the Finnish Museum of Natural History, overlapping as well as meteing out a more robust nomenclature in the Finnish National Art Collection.

This resulted in a public presentation on conservation held on November 20, 2025, at Bioart Society, entitled SOLU Dialogues: Andrew Gryf Paterson and Adam Zaretsky (Mataich 2025), in connection with Pixelache's Archival Tendencies project (Bioart Society 2025; Pixelache Helsinki 2025). The event presented an opportunity to host an open dialogue on the mold that has been growing on and as a part of the artwork—we have named it Curator's Extremophile. After 12 years in the dark, it may have become a rarefied species with novel extremophile properties which only a trained molecular mycologist consultant could uncover. Particularly BARC@BioStasis or BARC@BS (Biomedica Archiving Research Creation) art and science non-conceptual conservation archives of bioart: 1) BioartCryo, Cryogenic Storage Archive, 2) Bioart-BioInfo, Bioinformatic Database Archive, 3) BioartGermline, GMO Colony as Reproductive Archive (Zaretsky 2022).



Image 4.

Isolation of Mold for Direct PCR DNA sampling and active mixing with primers for species and genus identification through DNA barcoding performed by Kare Liimatainen, PhD., Scientist, Mycology and Bryophyte team to enter the data into the genetic taxonomy of the donation to the collection of the Museum of Fungi, Finnish Museum of Natural History, LUOMUS, in Kaisaniemi, Helsinki, Finland. Photo credits: Adam Zaretsky.

Some of the bioart-specific possibilities of preserving living artworks drew extensively from Unstill Life: Biomedica Art Archiving in the Ephemeral Permanent Collection, “Arc-hive: Case Studies and Life as an Object”, Many thanks from myself, Adam Zaretsky, Ph.D., bioartist and Kiasma donor, to all involved parties for this historic interdisciplinary, next-level bioart conservation work:

- Saara Hacklin, Chief Curator of Finnish National Gallery Collection / Museum of Contemporary Art Kiasma
- Liisa Vesa, Conservator, Finnish National Gallery Collection / Museum of Contemporary Art Kiasma
- Kare Liimatainen PhD, scientist, Mycology and Bryophyte team, Finnish Museum of Natural History
- Henriikka Rossi, scientist, Mycology and Bryophyte team, Finnish Museum of Natural History
- Kira O'Reilly, artist and BEAK Advisor (Bioart Ethics Advisory Committee)
- Andrew Gryf Paterson, artist-organiser, Pixelache archivist, Doctor of Arts candidate at Aalto University ARTS, Dept. of Art & Media
- Antti Ahonen, Documentation and spy from Koelse – Association of experimental electronics and the most infamous archive of Helsinki: Museum of Paranormal Technology (Myymälä² Gallery)
- Tuula Niskanen, PhD, Senior Curator, Mycology and Bryophyte team, Finnish Museum of Natural History, and Kiira Miesmaa, Museum Director, Museum of Contemporary Art Kiasma, Collections of the Finnish National Gallery (The National Museum of Fine Arts Collection at Kiasma)

Acknowledgements

This entire endeavour was funded by Pixelache Helsinki, with support from Bioart Society, as part of the Archival Tendencies 2025 process coordinated by Andrew Gryf Paterson in collaboration with Antti Ahonen. The ten days in Helsinki were hosted by Kitchen Lab Tarvo via in-kind support.

Bibliography

Bioart Ethics Advisory Committee.
(2024). *About BEAK*. [https://
bioartethics.xyz/about-beak](https://bioartethics.xyz/about-beak)

Finnish National Gallery – Museum of Contemporary Art Kiasma. (2010). *Hybrid DNA Extract, Object N-2010-168:A* [Collection record]. Finnish National Gallery Collections. [https://www.
kansallisgalleria.fi/en/object/398660](https://www.kansallisgalleria.fi/en/object/398660)

Mataich, S. (2025). *SOLU Dialogues: Andrew Gryf Paterson and Adam Zaretsky on Conservation*. Bioart Society. [https://
bioartsociety.fi/projects/solu/activities/
solu-dialogues-andrew-gryf-paterson-
and-adam-zaretsky-on-conservation](https://bioartsociety.fi/projects/solu/activities/solu-dialogues-andrew-gryf-paterson-and-adam-zaretsky-on-conservation)

Myymäälä2 Gallery (MSL). (2024). *Museum of Paranormal Technology*. [https://msl.fi/itetaide/en/destination/
museum-of-paranormal-technology/](https://msl.fi/itetaide/en/destination/museum-of-paranormal-technology/)

Pixelache Helsinki. (2010, March 27). *Vivoarts Workshop With Adam Zaretsky*. [https://www.pixelache.ac/events/
vivoarts-workshop-with-adam-zaretsky](https://www.pixelache.ac/events/vivoarts-workshop-with-adam-zaretsky)

Paterson, A. G. (2016, April 13). *Kiasma Preserves Hybrid DNA Extract: A New Media Mashup for Over 6 Years*. Pixelache Helsinki. [https://www.pixelache.ac/posts/
kiasma-preserves-hybrid-dna-extract-
new-media-mashup-for-over-6-years](https://www.pixelache.ac/posts/kiasma-preserves-hybrid-dna-extract-new-media-mashup-for-over-6-years)

Zaretsky, A. (2012). *Hybrid DNA Isolation Workshop / Kiasma Donation Certificate* [PDF]. [https://www.dropbox.com/s/
epwyneujeew1xl8/zaretsky_2012_pixelache_
hybrid-dna-isolation-workshop_270310_
kiasma-donation_lahjakirja-signed.pdf?dl=0](https://www.dropbox.com/s/epwyneujeew1xl8/zaretsky_2012_pixelache_hybrid-dna-isolation-workshop_270310_kiasma-donation_lahjakirja-signed.pdf?dl=0)

Zaretsky, A. (2013). *Hybrid DNA Isolation: Vivoarts Workshop at Kiasma* [Video]. Vimeo. <https://vimeo.com/60815858>

Simpson-Porco, J. W., Dörfler, F. & Bullo, F. (2016). Voltage Collapse in Complex Power Grids. *Nature Communications*, 7, 10790. <https://doi.org/10.1038/ncomms10790>

III—6

Maja Smrekar & Ewen Chardronnet

Legal Battle Against Political Abuse of Art: Interview With Maja Smrekar

Maja Smrekar's work explores themes of belonging, becoming, family, and home, challenging socially and politically fixed identities and notions of order. She engages with ecofeminism, interspecies relationships, and the impact of technology-driven ideologies. Her practice spans performances, installations, site-specific art, videos, workshops, lectures, and texts. She is an Associate Professor of Sculpture and Contemporary Artistic Practices at the Academy of Fine Arts and Design, University of Ljubljana.

Ewen Chardronnet is an artist, author, journalist, and curator based in Paris. He is currently editor-in-chief of the bilingual web magazine Makery.info. In his work, he is interested in practices, tactics, and speculations that connect artistic research and scientific knowledge to the creation of social situations that intertwine discourses and shifts of perspectives in the very fabric of society.

Abstract

The article *Legal Battle Against Political Abuse of Art: Interview With Maja Smrekar*, initially published on August 31, 2025, by Ewen Chardronnet on *Makery*, documents a wide-ranging conversation with Slovenian artist Maja Smrekar concerning her artistic practice and a recent political controversy. Her work was misappropriated within a far-right political campaign in Slovenia, where an image from the *Hybrid Family* project was taken out of context and instrumentalised during a referendum campaign to incite cultural anxiety. Smrekar has since pursued legal action against the Slovenian Democratic Party for the unauthorised use of her artwork, framing the case as both defamation and a violation of her moral rights. Beyond the specifics of this dispute, the conversation situates the incident within broader struggles over artistic freedom, gendered bodies, and the politics of non-human kinship.

Introduction

Maja Smrekar's acclaimed *K-9_topology* series has, for over a decade, explored the entangled kinship between humans, dogs, and technology through a deeply embodied eco-feminist lens. Her work has gained international recognition, but since February 2025, it has also been severely misused in a far-right political campaign, exposing the vulnerability of artists when their practice is appropriated for ideological battles. In this interview, Smrekar reflects on the broader context of her artistic research, the challenges posed by political abuse of art, and the need to build collective resilience against censorship. These pressing issues were addressed on 11 September in Ljubljana, Slovenia, at the 2025 conference *Taboo – Transgression – Transcendence in Art & Science (TTT)*.



Image 1.

Maja Smrekar and Lord Byron. Photo credits: Luka Dakskobler.

Ewen Chardronnet: Could you recontextualise the origin of this research on the co-evolution of humans and dogs, humans and wolves? How did you start 10 years ago?

Maja Smrekar: Back in 2013, I was talking with my producers at Kapelica Gallery about what direction I should take next. We had been working together for a few years already, but at a certain point, I didn't really know where to go from there. This is when the curator, Jurij Krpan, asked me a very simple but powerful question: *What is the one topic that never stops pulling you in?*

And without thinking too much, I said: dogs. I've always been fascinated by them—especially by their relationship with humans. I kept wondering: When did this bond begin? Why did they stay with us? Why did they allow us to shape them the way we did? And why do they always seem so grateful, so loving, and so willing to collaborate with us?

So we decided: okay, let's work on that. But I felt I needed to start at the very beginning—with the history of domestication. How, why, where, and when did it actually happen? Since dogs come from the wolf, I first wanted to talk to people who study wolf ecology. Eventually, I connected with biologist Miha Krofel from the University of Ljubljana, who specialises in wolves and other large carnivores. At the time, he was involved in a big project called LIFE WolfAlps EU, focused on coordinated wolf conservation. I ended up spending almost a year with him, following his work.

The project itself lasted several years and aimed to regulate wolf populations in Slovenia. It brought together everyone who has to deal with wolves—hunters, livestock farmers, dog breeders, shepherds. Before that, wolf numbers had only been estimated in very rough ways: a hunter might spot a pack here, another a lone wolf there, and based on that, they'd say something like: *Well, we probably have 80 to 100 wolves, let's kill 15 this year.* The LIFE project changed that by introducing a rigorous, systematic count, which then informed legal decisions about culling.

I joined the biologist on many of his trips through the Slovenian wilderness. He was constantly on the move, checking tracking devices, collecting wolf scat to study DNA, and mapping out family lines. I was fascinated by the whole methodology of population tracking. I'd spend time in the car while he disappeared into the

forest, wearing special clothes he kept hidden there for weeks so the wolves wouldn't catch his scent.

Those long drives became my chance to ask endless questions. Since he didn't have much spare time, the car became my classroom. I would interview him about everything—wolf ecology, taxonomy, biology, behaviour. Then I'd go home, read more of his recommended literature, and come back with new questions. It was almost like having my own private seminar on wolves for nearly a year.

EC: And you were asking about wolf–human relations?

MS: Yes, but I wasn't only asking scientific questions. I was also curious about the cultural, humanistic side. For example, I asked him why the wolf is always the villain in fairy tales—like *Little Red Riding Hood*. We also talked about the mythology of werewolves, and how wolves, like eagles, owls, snakes, rats, spiders, or tigers, belong to that group of “charismatic animals” we either fear or revere. He told me something fascinating: he had never encountered any reliable scientific or historical record of wolves killing and eating a living human, except in extremely rare cases of sick or abnormal animals. But he did point to many medieval texts describing wolves and bears feeding on human corpses during pandemics and plagues. In those times, when sanitation protocols didn't exist, bodies were often discarded outside city walls. Wolves, being both hunters and scavengers, would feed on them. The sight must have been horrific, and that collective memory likely shaped the image of the wolf as a dangerous, almost demonic creature in human culture.

These conversations, blending science with cultural history, were incredibly enriching for me. I was reading a lot about the parallel evolution of humans and wolves at the time, so every discussion opened up new layers of understanding. It wasn't just about biology—it was about mythology, fear, kinship, and the long, entangled history of our two species.

EC: You could also relate this to your personal story?

MS: I first came to this subject from a sentimental place. I grew up as an only child in a family that bred dogs, so for me, “family” always meant living with many of them. My earliest memories are full

of dogs, and my emotional connection to them was very strong. But I never really knew why this bond between humans and dogs was so deep—or how it went all the way back to humans and wolves cohabiting 35 to 40,000 years ago, long before the agricultural revolution, when humans were still nomadic.

Researching this was fascinating, especially learning that it wasn't humans who colonised wolves, but rather wolves who came to us. Human groups would throw away scraps—mostly bones and leftovers that weren't edible to them. For wolves, whose entire survival strategy is based on conserving energy, this was a perfect opportunity. Their ecology is about investing the least energy possible, which is why they usually hunt weak or sick prey, stabilising the ecosystem in the process. So of course, they would take the food that humans discarded—it was the most efficient survival strategy.

Fast forward thousands of years, to about 12,000 years ago, when the agricultural revolution began in different parts of the world. Some wolves stayed close to human settlements, living on the edge of villages while still keeping the structure of wolf pack dynamics—their incredible sense of smell, hearing, and vision meant they became early warning systems for danger. Over time, this changed humans too. Gradually, our bodies began to produce less adrenaline and cortisol—the hormones of stress and threat—because wolves were taking over that role of protection. In parallel, humans started producing more refined levels of serotonin, the hormone that supports tolerance and social cohesion.

This shift freed up energy for humans as well. Instead of being constantly on alert for predators, they could invest more attention in agriculture, and eventually in culture—developing art, rituals, and technologies. In a way, the presence of wolves co-created the conditions for human civilisation to flourish. Slowly, over many generations, some wolves never went back to the wilderness. They remained at the margins of human settlements. Through this long cohabitation, they became dogs.

And eventually, dogs themselves began to adapt to us. They discovered that by making their eyes seem larger and their bodies less threatening, they received not just food but also affection. Humans welcomed them into their homes, their beds, into the intimacy of everyday life. This mutual gaze and closeness raised



Image 2.

K-9_Topology: Ecce Canis (2014) by Maja Smrekar at the Kapelica Gallery, Ljubljana, 2014. Photo credits: Miha Fras.

oxytocin levels in both species—the hormone of bonding and love. That’s where this extraordinary reciprocity comes from. Dogs give us love because we give it to them, and this exchange has become biologically embedded in both species.

So what really struck me is that dogs and humans co-evolved together. We didn’t just domesticate them—they also domesticated us. Living side by side created a kind of mutual selection pressure that shaped our biology, our emotions, even our culture. That’s why I often say: no matter what cultural hierarchies claim, in a very real sense, we are equals.

EC: It was also around this time that you developed the *Ecce Canis* project on the co-evolution of serotonin between humans and wolves, consisting of an olfactory installation that the public could experience at the bottom of a cornucopia-shaped environment covered in fur, evoking the caves where humans lived at the beginning of the relationship between wolves and humans. At the time, I was working as a curator at the Antre Peaux in Bourges, and I wanted to work on an anniversary project of the Kapelica Gallery, and Jurij Krpan told me about your work. Shortly before that, in the Sologne forest near Bourges, we had met Jean-Philippe Varin from Jacana Wild Life Studios, a zoologist, wildlife photographer, and renowned animal trainer for the cinema, who had worked on Jean-Jacques Annaud’s *The Bear*, the deer of *Hannibal Lecter*, and on *Harry Potter*’s snowy owl and eagle-owls, among others. Varin, who has since passed away, was nearing the end of his career and wanted to work locally with us, so I told him about your work and ideas, and he agreed wholeheartedly with what you just said about the co-evolution of humans and wolves, even mentioning the special role of women in this process during the cave era. He was enthusiastic and even told me that your ideas reminded him of when he worked with packs of wolves for video clips of French pop singer Mylene Farmer. The idea of inviting you to work with him then emerged. And you came in residency to prepare an exhibition and performance at the Bandits-Mages Festival 2014 in Antre Peaux.

MS: Thank you so much for making that possible! Coming to Jacana Wildlife Studios felt like arriving home. We worked hard there,

but I was so happy, probably full of oxytocin (laugh). What struck me most was being surrounded by animal ethologists, people who truly know how to communicate with other living beings. We came to work with wolves and wolf-dogs, but Jean Philippe showed us—sometimes in person, sometimes on video—that you can actually communicate with any form of life. Not just with the big, charismatic animals like tigers or bears, but also with bees, with birds, even while they're still inside their eggs, with worms, fungi, bacteria. Communication can happen through behaviour, through food, through light, through vibrations and frequencies—it's about tuning into the right channel.

I had already understood, in some way, that human language is a system, an institution. It helps us enormously, but it can also trap us inside our own expressions. With other living beings, you first have to learn their language—their behaviour, their biology, because everything is connected. Behaviour is always tied to physiology, to biology, even to technology, which is, of course, true for humans as well. This way of seeing the world has helped me so much when communicating with people. Sometimes, when I don't understand someone, or when I find myself lost in a group, I pause and simply observe. I ask: What is their language? How are they communicating, and why? Then I try to meet them there, to speak in their terms, if it's possible. And that's also ethology.

So the time I spent at Jacana was not only invaluable for my project—it was deeply important for me as a person. I grew there, I learned something essential. That's why, whenever I talk about this project, especially about the preparations, I always return to that experience. Because it wasn't only research; it was a lesson in how to live and how to connect with the other.

EC: Can you describe your first encounter with the pack?

MS: I arrived with a certain confidence about communicating with the pack of canines. I thought: well, I know dogs, this won't be a problem. But of course, I quickly discovered that even though their DNA is almost identical, wolves are not dogs—they are something else entirely. When we first met with the wranglers—Jean Philippe, Véronique Gérault, and Christophe Gaudry—they explained the chain of command, the ways of communication, how we would approach the animals. And honestly, at that moment, I thought to



Image 3.

RC Consortium Call for Action, 2025

Rewilding Cultures call for action at the conference TTT2025 in Ljubljana, with the roundtable Art as Target: Context, Consent, and Control, focused on the political misuse of Maja Smrekar's *K-9 Topology: Hybrid Family* project in a far-right campaign in Slovenia, advocating for the reinforcement of protective frameworks for artists in the EU space. Participants: Maja Smrekar, Jens Hauser, Mojca Kumerdej, Ewen Chardonnet, and Dalila Honorato. Photo credits: Ewen Chardonnet.

myself: yes, I know this already. But when I actually stepped into that enormous enclosed space with two wolves and three wolf-dogs, I realised I knew nothing.

The largest one leapt at me immediately, pinned me to the wall, and nipped me on the cheek. It wasn't aggressive—he bit very gently—but it was so fast, and I was terrified. I didn't show it outwardly, but of course they felt it, because instantly the whole pack withdrew. And that's when the wranglers explained something crucial: it's not enough to hide fear, you have to not feel it. Because the pack doesn't respond to fear with attack—it's not about danger—it's about energy. Nervousness, insecurity, tension: they simply don't want that energy in their pack. They won't attack you, they'll just exclude you. And I thought: how wise. What a lesson for life.

So the wranglers encouraged me to claim the space in a calm, relaxed way. To walk into the centre, to settle myself, to be still but grounded. Slowly, the animals became curious again. They began to test me—brushing past me, bumping into me lightly, circling me.

Not aggressively, but persistently, to see whether I would lose my calm. My task was simply to stay steady, to hold the space without resistance or nervousness. And at some point, I realised: I have to trust the wranglers completely. They were my translators, between me as the newcomer and the animals who lived by an entirely different set of rules. So I surrendered to their guidance.

Véronique then told me to kneel on the ground. She explained that the alpha female's acceptance would be decisive—the whole pack would follow her lead. And indeed, it was the alpha female who came forward, took my hand gently in her muzzle, and led me to the centre. This was the moment the wranglers had prepared me for. I was told to stay low, to look the others in the eye—but never the alpha male, because my gaze could mean a challenge to him. So I met the eyes of the others, and one by one they approached. Soon, they were licking my face, circling, brushing their bodies against me. They never stopped moving—it was so different from dogs, who might eventually settle down into calmness or cuddle. The wolves and wolf-dogs remained in motion, but their movements were full of touch, contact, curiosity, inclusion. And I had to reciprocate, to respond to their generosity with my own. I felt incredibly privileged to be accepted.

It was such a profound lesson: that true calmness is a language in itself. A state of being. And that non-verbal communication—being together in silence, in trust with another species—was extraordinary.

From there, we began rehearsing the performance. The wranglers were very serious about preparing the animals, ensuring they would feel at ease in another space, in front of 200 people. My role in the performance, I decided, was to become a landscape. I wanted the animals to carry the action, while I remained still, as a surface, a presence. Of course, there were references—Beuys, Kulik—artists who had performed with canines. But I felt my position was different. Beuys had used the coyote as a metaphor; Kulik had embodied the dog itself—as a symbol. For me, in 2014, it felt essential to approach it from a post-human perspective—not as metaphor or paraphrase but as coexistence. The human and the animal on the same level, both part of nature, both entangled in culture, in biology, and history.

So I wanted the wolves and wolf-dogs to eat directly off me—food made from starch and meat, reflecting our co-evolutionary

pressures of digestion (dogs digest starch, not wolves, ed.). But of course, to make this possible, we had to rehearse carefully. In a pack, food can trigger tension, even conflict. The wranglers worked tirelessly to ensure the animals were relaxed, to curate the situation, to make sure no fights broke out. And I had to be consistently kind, consistently trusting and calm, while they ate from my body.

What mattered most was trust. If they didn't trust me, they wouldn't stay with me on stage, especially not under the eyes of 200 people only metres away. But because of the preparations, wranglers' care, and the animals' willingness, it became possible. And for me, it was not just a performance. It was a lesson in calmness, generosity and trust.

EC: Another important factor was the context in which the work and discussions with Jean Philippe took place. He belonged to an older generation of filmmakers and, during the process, he often mentioned the criticism he was then receiving for his methods. On the one hand, more and more filmmakers were using digital special effects to create animals, and he complained that it looked so fake and that actors and directors were no longer building real relationships with animals during filming. He felt that working with real animals required specific skills and dialogue, which disappeared when everything was digital. On the other hand, he was also criticised by some animal welfare organisations, which considered the methods of his generation to be exploitative, both in his films and in his workplace, which functioned in part as a zoo. At the time, he was under intense media pressure regarding animal welfare, and I remember questioning certain practices, such as placing beepers on birds' eggs, as you mentioned earlier. I remember hearing his frustration with this new wave of criticism at the end of his career, directed at both his work and his workplace. Yet at the same time, his knowledge and close relationship with so many species were truly impressive, and I was in awe of that. In a way, I think this project allowed him to rise above the controversies; I think he enjoyed collaborating with you because you were genuinely committed to the animals, not just interested in capturing an image. For him, it was important to show, at the end of his career, that he valued communication with animals, as well as the care, love,

and knowledge that can only be acquired through direct contact, and not just through conceptual ideas about human-animal relationships. I think this was a key element of Jean Philippe's commitment to the project. How do you address the issues he may have faced in your artistic strategy?

MS: Working with Jean Philippe and his team of wranglers taught me a great deal—precisely because his approach was rooted in direct contact. No matter which dogs are my companions at a given time, we always engage in what we call training. Because this is where a real bond is formed, much deeper than when we are just taking a walk. Taking a walk is beautiful, of course, but when you work with a dog—when you train to communicate with each other, learn a sport together—that's when the dog and the human truly feel part of the same pack, and that's when communication becomes much more profound. It's not just about commands or learning new skills and tricks but about discovering each other. Both humans and dogs are about community—we like to be together, we like to cooperate. It's simply what we are—social animals. Donna Haraway has written the bible on this in *When Species Meet* (Haraway 2007).



Image 4.

Jean-Philippe Varin, Maja Smrekar, the wolves, and wranglers in the large green-screen room at Jacana Wildlife Studios. Photo credits: Amar Belmabrouk.

When I had the immense privilege of working with an ethologist—someone who was not merely preparing animals for film and performance but also carried a profound, practical knowledge of animal behaviour—I realised this was something I wanted to keep exploring in my work: these parallel evolutions and shared histories with other species. I also understood that if I was to continue collaborating with animals—as I later did, not only in *K-9_topology*—it would always have to be in collaboration with professionals. I would describe what I sought to achieve artistically, and they would define what was possible—always within the framework of the well-being of both human and animal. Later, when working with different canine collaborators, we always began with a period of simply getting to know one another, and only then did we decide together whether we were truly a good match. Nothing was ever forced.

EC: There was a provocative dimension to the performance in Bourges, for a so-called “mature audience”. Even Jean Philippe knew that was the case, but he never had any problems, and even saying it made a lot of sense, knowing your statement on co-evolution. Do you think what happened recently is because people have prejudices when it comes to contemporary performance art, as it triggers some taboos because it requires engagement and doesn’t remain on a theoretical level, or at a distance in a film or a video clip? I mean, these far-right politicians, with zero consideration for your private life, just instrumentalised some of the images in a populist manner, as a weapon to trigger reactionary voters.

MS: What has happened recently is nothing less than a reflection of the current Zeitgeist. Society is in regression—we all see it, feel it, know it. The right is thriving, becoming increasingly aggressive, while conservative ideas steadily creep into everyday life. In many countries, abortion rights, once thought secure, must be fought for again. Censorship and conservatism are resurfacing even in the art field, where moralism pours through, disguised as a return to “roots” or folklore—often just masked nationalism—or dressed up as seductive technology with no real depth behind it. Even ecology has become an overused and abused term—too often reduced to little more than greenwashing.

What troubles me most about the rising tide of the far right was revealed in my own local case—by how timidly the cultural scene responded to the referendum campaign on pension reforms for awarded artists (Slovenia Times 2025). In February, Slovenia’s right-wing SDS party, currently in opposition, escalated its long-standing culture war, branding contemporary art as “degenerate” and weaponising my work to fuel moral panic (Oltermann 2025). They stole a picture of my photo performance, altered it, stamped it with their logo, and turned it into a propaganda poster, conveying a message entirely opposed to my artistic and personal beliefs. For more than five weeks, these posters were displayed daily at booths across the country, while right-wing members of the parliament relentlessly amplified them on social media. It was brutal.



Image 5.

Branko Grims, a current Member of the European Parliament and representative of the far-right Slovenian SDS party, posed with the propaganda poster at the party’s booth and shared the image on his X account and private Facebook profile (February–March 2025).

Meanwhile, the media presented my name and work in distorted ways. Television repeatedly showed the propaganda poster in debates, often alongside insults, downright lies, and without context. On social media, I faced threats, waves of offensive comments, ridicule, misogyny, and outright hatred. I received threatening emails and phone calls late at night, even my mother received humiliating texts. Journalists contacted me repeatedly without consent, often invasively. In the neighbouring street, a protester shouted into a microphone, calling me a “bitch”. Graffiti appeared in the city, stating opposition to “dog breastfeeding”, and on election day, the Catholic Church, in collaboration with a right-wing party, displayed posters in front of churches depicting elderly citizens suggesting that their pensions would “surely be higher” if they had “breastfed a dog” instead of working hard. People consequently began recognising me everywhere—on the street, in shops, at the post office. This constant exposure, combined with the saturated atmosphere of hatred, created a profound sense of lost control and security. Even everyday tasks became exhausting, leading to chronic fatigue.

During these months, I did receive a few private messages and calls of sympathy from colleagues—but while kindness existed behind closed doors, in the public space, where the attacks were taking place, compassion was almost completely absent. There were exceptions: a few individuals spoke out publicly, and institutions like the Academy of Fine Arts and Design issued letters of support, and 44 other cultural organisations issued a collective public letter. A few media outlets stood by me. But the attacks were highly organised, relentless, and carried out daily for three months—and in some forms, they continue even now.

In the public space, the Minister of Culture was the only one who defended me loudly and consistently—and I am deeply grateful. Still, it was profoundly troubling to be a ping-pong ball between the left and the right while most of the cultural scene stayed silent, which I don’t really understand.

This campaign was not about me—it was about humiliating art and culture, all of us. As cultural workers and artists, we are the first to defend fundamental civil rights through our work—freedom of speech—which we exercise in the public sphere. If—or when—the right wing comes to power again, it won’t only be the few that are always targeted. We will all be. These past months have been

a chance to strengthen ourselves collectively for the struggles ahead, because there are no systemic platforms that protect us. We have only each other.

EC: Don't you think that even the producers or curators, including us in Bourges, tend to take an image that is a little bit more provocative as a communication tool when bringing you to a festival?

MS: As professionals, we have to prioritise context above all, rather than fixating on what might be perceived as merely provocative. For me, provocation has always been secondary in my work. Honestly, I never considered it particularly provocative—my reference points are the Russian avant-garde, the Vienna Actionists, and body art that had already been thoroughly explored by the turn of the millennium. In that perspective, I felt my work was just a drop in the ocean compared to what had already been done—and continues to be done—across many art fields.

I also think my work simply landed in the wrong place at the wrong time to become co-opted into a political PR strategy. The attack wasn't because my work is so utterly provocative, but because it became useful in a very specific political context here in Slovenia, and similarly before the 2017 elections in Austria.

And furthermore, my concern is not whether the public dislikes my work—there will always be audiences who strongly agree or disagree—but that politics abuses art as a weapon. When a well-funded political machinery, backed by a network of right-wing media and followers, launches a coordinated attack on a single artist or artwork—dismissing it as “not art”—it undermines the legitimacy of the entire professional art field. Once art is taken out of context, altered, or misrepresented, political exaggeration becomes necessary—precisely because, it seems to me, the original work was never radical enough to sustain their narrative. This was particularly clear in Slovenia, where the rhetoric even invoked the zoophilic taboo—an extreme, deliberate distortion revealing just how far these misogynist narratives can be twisted and weaponised.

EC: Well, there is still the question of nakedness, being naked with an animal, which seems to be a taboo for them.

MS: (Laughs) In the end, it really comes down to people's own biases—their personal issues that get triggered the moment they see someone, especially a woman, naked with an animal, without bothering to consider the context. Isn't it striking that such a depiction can provoke outrage, yet the same people can drive past a billboard with a naked female body selling products, or watch images of massacred children in Gaza, Ukraine, or Sudan on the news, and feel almost nothing? That, to me, is what is truly perverted. But this whole situation also reflects the *Zeitgeist*: conservatism is on the rise everywhere, and it's frightening how quickly it is being normalised. The female body is once again under attack—tolerated only when framed as a reproductive object. In my work, I am always interested in the universal meanings a certain act can carry—especially now, at a time when the female body is increasingly being claimed by certain discourses as the property of the state, the law, or even the church.



Image 6.

The original 2016 image from Maja Smrekar's photo performance piece *K-9_topology: Hybrid Family*. Photo credits: Maja Smrekar and Manuel Vason. Produced by Kapelica Gallery and Freies Museum Berlin.

Consider, for instance, the cradle myth of Ancient Rome—the cradle of humanism itself. Rome, as the story goes, was founded because a she-wolf nursed two abandoned infants who later built the city. In my work, I simply reversed the myth: instead of a wolf nurturing humans, a human nourishes a self-domesticated wolf. From there, other statements emerged: that nature will always outlast culture, and that the future may well belong to other living beings, even when humans bring about their own destruction.

The *K-9 topology* series was both universal and intimate. Of course, this came from a deeply personal place too—from my own emotional memory of growing up as an only child in a family where love was not much expressed, and where dogs became my true companions, my family. They gave me what I needed to survive psychologically—oxytocin, touch, love, and presence. So in *Hybrid Family*, I wanted to claim this parallel evolution with dogs and wolves, the first animals to live alongside humans, thousands of years before horses or cats.

I also wanted to show that milk is not exclusively tied to pregnancy, the womb, or a “female” body. Milk can be produced by many kinds of bodies, including those identified as male or those that don’t conform to binary definitions at all. In this sense, the project proposed an expansion of family structures—not as a rejection of the nuclear family but as a way of opening it up, of extending its possibilities.

Later, in the fourth project—which became the final exclamation point of the entire series—I created what I call a molecular sculpture: not only in form but in process, a sculpture of co-evolution. My intention was to symbolically return the DNA of humans, wolves, and dogs into the same ecological relationship they once shared, when all three species co-regulated their environment and maintained a natural equilibrium. Today, however, humans and dogs stand as the two most invasive species on the planet. Against this backdrop, the act of combining my oocyte with the fat cell of a dog—fully aware that the cell could not survive beyond a few days because of biological incompatibility—was conceived as a gesture of a temporary cohabitation on the molecular level.

This was an ecofeminist statement: a choice to use my reproductive material not for what the conservative part of society expects of it but as an artistic medium to imagine shared futures

and relationships. And this is precisely where the problems began. Right-wing groups, unwilling to engage with these ideas, saw only an attack on the nuclear, white, heteronormative family. They refused to contextualise or acknowledge the extensive exhibitions, lectures, books, articles—even documentaries—that had already framed these works. Instead, they reduced the entire series to a single emblematic image, stripped of context, and weaponised it as a patriarchal warning about what art—especially when created by a woman—must not do, and what statements must not be made.

EC: **There's a full directive of the EU parliament (European Parliament 2023) voted last year about improving the professional status of artists in the European Union, saying we, the cultural sector, should work on harmonising the status of the artist, because the status is better in some countries than others in the EU, etc. And it was actually to be implemented in 2025, because they voted in 2024. Yet, during the winter, when cultural organisations were overwhelmed with tight EU funding applications, another paradox became clear: while institutions were busy working within EU frameworks, the far right, unable to act on the EU level, was mobilising attacks locally. How do you see this gap between EU-level promises and the realities artists face in everyday life?**

MS: It's nice that the EU Parliament voted to improve the professional status of artists, but my experience shows that, in reality, there is no platform to protect artists from far-right campaigns utilising them and their work for political propaganda—neither locally nor at the EU level. Similar attacks have targeted artists in Sweden, Poland, Hungary, Turkey, Slovakia, Croatia, Austria, and Slovenia, yet no one in the EU Parliament addresses this. We are left on our own, in a society fragmented into small interest groups, each chasing the next gig in order to survive.

The situation you mentioned also reveals how many individuals and institutions—both governmental and non-governmental—are forced to compromise constantly, constrained by EU rules, global capitalism, and underlying conservative ideologies. This was particularly evident in the fragmentation of the scene before the referendum: some criticised the government's proposed new criteria

for artists' pensions because they excluded certain important fields, even though the criteria would be revised and updated every five years. While the referendum ostensibly concerned these criteria, it was in reality about disciplining leftist politics by smearing the cultural scene as a whole. Many others hesitated to participate at all, following the coalition's call to ignore the vote entirely. Ironically, the entire referendum campaign unfolded while many were fully absorbed in EU applications, seemingly—or deliberately—oblivious to what was happening locally.

In any case, all kinds of compromises inevitably result in self-censorship. I believe compromise is not an option. What we must do is confront the system from within, united as a pack—a community—subverting it from the inside and resisting together.

EC: **And it's not the end of the story. Unfortunately for you, this is not going to end any time soon, as the justice procedure will take time. What do you wish to say to the community that will read this?**

MS: The legal action will take at least five years, during which I expect to spend at least €12,000. If my lawyer were not working pro bono—we agreed that if we win, he would receive a percentage of the compensation—the costs would be about three times higher. This amount covers only court-related expenses: fees for the court appraiser and expert, and documentation costs, such as collecting and archiving more than 300 media publications mentioning me since February 20. In short, this will be a long and exhausting fight, but one I feel is my duty.

However, not everything has been negative. After The Guardian published an article in May (Oltermann 2025), I was contacted by a group of curators, theorists, and producers—among them you from France, Jens Hauser from Germany, Dalila Honorato from Greece, Tatiana Kourochkina from Spain, and later Uroš Veber from Slovenia and François Robin from France. You generously offered expertise and resources to help launch the online platform *artkinship.org*, through which we are now gathering signatures and donations for the lawsuit. Since then, individuals and art organisations—including Slovenian artists and institutions, as well as members of civil society—have joined, contributing signatures (OpenLetter. Earth n.d.), sharing newsletters, and donating. For this, I am

deeply grateful, as it restores a sense of agency that is incredibly important in my situation. Through their response, parts of the cultural community showed that it can still unite and resist attempts to delegitimise artists and their work. At the same time, I understand it as an exercise to remain vigilant and connected. Such political pressures are often only the first step towards broader efforts to control and discipline culture—a reality that has become very evident to me.

This is why your solidarity in proposing the artkinship platform has been profoundly meaningful. It represents not only support for me as an individual but also a clear stance against attempts to restrict artistic freedom and impose political pressure on the cultural sphere internationally. If I win the lawsuit and the SDS party is required to reimburse the court costs, I will donate those funds to an international platform supporting artists persecuted by autocratic governments. I will do the same if I raise more than what is needed for this case. I will also keep the public fully informed about all proceedings on the platform, because the fight for freedom of speech is essential.

Art has always been a vital force in shaping public debate—within politics and beyond. It provokes critical thought, and only through critical thought can society defend its most fundamental rights and freedoms: peace, security, dignity of the vulnerable. Art carries the power to ignite social change—and this is precisely what the far right fears most. Let's use our power!

Bibliography

- Art Kinship. (n.d.). *Art Kinship: A Network for Creative and Ecological Kin-Making*. <https://artkinship.org/>
- Chardonnet, E. (2014a). *Bandits-Mages 2014 / Maja Smrekar – Ecce Canis / preparation performance @ Jacana Wild Life Studios* [Video]. Vimeo. <https://vimeo.com/111093344>
- Chardonnet, E. (2014b). *Maja Smrekar – I hunt nature and culture hunts me – Rencontres Bandits-Mages 2014 (K-9_topology)* [Video]. Vimeo. <https://vimeo.com/112481726>
- Slovenia Times. (2025, March 20). *Divisive Campaign Looming in a Referendum on Artists' Pensions*. <https://sloveniatimes.com/42890/divisive-campaign-looming-in-a-referendum-on-artists-pensions>
- European Parliament. (2023, November 21). *Status of the Artist: Better Working Conditions for Artists and Cultural Workers* [Press release]. <https://www.europarl.europa.eu/news/en/press-room/20231117IPR12106/status-of-the-ar>
- Haraway, D. J. (2007). *When Species Meet*. University of Minnesota Press.
- Kersnikova Institute. (n.d.). *Kapelica Gallery*. <https://kersnikova.org/en/about-us/kapela/>
- Krofel, M. (n.d.). *Miha Krofel – Researcher profile*. ResearchGate. <https://www.researchgate.net/profile/Miha-Krofel>
- LIFE WolfAlps EU. (n.d.). *Improve Wolf-Human Coexistence*. <https://www.lifewolfalps.eu/en/>
- Oltermann, P. (2025, May 10). Slovenia to Vote in Referendum on Artist Pension That Has Fostered Culture War. *The Guardian*. <https://www.theguardian.com/world/2025/may/10/slovenia-to-vote-in-referendum-on-artist-pension-that-has-fostered-culture-war>
- OpenLetter.Earth. (n.d.). *In Defense of Artistic Freedom: Support Legal Action Against Political Abuse*. <https://openletter.earth/in-defense-of-artistic-freedom-support-legal-action-against-political-abuse-56f1c0d0>
- Smrekar, M. (n.d.). *EKCE Canis*. <https://www.majasmrekar.org/ekce-canis>

FERAL

ARCHIVES

309

now that everything
is possible stop
future

FERAL ARCHIVES

Tina Dolinšek

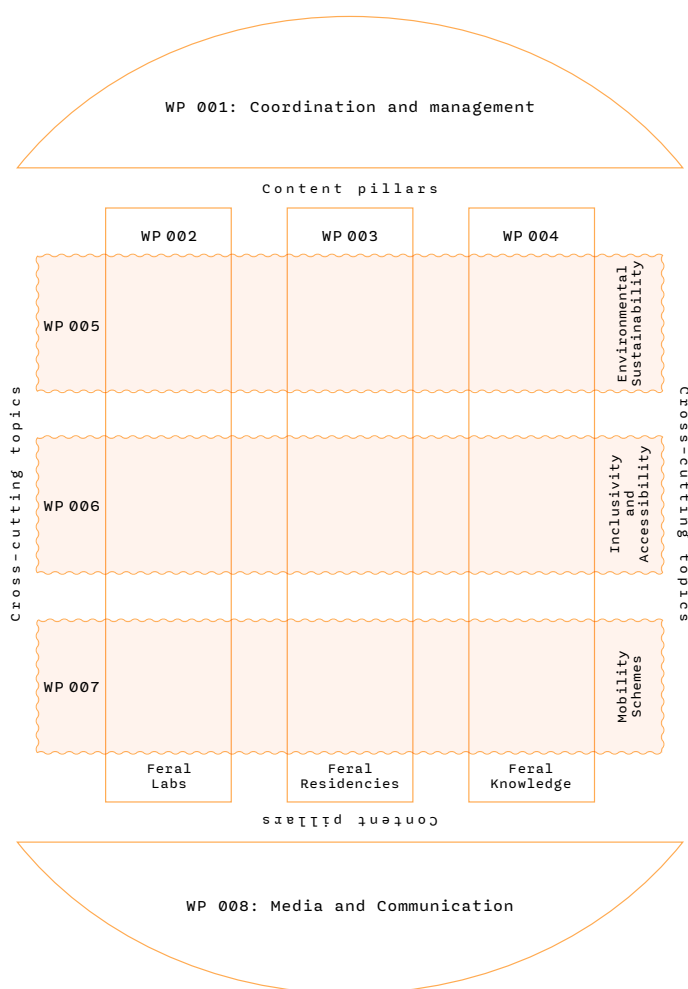
Rewilding Cultures Project on the Path of Sustainable Practices

Tina Dolinšek is an independent new media art producer, curator, and cultural facilitator. She has collaborated with numerous Slovenian cultural organisations, contributed articles to various local media outlets, and edited several DIY art tutorials and booklets. She initiated the artistic research and production camp PIFcamp, which she has been leading ever since.

Introduction

The Rewilding Cultures (RC) project is centred around exploring innovative approaches to production, inclusivity, and environmental considerations at the intersection of the arts, science, and technology; hence, the project's core activities revolve around three content pillars:

Feral Labs—temporary, transdisciplinary creative hubs that blend art, technology, environmental research, and open-source principles in intensive, immersive gatherings, held in remote locations; **Feral Residency programmes**—support long-term creative projects and foster deeper connections with artists; and **Feral Knowledge**—the discursive part, encompassing the Feral Node Books biennial publication series and TTT Conference on art, science, and technology.



The three Feral pillars are not static entities but require continuous reassessment, development, and innovation. Therefore, two cross-cutting themes (shaped into so-called Work Packages) of the project—environmental **sustainability** and **inclusivity and accessibility**—are regarded as fundamental to future resilience and serve as important areas of progress for the partners' events and projects, shaping the way they are conceived, organised, and disseminated. Work Package 5 (WP5) on Environmental Sustainability centres around identifying and monitoring the environmental impact of Feral events by focusing on (sustainable) mobility and use of materials; Work Package 6 (WP6) addresses issues of inclusivity and accessibility, with a particular focus on two main areas—social and economic inclusivity and gender diversity.

While the assessment and reports on *Materials Use Evaluation* and *Gender Diversity* are still in progress, the consortium identified, addressed, and implemented *measures towards reducing the participation limitations and barriers* as part of the ongoing social and economic inclusivity efforts, and concluded the assessment of *mobility-related GHG footprint of the Feral Labs and Feral Residencies*.

The outcomes of these self-evaluations, conducted between 2023 and 2025, have been integrated into the organisational practices of all eight partners as self-tailored pilot measures arising from the specific contexts of their Feral events. These measures are already being implemented—or will be by the end of the project and beyond.

Rewilding Cultures' Social and Economic Inclusivity Efforts

For the purpose of self-evaluation of the projects' inclusivity situation, each of the eight partners completed an online survey, conducted in the beginning of 2024. Its primary aim was to assess current (best) practices, identify gaps, and possibly offer future efforts towards more inclusive and accessible programming within the Feral Labs and Artist-in-Residency formats. The questions revolved around two main areas: *Social and economic accessibility* part focused on financial accessibility, time-related participation barriers, and family-friendly practices, while the second part addressed the *gender balance / gender diversity* issues through exploring both organisational values and practical strategies to ensure inclusive and safe environments.

Responses showed a high awareness that these topics are important within the consortium, and therefore shed light on how different events provide a variety of contexts (such as the AIR duration, artist fees,

economic disparities between countries, etc.), capacities (infrastructural and economic, such as living costs in different countries), and organisational approaches (communication, awareness and ongoing artist support, etc.), specific to each of the eight partners involved.

A strong base of economic support is already in place across the RC project, with most partners providing and covering the basic needs such as housing, artist fees, and production assistance. There is also a clear awareness of the importance of communication transparency and ongoing support. However, gaps and opportunities remain—particularly in terms of expanding remote and flexible participation formats for individuals with limited mobility or caregiving responsibilities and improving accessibility by offering travel stipends and family-friendly accommodations.

The survey results showed there is a growing awareness of the need to accommodate artists with caregiving responsibilities, but there is a gap between inclusive intent and practical support. While the willingness to accommodate families is encouraging, the lack of on-site childcare limits the true accessibility of these events—especially for single parents or those without additional support. To fully support artists with families and really earn the badge of a family-friendly event, future editions of the events may need to think about more structured childcare options and consider the logistical needs of caregivers as part of their core planning. Of course, that also imposes a heavier financial burden on the organisers and needs to be addressed on the structural level.

But the goal of the survey was achieved: the consortium can now better understand the effectiveness of existing efforts and develop a more coordinated, evidence-based strategy to make Feral Labs and AIRs more socially, economically, and structurally inclusive. While economic inclusivity is widely recognised as a priority, in our case, its full realisation continues to be hindered by structural and financial barriers. The next critical step for the consortium lies in increasing flexibility—across timeframes, participation formats, and logistical planning—to make these programs genuinely accessible to a broader and more diverse group of participants; while we wait for a more structured financial inclusivity scheme.

Environmental Sustainability Within Rewilding Cultures Events

To assess and reduce the environmental impact of RC activities, the Rewilding Cultures consortium has partnered with Društvo Ekologi brez meja (Ecologists Without Borders), a Slovenian NGO, to develop a travel carbon footprint calculator. This online tool, based on the well-established

methodology of the Travel & Climate Calculator,¹ helped estimate the carbon emissions generated by travel to and from Feral Lab events. By automating the process and simplifying data collection (only one-way travel data was collected for the pilot), the results provide valuable insights into the environmental cost of RC mobility.

Primarily, the collected data provided an initial indication of the carbon footprint emissions generated by travel to the events. However, the figures were interpreted in the context of each event's unique location and available travel options. Since (geographical) isolation is a key concept within the Feral Labs series, events are often held in remote locations where car travel and air transport dominate, significantly contributing to carbon emissions. The events also vary in duration, number of participants, and scope—some are locally oriented, while others attract international participants.

For example, at PIFcamp 2023, where local transport options were limited, 72% of travel was by car, accounting for 43% of the total carbon footprint. Similarly, at Field_Notes 2023, which combined international participation with a remote subarctic location in northern Finland, 75% of emissions came from flights. On the other hand, events with a more local focus, such as ArtLabo 2023 on the island of Batz in France, relied heavily on train travel, which represented 49% of the footprint. Culture Yard Summer Camp 2024, where 92% of emissions came from cars, highlights how short-distance, locally oriented events can benefit from alternative transportation—demonstrated by five participants who travelled by bicycle.

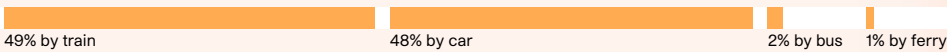
Most importantly, the self-evaluation provided an opportunity for the consortium to refine future event planning and hopefully further reduce environmental impact. Initiatives such as prioritising train or other land-based travel over flights, offering carpooling options, and encouraging local participation (where possible) are already being implemented by many partners. Additionally, the use of shuttles and bicycles as viable travel options presents exciting possibilities for reducing emissions.

¹ <https://travelandclimate.org/>

TRAVEL CARBON FOOTPRINT OF THE FERAL LABS

ArtLabo 2023

38 participants → 2.1 tonnes of CO2eq for 23,183 km travelled



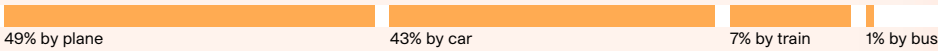
Field_Notes 2023

12 participants → 1.9 tonnes of CO2eq for 25,293 km travelled



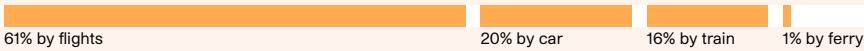
PIFcamp 2023

62 participants → 2 tonnes CO2eq for 24,955 km travelled



Schmiede 2023

57 participants → 2 tonnes of CO2eq for 53,484 km travelled



CC Summer School 2024

4 participants → 1.8 tonnes CO2eq for 8,145 km travelled



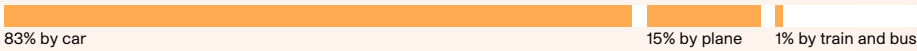
Culture Yard Summer Camp 2024

25 participants → 0.2 tonnes CO2eq for 789 km travelled



Electric Wonderland 2024

22 participants → 1.9 tonnes CO2eq for 9,682 km travelled



TTTLab 2024

11 participants → 11.8 tonnes CO2eq for 46,190 km travelled



Steps Towards a Greener and Inclusive Futures

The project introduced a range of environmental, economic, and social inclusivity measures developed and adopted by the eight partner institutions. Each partner tailored and introduced measures that reflect the realities of their mobility specifics as well as local, cultural, and infrastructural contexts, all in favour of addressing barriers that limit access to artistic opportunities—whether these barriers relate to income, caregiving responsibilities, gender identity, professional status, or geographic location.

Ionian University enhanced its accessibility through regional outreach in Southeast Europe, offering cost-free participation and hybrid event formats that allow remote involvement and support for artists with caregiving responsibilities. Makery/ART2M focused on participation of younger artists in the beginning of their careers at the ArtLabo Retreat Camp by minimising their costs and providing co-funding support. Similarly, Cultivamos Cultura committed itself to supporting young Portuguese artists with scholarships and partnerships that give access to international residencies.

Projekt Atol Institute focused on enhancing family participation at PIFcamp by offering more private accommodation options, while Radiona implemented scholarships for women and family-oriented activities programming. Schmiede introduced an Awareness Manager to maintain a safe, inclusive, and respectful environment for its large international community. Another comprehensive approach was introduced by Bioart Society, which implemented a strategy towards the promotion of gender diverse participation through open calls, elimination of fees, and by introducing safer-space guidelines, while The Culture Yard ensured fair pay, low fees, and a strong code of conduct fostering respect and equality.

Environmental responsibility complements these inclusion efforts, with each partner implementing concrete actions to minimise their ecological footprint. Bioart Society has integrated sustainability approaches into all its operations, promoting overland travel and resource sharing, and introduced ethical fieldwork guidelines. Cultivamos Cultura has committed itself to locally sourced materials and longer residencies, and has been advocating for improved rural mobility, while The Culture Yard has enforced low-carbon travel policies, replacing flights with public transport when possible. Ionian University has adopted energy- and waste-conscious practices, local food sourcing, and expanded hybrid participation to reduce air travel. Makery has increased local involvement and collaboration to cut transport emissions, Projekt Atol has implemented coordinated AIR

MEASURES TOWARDS A MORE SUSTAINABLE AND INCLUSIVE FUTURE PRACTICES

Bioart Society

- introducing ethical guidelines for socio-ecological fieldworking in Kilpisjärvi ←
- transparent communication about locale and facilities & access-riders for participants to ensure more wholesome participation ←

Cultivamos Cultura

- introducing advocacy for improved local transport and low-emission mobility ←
- providing scholarships and mobility support for emerging local artists ←

The Culture Yard

- implementing flight restriction policy for travel under 1,000 km ←
- introducing a unified framework for fair artist fees and inclusive participation at the events ←

Ionian University

- introducing hybrid participation and low-carbon event design ←
- wholesome inclusivity strategy combining regional outreach, access, affordability and hybrid event formats ←

ART/2M (Makery & ArtLabo Retreat)

- focus on local participation to reduce travel ←
- financial support and mentorship for emerging artists ←

Projekt Atol Institute

- minimising air travel through shared international engagement ←
 - more focus on including families and participants with care responsibilities ←

Radiona

- sustainable local mobility and transport reduction ←
- resource-sharing and targeted support for underrepresented and financially constrained participants ←

Schmiede

- introducing a climate awareness coordinator, ride-sharing service and train-first travel policy ←
- implementing an awareness team at the event offering an open, safe, confidential and anonymous channel of communication ←

programmes within nearby institutions to optimise travel. Radiona has reduced mobility-related emissions through bike sharing, pooled transport, and efficient logistics, while Schmiede has introduced a climate awareness coordinator to further encourage sustainable travel and compile environmental impact data.

A Need for Systemic Changes—Moving From Theory to Practice

And what have we learned from this experiment? Despite growing efforts around the importance of economic and social inclusivity in the arts, there remains a significant gap between theory and practice. Many cultural initiatives—including those within the RC network—recognise the need to reach underrepresented communities, to support artists with limited means, acknowledge care work, and reduce structural barriers to participation. Yet, the conditions for meaningful inclusion are still shaped by precarious funding, uneven infrastructure, national economic disparities, and subjective assumptions about who can afford or has time to participate.

Inclusivity stands for openness and diversity, which can bring new perspectives, ideas, and solutions, but unless these values are embedded in everyday organisational practices, such as budget and timeline planning, logistics, and curatorial focus, they face the peril of remaining aspirational. It is easy to frame cultural spaces as welcoming; it is much harder to redesign them in ways that actively accommodate those excluded by economic hardship, caregiving responsibilities, geographic isolation, or lack of professional recognition. This is where many initiatives fail: not in principle, but in execution.

The RC project, specifically with the work within WP6, created a space to rethink the true limitations and efforts towards the goal and thereby pushed the partners to explore, rethink, and address these contradictions more directly. For example, offering family-friendly accommodation, affordable fees, or travel stipends is a step forward—but only when these offers are clearly communicated, distributed, and supported by the infrastructure needed to make them effective. Similarly, prioritising underrepresented voices means little if the application processes or expectations of output replicate existing hierarchies. And claiming family-friendly labels is just an empty phrase when there are no supporting structures and organisational effort behind it.

In parallel, the project's approach to environmental responsibility, while admirable, still operates within the constraints of existing (infra) structures that often prioritise international networking and artistic

exchange, large-scale events, and hyperproduction—practices that inherently carry a significant environmental burden. True transformation would require more radical shifts, especially on the level of the existing infrastructure. This could include greater investments in sustainable travel options or empowering and supporting local creative hubs that reduce the need for excessive mobility, and support funding models for equipment and infrastructure upgrades that prioritise long-term ecological responsibility over short-term project-based impact.

Another key aspect worth mentioning is the lack of open critical evaluation of the use of digital tools, such as generative AI and its infrastructure, which have a severe environmental impact and significantly contribute to global carbon emissions. In the efforts to become truly sustainable, the cultural sector must not only focus on physical mobility but also address the environmental footprint of digital platforms and materials and tools used within its production processes. Hopefully, these issues will be separately addressed within the second part of the WP5 section called *Pilot Scheme for Decisive Steps Towards Zero-Waste Feral Events*. In the growing effort towards more sustainable art production practices, it is crucial that technological solutions do not simply shift the burden from one area to another.

One important impact of this ongoing self-reflection within the RC consortium—combining both WP5 and WP6—was to inform and strengthen the inclusivity of the Mobility Schemes under WP7, which aim to address exactly this disconnect between theory and practice, and to support artists beyond the RC network. The mobility scheme is designed not only to enable participation beyond the project’s core events but also to test what genuine accessibility looks like in real life—whether through financial support for a mother travelling with a newborn baby, promoting sustainable travel, or helping an artist pay her rent while she attends an AIR program abroad. These alternative forms of financial support really move from symbolic inclusion to substantive change.

Conclusion

Building a more economically and socially inclusive cultural field requires more than acknowledging inequity—it demands confronting the mechanisms that sustain it, which we have undoubtedly learned in the self-assessment of WP5. Importantly, these efforts come at a time of growing social and technological transformation. As economic instability rises and technologies like generative artificial intelligence reshape creative labour and access to resources, the risk of deepening social and economic divides within the cultural field becomes more pressing. As a result the practices presented in this report are not simply logistical adjustments—they are critical interventions aimed at rebalancing opportunity, participation, and visibility in a sector that too often assumes mobility, flexibility, and financial security as a basic standard.

On the other hand, the European Commission's push to green the Creative Europe programme signals a broader institutional impact, but it remains unclear how deeply these changes will affect the realities of cultural funding and mobility; considering the current geopolitical shifts across the globe, the importance seems to already be fading. Nevertheless, the environmental challenges should be considered as crucial factors of today (and not just the future to come!). But without stronger policy commitments, (continuous) financial incentives for sustainable practices, and a willingness to challenge deeply established lifestyles and rooted habits in the arts sector (and beyond!), the efforts of projects like Rewilding Cultures run the risk of remaining symbolic rather than transformative. To be truly impactful, the arts must not only adapt to sustainability concerns but also openly advocate for systems that make sustainable practices the norm.

*The research was conducted by Projekt Atol Institute
between 2023 and 2025.*

FERAL ARCHIVES

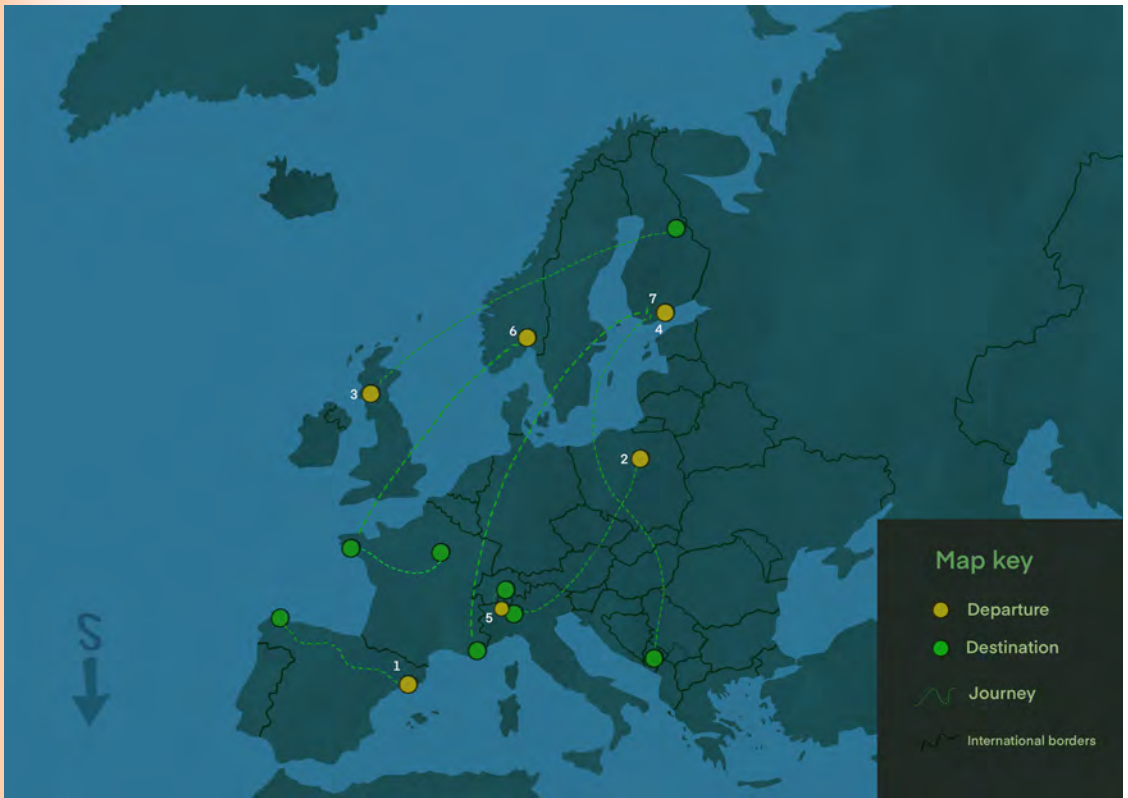
Rewilding Cultures Mobility Conversations

Nicolás Parise Schneider is a geographer and illustrator working across ecology, cartography, and drawing. Born in Mendoza, Argentina, he lives in Corfu, Greece. He describes his practice as “amphibious,” bridging research and creation through community science and territorial work on water and ecosystems. His projects address memory and socio-environmental conflict through maps and field notebooks and include the transnational Plan Colibri initiative and an ongoing atlas of river basins.

The **Rewilding Cultures Mobility Conversation** grant (RCMC) was conceived as an action-oriented response to the urgent need to rethink cultural exchange in more socially and ecologically responsible ways. Through three annual open calls (2023–2025), eight grants of up to €1,400 were awarded each year to artists, researchers, and technologists, supporting mobility or mobility-related work developed in collaboration with organisations outside the consortium. The flexible funding model was tailored to individual needs, enabling forms of movement that fall outside conventional support structures. Rather than promoting productivity-driven travel, the grant frames mobility as a relational, political, and reflective practice, contributing to new imaginaries of cultural exchange across Europe. Each call welcomed projects that critically engaged with mobility itself—through alternative travel choices, shipping practices, or writing and documentation—and supported practices such as slow travel, travelling with family, funding care responsibilities, and addressing barriers linked to disability, racialisation, or precarity.

The diversity of artists and projects supported through the RCMC demonstrates the importance of cultural funding as an enabler of experimental, care-based, and translocal practices that would otherwise remain unsupported. These mobilities foreground values closely aligned with RC’s priorities around inclusion, sustainability, and social cohesion, collectively expanding what artistic mobility can mean today. They foster deep engagement with pressing issues such as the climate crisis, post-industrial ecologies, decolonial memory, and technological futures. By privileging slow research, cross-border collaboration, and community-based knowledge, the supported projects strengthen the cultural ecosystem beyond metropolitan centres and major institutions. They activate rural areas, forests, laboratories, and informal learning spaces as cultural sites, reinforcing the commitment to cultural diversity, environmental responsibility, and innovation. In this broader perspective, RCMC actively shapes a more resilient, inclusive, and forward-looking European cultural landscape.

The following pages contain the mobility maps by year and a selection of a few RCMC projects whose reports have been published on [Makery.info](https://makery.info) between 2023 and 2025 and now become—at the hands of Nicolás Parise Schneider, geographer and illustrator from Mendoza, Argentina, presently living in Corfu, Greece—post-field notes of an alter-immersive experience.



Mobility Conversation 2023

In 2023, [01] Monique Besten travelled from Barcelona to Galicia to develop *Territory Beyond State and Property*, a slow-travel artistic research project supported by Schmiede Hallein.

[02] Anna Czaban moved from Poland to Milan to research socio-artistic methodologies for climate justice at the Institute of Radical Imagination, with support from Ionian University.

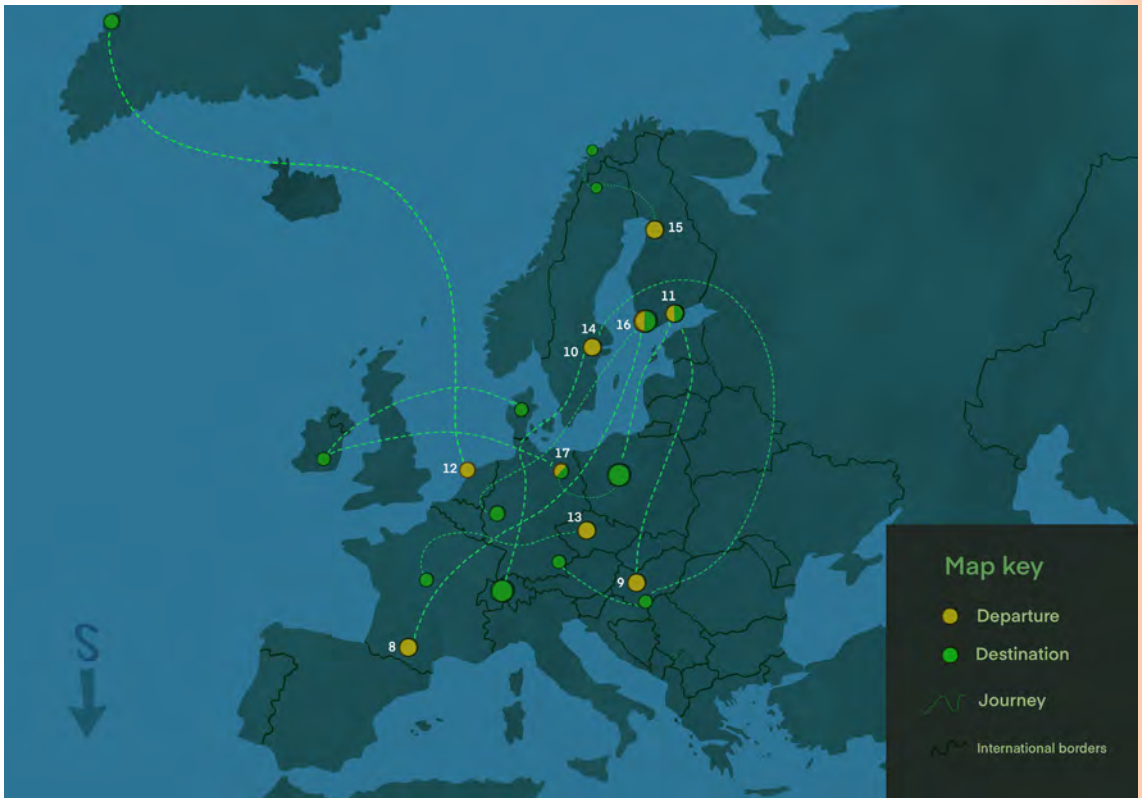
[03] Shona Robin MacPherson from the UK undertook a three-week residency at Mustarinda in Finland, supported by Projekt Atol, to focus on ecological thinking and situated artistic research.

[04] With the support of Bioart Society, Andrew Paterson from Finland explored reversed climate migration routes through a north-to-south journey across Serbia and Montenegro.

[05] Supported by Culture Yard, Priya Prethora undertook a 130-kilometre tribute walk across the Alps from the southern to the northern slopes to engage with embodied memory and landscape.

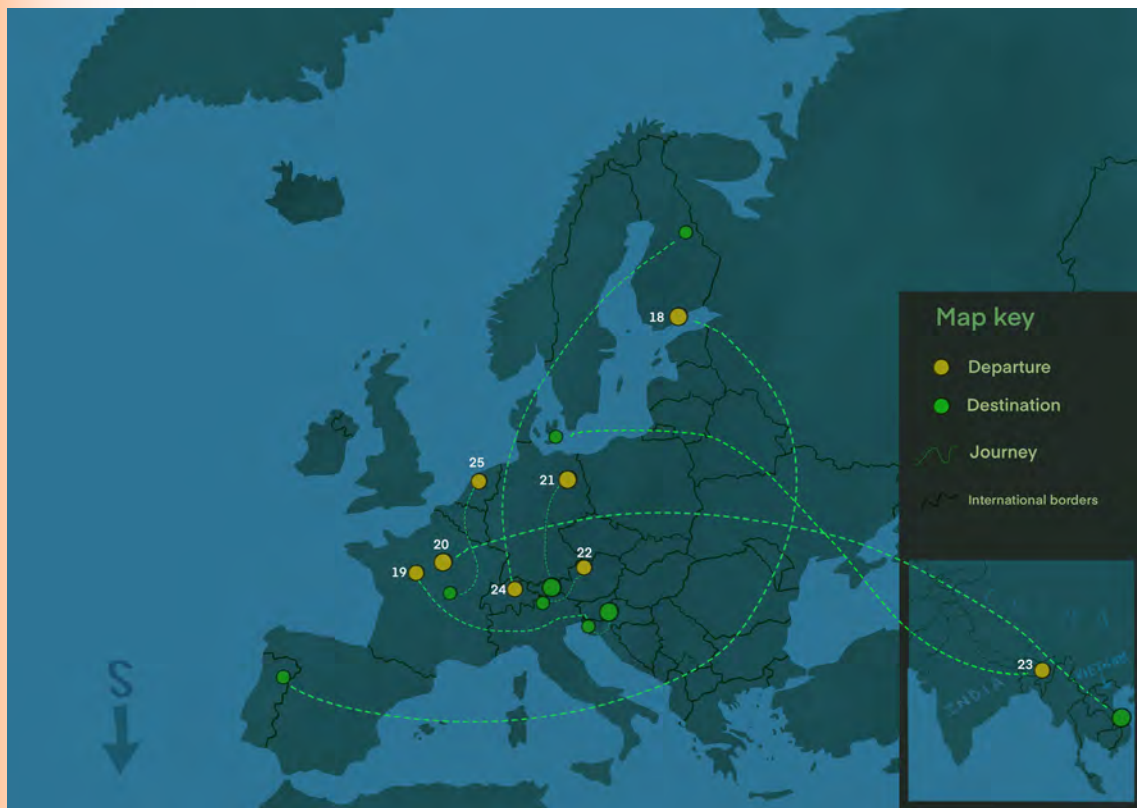
[06] Taylor Alaina Liebenstein Smith travelled by land from Oslo to Concarneau and Paris for the project *A Familiar Veil*, supported by ART2M/Makery, while [07] Bartaku journeyed from Finland to Nice

to develop *Koellevén*, supported by Cultivamos Cultura, exploring land and ecological narratives through slow mobility. Illustration credits: Nicolás Parise Schneider.



Mobility Conversation 2024

In 2024, [08] Rob la Frenais travelled by train from Toulouse to Turku to participate in a residency and research activities supported by Cultivamos Cultura. [09] With the support of Bioart Society, Višnja Kisić and Goran Tomka journeyed from Hungary to Finland, using electric mobility to engage in collaborative research on cultural and ecological practices. [10] Miranda Moss travelled by train from Sweden to rural Switzerland to participate in the SGMK summer camp, supported by Schmiede Hallein, and focus on community-based ecological learning. [11] Björn Kröger undertook a research journey from Helsinki to Poznań and Lake Stechlin in Germany to investigate ecological infrastructures and knowledge systems with the support of Radiona, which also contributed to [12] Jean Danton Laffert Parraguez's journey from the Netherlands to Greenland to develop *Observations on Permafrost*. [13] Maryia Kamarova travelled by train from Prague to Orléans for a residency at Labomedia, supported by ART2M/Makery. [14] Alqumit Alhamad, supported by Culture Yard, travelled from Sweden to Hungary (Röszke) and Rosenheim (Germany) to explore borders, displacement, and environmental change. [15] Johanna Ruotsalainen, with the support of Projekt Atol, undertook a slow journey from northern Finland to Hammerfest, Norway, via Kiruna, Narvik, and Tromsø, while [16] Johanna Sulalampi, also supported by Projekt Atol, travelled to Cologne, Germany, to rehearse with the ensemble Trio Abstrakt, integrating artistic research with performative practice. [17] Ghazal Ramzani, supported by the Ionian University, pursued a multi-country research mobility from Germany to Denmark and Ireland, focusing on disappearing infrastructures and socio-ecological transformation. Illustration credits: Nicolás Parise Schneider.



Mobility Conversation 2025

In 2025, [18] Anni Puolakka, supported by Cultivamos Cultura, travelled with her family from Helsinki, Finland, to the Côa Valley in Portugal to engage in landscape-based research and care-oriented mobility. [19] With the support of Makery, Catherine Lenoble from Tours, France, travelled slowly to Croatia (Rijeka and Zagreb) with her son, experimenting with family-inclusive artistic mobility. [20] Kim Doan Quoc, supported by Ionian University, travelled from Paris, France, to Vietnam to develop *Foliating Memories*, a research project engaging with memory, ecology, and cultural transmission. [21] Ren Loren Britton from Berlin, Germany, participated in a residency at Künstler*innenhaus Büchsenhausen in Innsbruck, Austria, supported by Schmiede Hallein, expanding their ongoing practice around institutional critique and care. [22] Thomas Preindl, supported by Projekt Atol, undertook the transnational journey *Spielplatz Endzeit*, moving from Austria through Tirol into Italy and Switzerland via slow, collective travel. [23] With the support of Bioart Society, Dharmendra Prasad from Assam, India, returned to Fanefjord Commons on the island of Møn, Denmark, to continue long-term engagement with communal land practices. [24] Liora Moser, supported by Culture Yard, travelled by land from Switzerland to Mustarinda, Finland, for a residency centred on ecological cohabitation, while [25] Gemma Ciabattoni from the Netherlands, with the support of Radiona, completed a residency at NØ SCHOOL in Nevers, France, focusing on experimental pedagogy and artistic research. Illustration credits: Nicolás Parise Schneider.

“What is my territory? What is yours? ... The best way to answer questions is to live them.”

“Walking allowed me to listen differently—to landscapes, to people, to the rhythms of everyday life.”



Monique Besten

Mobility period:
July–August 2023
From: Barcelona, Spain
To: The Foundry, Galicia, Spain

Project

Monique Besten undertook a six-week walking journey from Barcelona to Galicia, using slowness as both a method and a political stance. The RCMC grant enabled her to transform mobility into an embodied research practice, rejecting extractive travel in favour of attentive presence.

Bio

Monique Besten is a nomadic artist, writer, and historian. She works site-specifically, using different media with a focus on long-distance performative walking. Her work explores the themes of slowness, sustainability, simplicity, and ecology.

Illustration credits:
Nicolás Parise Schneider.

“Working alongside marine scientists allowed me to think about memory not as something fixed, but as something constantly produced by living systems—something that is always becoming.”

“Biofilm is just as difficult to grasp with words as it is with our hands. It is both a material and living matrix that finds itself in a perpetual in-between state.”

Taylor Alaina Liebenstein Smith

Mobility period:

February 2022 – September 2023

From: Norway

To: France

Project

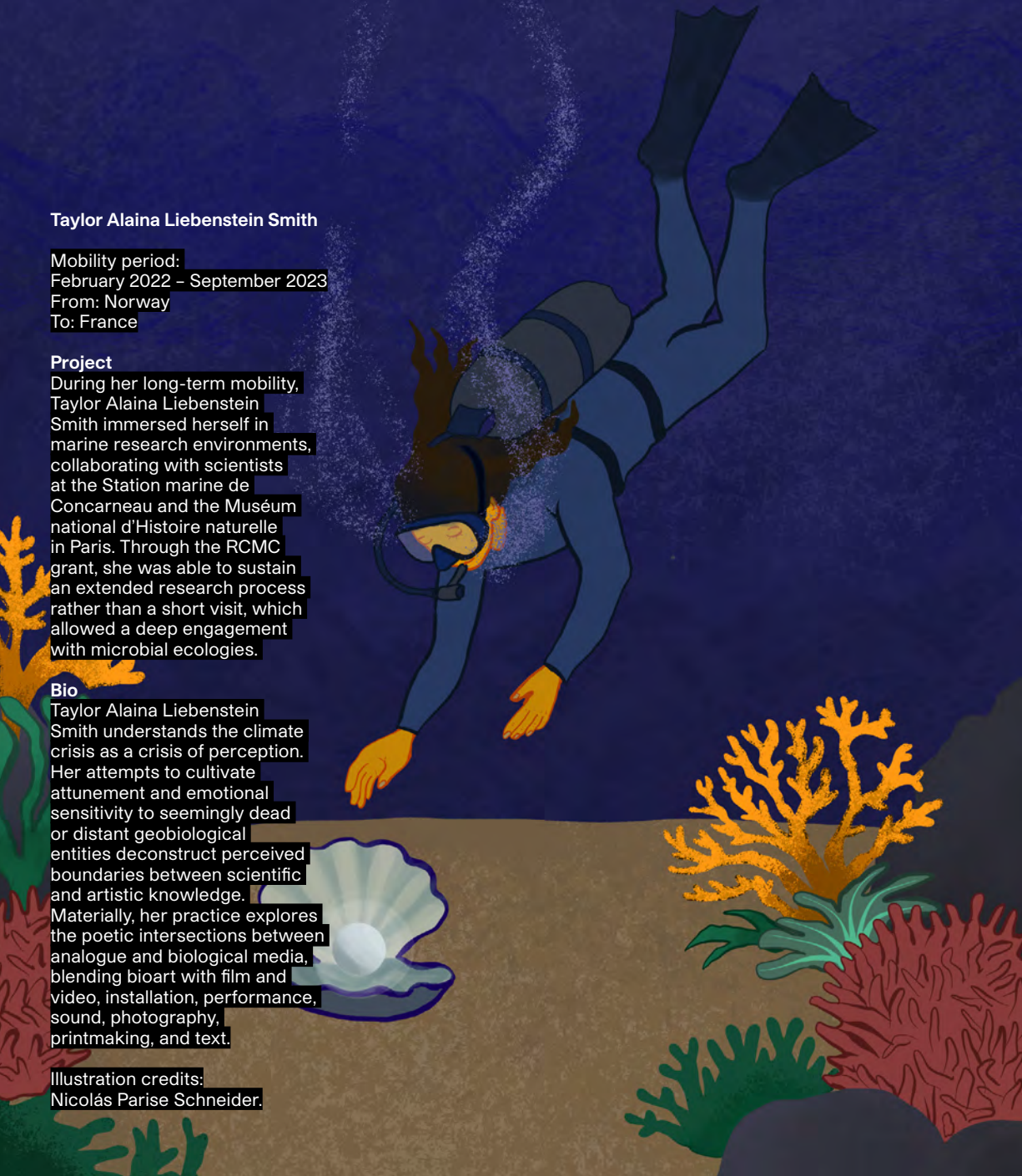
During her long-term mobility, Taylor Alaina Liebenstein Smith immersed herself in marine research environments, collaborating with scientists at the Station marine de Concarneau and the Muséum national d'Histoire naturelle in Paris. Through the RCMC grant, she was able to sustain an extended research process rather than a short visit, which allowed a deep engagement with microbial ecologies.

Bio

Taylor Alaina Liebenstein Smith understands the climate crisis as a crisis of perception. Her attempts to cultivate attunement and emotional sensitivity to seemingly dead or distant geobiological entities deconstruct perceived boundaries between scientific and artistic knowledge. Materially, her practice explores the poetic intersections between analogue and biological media, blending bioart with film and video, installation, performance, sound, photography, printmaking, and text.

Illustration credits:

Nicolás Parise Schneider.



“The ability for me to be in attendance in Mustarinda with my collective and new baby in retrospect feels quite momentous for me and a huge achievement.”

“It set an inspiring starting point in motherhood for me—one interlaced with creativity and wilderness, not isolation.”

Shona Robin MacPherson

Mobility period: September 2023
From: Glasgow, Scotland (UK)
To: Mustarinda residency,
Hyrnsalmi, Finland

Project

Shona Robin MacPherson's mobility to Mustarinda was shaped by care as a central condition of artistic practice. While travelling with her three-month-old baby, she reimagined what residency culture can look like when motherhood is not excluded but embraced. The RCMC grant made it possible for her to attend collectively rather than alone, allowing family life and creative research to coexist.

Bio

Shona Robin MacPherson's practice is a site of constant material searching in a pursuit to give form to intangible processes of ecological systems and to unpick anthropocentric knowledge claims. By employing the use of embroidered dyed cloth, garden-grown plants, and clay, MacPherson's work magnifies the tipping point of enmeshed fabric forms and plant-human hybridity.

Illustration credits:
Nicolás Parise Schneider.



“I travelled ... slow travelling by bus coach and on the last transit by train.”

“This way of moving allowed me to think with the climate, not against it.”

An illustration of a man with a beard, wearing a blue jacket and a grey cap, looking out of a train window. The landscape outside is dark and moody, with a river flowing through it. Several large, bright orange and yellow fires are burning in the landscape, with smoke rising from them. The background shows dark, silhouetted mountains.

Andrew Gryf Paterson

Mobility period:
October–November 2023
From: Finland
To: Serbia & Montenegro

Project

Andrew Gryf Paterson's slow mobility across Southeast Europe foregrounded sustainability as a lived practice rather than a slogan. Supported by RCMC, Paterson chose low-impact transport, embedding ecological awareness into the journey itself, moving through changing landscapes and seasons, situating travel as a site of learning and relational responsibility.

Bio

Andrew Gryf Paterson is an artist-organiser, cultural producer, educator, and independent researcher who specialises in developing and leading inter- and transdisciplinary projects exploring connections between art, digital culture and science, cultural activism, ecological and sustainability movements, cultural heritage, and collaborative networks.

Illustration credits:
Nicolás Parise Schneider.

“Permafrost is not only geology—it is lived reality.”

“Capturing the life of local people, including Inuit communities, was an important point in the residency.”

Jean Danton Laffert Parraguez

Mobility period:
October–November 2024
From: Netherlands
To: Ilulissat, Greenland

Project

Jean Danton Laffert Parraguez's Arctic residency explored permafrost as both an environmental condition and a social experience. The RCMC grant enabled him to do extended fieldwork in Ilulissat and engage deeply with local communities. Through interviews and observation, he foregrounded Indigenous knowledge systems alongside scientific data.

Bio

Jean Danton Laffert Parraguez is a visual artist, researcher, and educator. His work embraces the intersections of art, science, and ecology through art installations, and also embraces various media, such as air, light, living material, and data processing, while exploring hybrid aesthetics between organic species, sensors, and biointerfaces, and releasing biopolitical reflections.

Illustration credits:
Nicolás Parise Schneider.



“My hands were holding a breadboard without holes.
‘What’s the point?’ I thought.”

“That moment made me rethink what
functionality even means.”



Maryia Kamarova

Mobility period: June 2024

From: Belarus

To: Saint-Arnoult-en-Yvelines
& Orléans, France

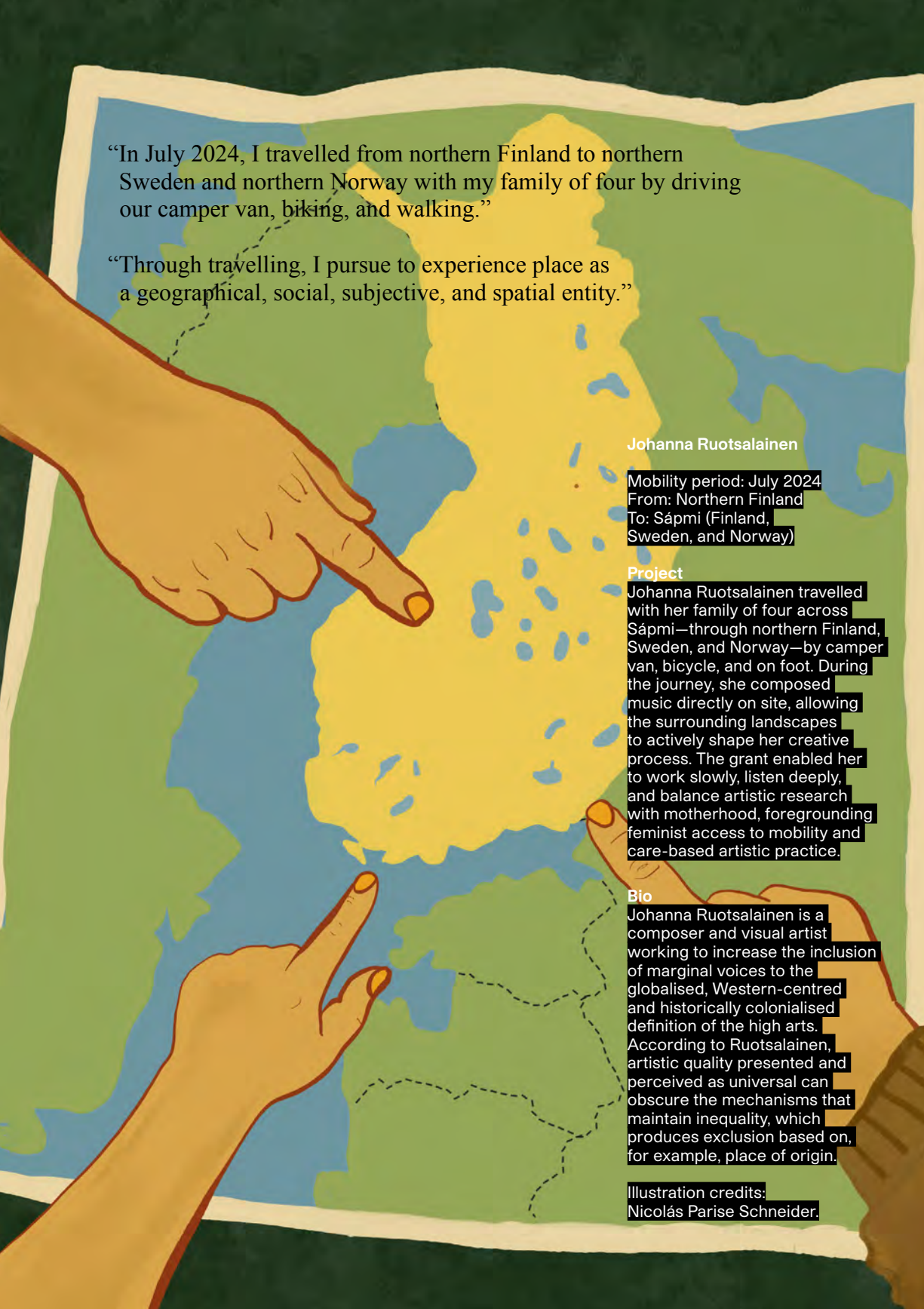
Project

Maryia Kamarova's mobility focused on DIY electronics and open-source experimentation. Through RCMC, she accessed workshops and collaborative spaces that nurtured curiosity and playful failure. Embracing imperfection, Kamarova reflects on how technology can be reimagined through feminist, accessible, and non-hierarchical approaches.

Bio

Maryia Kamarova is an interdisciplinary artist whose practice is situated on the borders of performing arts, scenography, sound, and installation art. She is interested in creating spatial settings that foster a sense of curiosity and attention towards everydayness, emphasising the sonic and visual potential of the non-human world.

Illustration credits:
Nicolás Parise Schneider.



“In July 2024, I travelled from northern Finland to northern Sweden and northern Norway with my family of four by driving our camper van, biking, and walking.”

“Through travelling, I pursue to experience place as a geographical, social, subjective, and spatial entity.”

Johanna Ruotsalainen

Mobility period: July 2024

From: Northern Finland

To: Sápmi (Finland, Sweden, and Norway)

Project

Johanna Ruotsalainen travelled with her family of four across Sápmi—through northern Finland, Sweden, and Norway—by camper van, bicycle, and on foot. During the journey, she composed music directly on site, allowing the surrounding landscapes to actively shape her creative process. The grant enabled her to work slowly, listen deeply, and balance artistic research with motherhood, foregrounding feminist access to mobility and care-based artistic practice.

Bio

Johanna Ruotsalainen is a composer and visual artist working to increase the inclusion of marginal voices to the globalised, Western-centred and historically colonised definition of the high arts. According to Ruotsalainen, artistic quality presented and perceived as universal can obscure the mechanisms that maintain inequality, which produces exclusion based on, for example, place of origin.

Illustration credits:
Nicolás Parise Schneider.

Miranda Moss

Mobility period:
27 July – 4 August 2024
From: United Kingdom
To: Switzerland

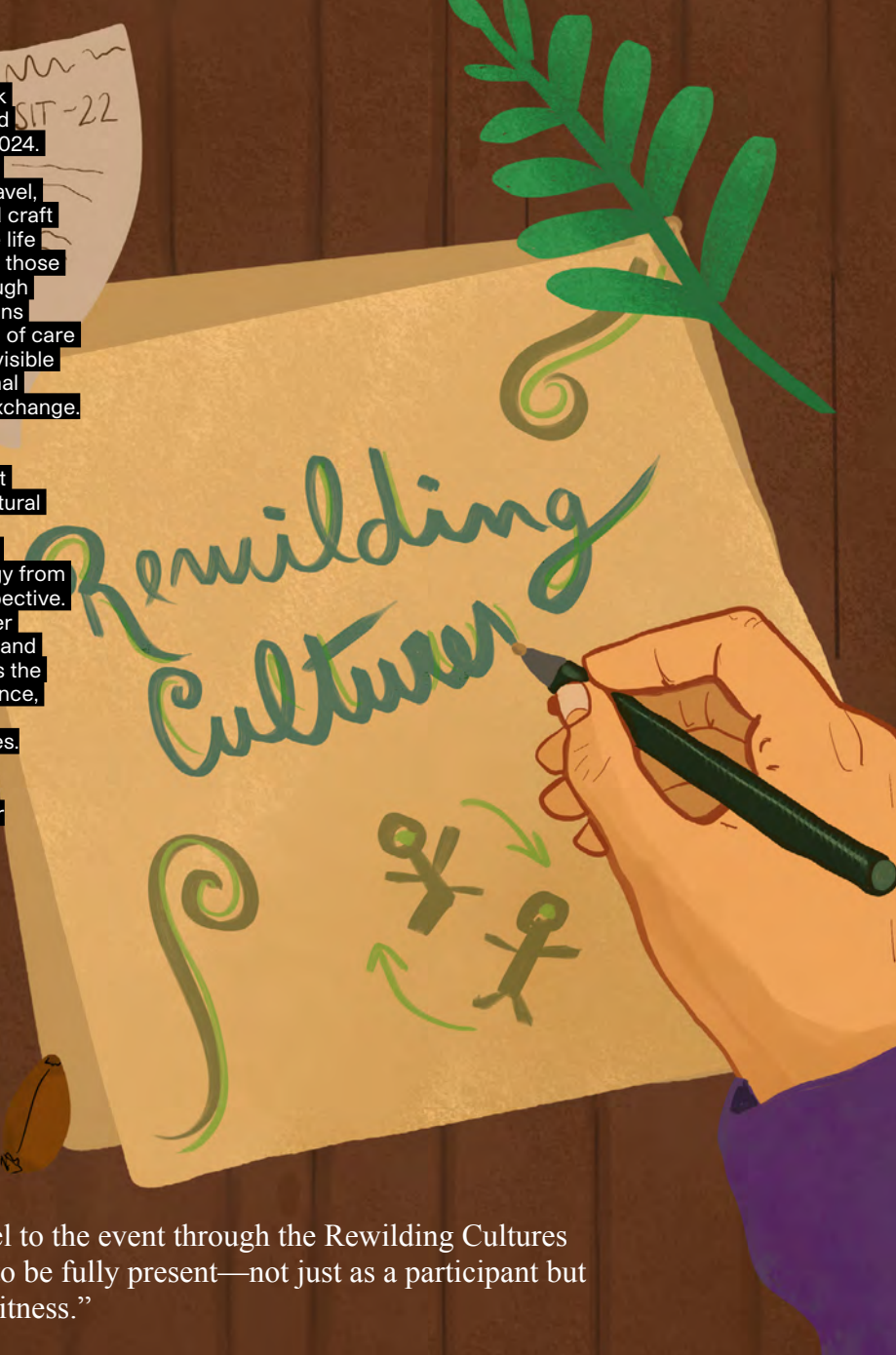
Project

Miranda Moss undertook her mobility to attend and document HomeMade 2024. Supported by the RCMC grant, she was able to travel, observe, participate, and craft a report that extends the life of the encounter beyond those physically present. Through her writing, Moss positions documentation as an act of care and translation, making visible the affective and relational dimensions of cultural exchange.

Bio

Miranda Moss is an artist and transdisciplinary cultural worker focusing on the problematic and hopeful possibilities of technology from a socio-ecological perspective. Her practice has seen her exhibit, give workshops, and perform research across the globe in various art, science, community, academic, public, and hacker spaces.

Illustration credits:
Nicolás Parise Schneider



Rewilding
Cultures

The illustration shows a hand holding a green marker, writing the words 'Rewilding Cultures' in a cursive, flowing script on a piece of yellowish paper. The paper is set against a dark brown, wood-grain background. To the right of the paper, there is a green, stylized leafy branch. Below the paper, there are several brown, seed-like objects. On the paper, below the text, there are some green squiggly lines and a small diagram of two stylized figures with arrows between them, suggesting a cycle or relationship.

“Being able to travel to the event through the Rewilding Cultures grant allowed me to be fully present—not just as a participant but as a listener and witness.”

“Writing about the gathering felt like a responsibility—to translate the atmosphere, the conversations, and the shared concerns into something that could travel further.”

“Most of the time, we were alone ... walking,
finding out more about our imagined past.”

“We realised we were not ready yet to bring
the play into the Alps.”

Thomas Preindl

Mobility period: August 2024

From: Linz, Austria

To: Alpine borderlands
(Czechia, Austria, and Italy)

Project

Thomas Preindl, also known as Toma Pilein, in this performative hiking journey as part of speculative research for Spielplatz Endzeit. Supported by the RCMC grant, Preindl explored survival, play, and communication through embodied rituals—he walked through remote landscapes, reflecting on vulnerability, slowness, and collective imagination. As he tested the limits of the project and recognised when not to intervene, the journey became a powerful ethical gesture as important as the artwork itself.

Bio

Thomas Preindl works as an artist, researcher, and teacher. In his artistic work, he builds techno-critical, sensually tangible machines and creates large-format portrait photographs. Academically, he conducts research on electronic textile transducers and teaches students how to build mechatronic ideas.

Illustration credits:

Nicolás Parise Schneider.



“I started this story as an optimist. I wasn’t new to the idea of traveling by land, otherwise known as surface travel.”

“When added, that overnight surface journeys are still multiple times more expensive compared to flying ... traveling by land as an alternative to flying is kind of a fairy tale.”

Johanna Sulalampi

Mobility period: Autumn 2024

From: Finland

To: Cologne, Germany

Project

Johanna Sulalampi travelled from Finland to Cologne, Germany, to collaborate with the ensemble Trio Abstrakt. Her mobility extended across ferries, overnight trains, and local transport networks, revealing the material, emotional, and temporal costs of slow travel while critically reflecting on the structural barriers that make sustainable mobility difficult. The RCMC grant enabled her to test these contradictions first-hand, positioning mobility as a space for systemic critique rather than individual responsibility.

Bio

Johanna Sulalampi is a multidisciplinary artist working through different mediums with sound as a starting point. Sulalampi works as a freelancer in the field of sound art, music, media art, sculpture, and as a sound designer for performing arts.

Illustration credits:

Nicolás Parise Schneider.



“I embarked on a journey across Europe by train, meeting Indigenous dance practitioners.”

“As a dancer, I feel compelled to explore how movement carries histories of resistance.”

Ghazal Ramzani

Mobility period: December 2024

From: Berlin, Germany

To: Germany, Ireland,
Denmark, and Sweden

Project

Ghazal Ramzani's mobility was centred on dance as an embodied archive. Through the RCMC grant, she travelled to Ireland and Denmark, meeting practitioners of Dabke and Irish dance, situating choreography within anti-colonial struggle. Her encounters reveal movement as political language, connecting land, memory, and collective resilience.

Bio

Ghazal Ramzani is a dancer, choreographer, dance filmmaker, and facilitator. Her movement language is rooted in communal stories, counter-narratives, and indigenous dance traditions. Her dance performances chronicle narratives of injustice, trauma, and resistance that intertwine layers of the mythological, the political, and the intimate.

Illustration credits:

Nicolás Parise Schneider.





Gemma Ciabbattoni

Mobility period: June–July 2025

From: Netherlands

To: Nevers, France

Project

Gemma Ciabbattoni travelled from the Netherlands to Nevers, France, to attend NØ SCHOOL. Supported by the RCMC grant, her experience foregrounded collaborative learning through workshops, feminist hacking practices, and embodied experimentation with technology, expanding her research into hybrid bodies and interaction design.

Bio

Gemma Ciabbattoni is a creative technologist, artist, coordinator, producer, and engineer, exploring the philosophical and theoretical side of various applications in science and technology. With a background in literature, robotics, and biomechanics, she has continued to interweave images of the body, mechanics, art, and technology, particularly how we embody those elements, while also researching further into mixed modalities and perception.

Illustration credits:

Nicolás Parise Schneider.

“How I discovered NØ SCHOOL remains a mystery to me.”

“I choose to think of this collective artwork as a reflection of all of our backgrounds in the summer school, and also that this time, going back to school is a matter of efficiency, our steps as the algorithm is to Nevers.”



Catherine Lenoble

Mobility period: August 2025

From: Tours, France

To: Rijeka and Zagreb, Croatia

Project

Catherine Lenoble travelled with her eight-year-old son, exploring intergenerational mobility through care and slowness. The RCMC grant enabled a frugal, low-carbon journey to Croatia, where she engaged with commons-based publishing initiatives. Her reflections foreground mobility as relational practice, where time, attention, and shared discovery matter more than efficiency.

Bio

Catherine Lenoble is active in the field of independent art as well as cultural spaces, digital cultures, and maker communities. Lenoble has developed practices around creative on/offline writings and publishing. She has published hybrid fictions (web/print) and contributed to various collective works.

Illustration credits:

Nicolás Parise Schneider.

“What happens when you move slowly with a child?”

“Travel by train. Take my time.”

Citations Collected from

- Besten, M. (2024, January 4). *Walking the Questions: A Slow Journey in a Three-Piece Business Suit*. Makery. <https://www.makery.info/en/2024/01/04/english-walking-the-questions-a-slow-journey-in-a-three-piece-business-suit/>
- Ciabattoni, G. (2025, September 30). *Rewilding Cultures Mobility: Gemma Ciabattoni at NØ SCHOOL*. Makery. <https://www.makery.info/en/2025/09/30/english-rewilding-cultures-mobility-gemma-ciabattoni-at-no-school/>
- Gryf Paterson, A. (2024, May 10). *Rewilding Cultures With Andrew Gryf Paterson: Leaving Comfort Zones and Academically Clean Spaces (1/2)*. Makery. <https://www.makery.info/en/2024/05/10/english-rewilding-cultures-with-andrew-paterson-leaving-comfort-zones-and-academically-clean-spaces-1-2/>
- Gryf Paterson, A. (2024, May 10). *Rewilding Cultures With Andrew Gryf Paterson: How to Live in Symbiocenic Harmony With Our Changing Environments (2/2)*. Makery. <https://www.makery.info/en/2024/05/10/english-rewilding-cultures-with-andrew-paterson-how-to-live-in-symbiocenic-harmony-with-our-changing-environments-2-2/>
- Kamarova, M. (2024, September 1). *Sharing Open-Source Knowledge: From Do-It-Yourself Electronics to Artist-Run associations*. Makery. <https://www.makery.info/en/2024/09/01/english-sharing-open-source-knowledge-from-do-it-yourself-electronics-to-artist-run-associations/>
- Laffert Parraguez, J. D. (2025, March 13). *Rewilding Cultures Conversations: Observations on Permafrost*. Makery. <https://www.makery.info/en/2025/03/13/english-rewilding-cultures-conversations-observations-on-permafrost/>
- Lenoble, C. (2025, November 4). *In Croatia With Rewilding Cultures: Catherine Lenoble in Search of Frugal Web and Companion Stories*. Makery. <https://www.makery.info/en/2025/11/04/en-croatie-avec-rewilding-cultures-catherine-lenoble-en-quete-de-web-frugal-et-de-recits-compagnons/>
- MacPherson, S. R. (2023, November 10). *Mobility in Motherhood: A Personal Experience*. Makery. <https://www.makery.info/en/2023/11/10/english-mobility-in-motherhood-a-personal-experience/>
- Moss, M. (2024, October 12). *Feral Circuits: Rewilding Electro-Cultures at HomeMade 2024*. Makery. <https://www.makery.info/en/2024/10/12/english-feral-circuits-rewilding-electro-cultures-at-homemade-2024/>
- Pilein, T. (2025, November 25). *Spielplatz Endzeit: Digital Rites in Alpine Borderlands*. Makery. <https://www.makery.info/en/2025/11/25/english-spielplatz-endzeit-digital-rites-in-alpine-borderlands/>
- Ramzani, G. (2025, May 20). *Embodied Defiance: Exploring Indigenous Dances as Practices of Anti-Colonial and Ecological Reclamation*. Makery. <https://www.makery.info/en/2025/05/20/english-embodied-defiance-exploring-indigenous-dances-as-practices-of-anti-colonial-and-ecological-reclamation/>
- Ruotsalainen, J. (2024, October 15). *Composing in Lapland, Where the Landscape Becomes a Verb*. Makery. <https://www.makery.info/en/2024/10/15/english-composing-in-lapland-where-the-landscape-becomes-a-verb/>
- Smith, T. A. L. (2023, November 6). *A Familiar Veil: The Microorganisms That Carry Our Memories*. Makery. <https://www.makery.info/en/2023/11/06/a-familiar-veil-les-microorganismes-qui-portent-nos-souvenirs/>
- Sulalampi, J. (2024, November 12). *A Fairy Tale or a True Possibility: Traveling Long Distances by Land and Sea as a Substitution for Flying*. Makery. <https://www.makery.info/en/2024/11/12/english-a-fairy-tale-or-a-true-possibility-traveling-long-distances-by-land-and-sea-as-a-substitution-for-flying/>

FERAL ARCHIVES

Feral Residencies

Culture Yard AIR: Louise Foo

1 January 2024 – 2 June 2025

Sound artist Louise Foo explores planetary crises through immersive sonic environments. During her residency at The Culture Yard, she worked with scientific datasets to create sound installations addressing climate change and environmental degradation. One focus of her research was the real-time sonification of melting ice sheets, translating climate data into audible experiences. Foo's practice bridges art and science, transforming abstract information into emotional, embodied encounters. By inviting audiences to listen to ecological processes, she fosters awareness and empathy for distant environments. Her work proposes sound as a tool for climate communication, helping people connect sensorially with global environmental change.

TTTfellow II: Robert Lisek

1–29 March 2024

Polish artist and mathematician Robert Lisek developed *Zombie Embryos*, a speculative bioart project examining IVF, gene editing, and reproductive technologies. During his residency, he combined performance, installation, and participatory workshops to explore ethical and social questions around biotechnology. His work engages audiences in discussions about future reproduction, biopolitics, and technological control over life. Lisek's practice merges scientific knowledge with critical storytelling, using fiction and role-play to examine real-world dilemmas. Through *Zombie Embryos*, he invites reflection on how emerging technologies reshape bodies, identities, and social structures.

TTTfellow II: Clarissa Ribeiro

1–29 March 2024

Brazilian multimedia artist Clarissa Ribeiro presented *Window Water \${object}* *Moving*, an interactive installation exploring ectogenesis and machine learning. Her project invited visitors to interact with data-driven systems that reflect on artificial

gestation and reproductive futures. Ribeiro's work critiques biopolitics, surveillance, and population control, examining how technology shapes bodily autonomy. Combining coding, performance, and digital interfaces, she creates participatory environments that question power structures embedded in data systems. Her residency provided space to further develop her research into speculative reproductive technologies and their social consequences.

TTTseer: Ken Rinaldo

5–14 April 2024 (online)

Ken Rinaldo is an internationally recognised artist known for interactive installations that develop hybrid ecologies with animals, algorithms, plants, and bacterial cultures. His practice operates as a platform for hacking complex social, biological, and machinic symbioses, foregrounding living systems as critical tools for interrogating technology. Over the years, Rinaldo has explored evolutionary and emergent software agents, robotics, and bioart as sites for ethical reflection and co-existence. During his TTTseers online residency, he shared long-term research on post-human ecologies, agency, and networked organisms, contributing to collective discussions on how art can model more-than-human futures and self-organising systems.

TTTseer: Yiannis Melanitis

5–14 April 2024 (online)

Yiannis Melanitis is a contemporary artist whose practice emphasises information as a central conceptual force in art and culture. His research focuses on biological dynamics in art, and he is known for genetically modifying the Melanitis leda butterfly as part of his artistic inquiry. His work has been exhibited internationally at major venues including Ars Electronica and MACRO Museum. During his TTTseers online residency, Melanitis contributed theoretical and artistic perspectives on bioengineering, data aesthetics, and the ethics of manipulating living organisms. His participation opened critical conversations on authorship, responsibility, and technological intervention in biological systems.

TTTseer: Elizabeth Littlejohn
5–14 April 2024

Elizabeth Littlejohn is a communications professor, human rights activist, photojournalist, and filmmaker who focuses on sustainable design. Her work has been shown at film festivals internationally. She directed *The City Island*, a feature-length documentary about the demolition of homes on Toronto Island and the islanders' stewardship of the Toronto Island Park. During her residency in Crete, she developed *Mooncalf Homuncularium* (2024) with WhiteFeather Hunter, a film documenting the sculpture and ritual performed by the TTTlabs BioFeral.BeachCamp participants.

Radiona's AIR: Marlon Barrios Solano
14–28 April 2024

During his residency at Radiona, interdisciplinary artist Marlon Barrios Solano explored AI generativity and computational poetics. Using open-source tools, he developed browser-based performances and interactive experiments. His research focused on real-time interaction, generative systems, and algorithmic creativity. Barrios Solano's practice blends dance, coding, and digital performance, investigating how bodies and machines co-create meaning. The residency allowed him to deepen his exploration of AI as a creative collaborator, opening questions about authorship, agency, and future performance practices.

PIFresidency: Julian Chollet
5 June–3 August 2024

Julian Chollet is a researcher, educator, and founder of mikroBIOMIK Society, working at the intersection of citizen science, pedagogy, and ecological awareness. During his residency at Projekt Atol, he developed *Circular Chromatography*, a participatory method for visualising soil health and environmental conditions. Through workshops at Krater (Ljubljana) and PIFcamp (Soča Valley), participants learned how to create and interpret soil chromatograms, transforming scientific observation into a collective learning

experience. Chollet expanded this practice into a bilingual guide, framing soil analysis as both scientific inquiry and cultural practice. His work emphasises accessibility, collaboration, and environmental literacy, encouraging people to engage directly with the living systems beneath their feet.

Chronicler-in-Residency: Roger Pibernat
1 July – 14 August 2024

Barcelona-based illustrator and musician Roger Pibernat was Makery's Chronicler-in-Residence. Throughout his residency, he documented festivals, workshops, and artistic gatherings through drawings, written reflections, and live sketches. His reportage covered events such as the Cultivamos Cultura Summer School and Electric Wonderland, capturing the atmosphere and informal exchanges that shape creative communities. Pibernat's practice merges experimental music, live coding, and visual storytelling, producing hybrid forms of documentation that sit between journalism and art. By observing and drawing in real time, he creates intimate portraits of collective processes, offering a personal lens on cultural production and collaboration.

Radiona's AIR: Stefanie Wuschitz
22–28 July 2024

Austrian artist Stefanie Wuschitz led the project *Eco-Feminist Decolonial Hardware*, developing ethical electronics from local materials. During her residency, she experimented with DIY hardware practices that challenge extractive technology production. Her work promotes feminist pedagogy, collective learning, and sustainable electronics. Wuschitz's practice questions who produces technology and under what conditions, advocating for accessible and community-based making. The residency provided space for workshops and collaborative prototyping, exploring alternatives to industrial hardware production.

Cultivamos Cultura AIR: Stephanie Rothenberg

7-20 August 2024 & 19 May – 10 June 2025

During her residency at Cultivamos Cultura, US-based artist Stephanie Rothenberg researched hybrid biomaterials derived from ocean waste. She developed sculptural substrates using shells, seaweed, and plastic debris collected from coastal environments. Her work critiques sustainability narratives and the politics of “blue economies”. By transforming waste into artistic material, Rothenberg reflects on human–marine relationships and environmental responsibility. Her project merges ecological research with sculptural practice, creating tactile responses to ocean pollution and climate change.

FeralAIR: Maria Nalbantova

11–21 September 2024

Maria Nalbantova developed *What-Are-Stones*, a speculative eco-technological project focused on water conservation and pollution. During her residency, she collected stones from the Salzach River and embedded them with conductive fibres and DIY biomaterials to create sensor-based objects. These devices measured water quality and visualised environmental data, combining citizen science with mythological storytelling. Nalbantova’s work reflects on future scenarios of water scarcity and ecological crisis, asking how humans might relate differently to natural resources. Her practice blends technological experimentation, craft, and eco-fiction, creating poetic yet critical tools for environmental awareness and public engagement.

FeralAIR: Daniela Brill Estrada

11–21 September 2024

Daniela Brill Estrada’s project *Shapeshifting Matter for an Unstable Universe* critically addresses colonial scientific frameworks and rigid classification systems. During her residency at Schmiede Hallein, she explored alternative ways of understanding matter, nature, and bodies beyond Western taxonomies. Her work proposes fluid,

shifting categories that resist hierarchical thinking, emphasising interdependence and transformation. Through artistic research, writing, and experimentation, she advocates for collaborative knowledge production across disciplines. Brill Estrada’s practice challenges dominant epistemologies and opens space for speculative futures where science, art, and ancestral knowledge coexist. Her residency became a laboratory for reimagining how we name, study, and relate to the world.

FeralAIR: Alexandra Reichart & Matthias Krauß

11–21 September 2024

Artist duo Alexandra Reichart and Matthias Krauß developed *Luminous Touch*, a wearable technology project exploring non-verbal communication and embodied interaction. During their residency, they designed bodysuits embedded with sensors and light elements that respond to touch and movement. Their research investigates intimacy, empathy, and sensory exchange beyond spoken language. Combining robotics, kinetic art, and textile craft, they create interactive systems that encourage users to communicate through bodily presence. Their work challenges conventional interfaces and highlights the emotional dimensions of human connection. Through *Luminous Touch*, they propose alternative futures for how we relate, care, and communicate with one another.

TTTseer: Kristina Sarli & Augusto Calçada (Terrabytes Glitch Lab)

15–25 September 2024 (online)

In the online interaction with participants of the TTTlabs BioFeral.BeachCamp, the Terrabytes Glitch Lab developed an immersive virtual reality project to explore new forms of creative expression in art residencies that blend the digital and physical worlds. The TTTLab Official VR World reflects Terrabytes Glitch Lab’s commitment to open-source innovation, connecting biolife, technology, and art in a collaborative digital platform. The project amplifies a shared digital space, where global participants can engage with one another, regardless of location, to explore each other’s artwork, beyond the limitations of everyday life.

Ars Bioarctica AIR: Lauri Linna
22 September – 6 October 2024

Finnish artist Lauri Linna works with atmospheric ecologies, wilderness, and plant-based systems. During his residency at Kilpisjärvi Biological Station, he investigated wind as a living and dynamic ecological agent. His research focused on how air currents transport seeds, microbes, and chemical signals, shaping ecosystems in subtle but powerful ways. Linna's approach blends poetic observation with scientific research, positioning the atmosphere as an active participant in ecological processes. His broader artistic practice includes plant interfaces, selective breeding experiments, and speculative projects such as a plant gene bank for future mining sites. Through these works, he explores how humans relate to invisible natural forces and long-term environmental change.

TTTfellow III: Heidi Hehnly-Chang
23 September – 18 October 2024

Cell biologist Heidi Hehnly-Chang collaborated on a speculative art project examining artificial embryonic development. Drawing on her scientific background, she explored the societal implications of ectogenesis—gestation outside the human body. Her residency bridged laboratory science and artistic research, contributing scientific insight to interdisciplinary collaboration. Hehnly-Chang's work examines ethical questions around reproduction, care, and technological intervention. By participating in artistic inquiry, she expands how scientific knowledge can circulate beyond academic contexts, engaging broader audiences in discussions about future life technologies.

TTTfellow III: Boryana Rossa
23 September – 18 October 2024

Bulgarian artist and professor Boryana Rossa developed a lecture-performance exploring mythological and biotechnological narratives of reproduction. Using drawing, video, and live performance, she examined gender, hospitality, and speculative futures of care.

Her work blends academic research with artistic storytelling, questioning dominant narratives around bodies and reproduction. Rossa's residency allowed her to experiment with hybrid formats that combine pedagogy and performance. Through this project, she invites audiences to rethink kinship, technology, and feminist futures.

TTToracle: Sunčica Ostoić
23 September – 4 October 2024 (online)

Sunčica Ostoić is an independent art theorist and curator focusing on science, technology, and the body. She holds a PhD in transdisciplinary studies and is a guest lecturer at the Academy of Fine Arts in Zagreb. As a co-founder of the NGO KONTEJNER, she has initiated and curated major international festivals, including Extravagant Bodies, Touch Me, and Device_art, all dedicated to experimental art practices engaging with embodiment and technology. During her online residency at TTToracles, Ostoić contributed critical perspectives on posthumanism, feminist technoscience, and curatorial ethics, sharing long-term research on how emerging technologies reshape bodily imaginaries and artistic practices.

TTToracle: Olga Majcen Linn
23 September – 4 October 2024 (online)

Olga Majcen Linn is an independent curator and researcher working at the intersection of art, science, and technology. She holds a PhD in arts and media from the Faculty of Media and Communication in Belgrade and lectures at the Academy of Fine Arts in Zagreb. As a co-founder of KONTEJNER | bureau of contemporary art praxis, she has curated numerous exhibitions, performances, and festivals focused on experimental and interdisciplinary practices. Within TTToracles, Majcen Linn reflected on curatorial methodologies, institutional critique, and long-term collaborative models, contributing her extensive experience in developing platforms that bridge artistic research and scientific inquiry.

TTToracle: Charlotte Jarvis

23 September – 4 October 2024 (online)

Charlotte Jarvis is an artist working between art and science, exploring the future of reproduction and the body as a liminal site of transformation. Her practice includes radical bioart experiments such as recording music onto DNA, growing her own tumour, and externalising her heartbeat. She is currently involved in projects creating “female” sperm in collaboration with scientists in Leiden, developing a “collaborative uterus” with a team in Argentina, and producing an AI-parented artificial embryo model in Denmark. During her TTToracles residency, Jarvis shared insights into speculative reproduction, bioethics, and hybrid futures. She has exhibited internationally and currently lectures at the Royal College of Art in London.

TTToracle: Laura Splan

23 September – 4 October 2024 (online)

Laura Splan is a New York-based transdisciplinary artist working at the intersections of science, technology, and culture. Her collaborations result in multimedia installations that reinterpret artefacts from post-human and biomedical landscapes. Splan's work has been presented at major institutions, including MoMA (NYC), the Nobel Prize Museum (Stockholm), Brooklyn Museum, and Centre d'Art Santa Mònica (Barcelona). During her TTToracles online residency, Splan contributed her expertise in biomaterial culture and speculative futures, reflecting on how scientific imagery and data shape contemporary imaginaries of health and risk.

The Culture Yard AIR: Vibe Overgaard

1 March – 1 September 2025

Danish artist Vibe Overgaard works with video, performance, and sculpture to examine capitalism's cultural and emotional legacies. During her residency at The Culture Yard, she developed a project exploring political economy through embodied and material practices. Her research investigates intimacy, labour histories, and the structures

that shape contemporary life. Collaborating with cultural institutions and research networks, Overgaard creates installations and performances that reflect on power relations and social systems. Her work invites audiences to question inherited economic models and imagine more caring and sustainable futures. The residency allowed her to deepen long-term research into how bodies carry economic histories.

Chronicler-in-Residency: Chrysa Chouliara

1 June – 31 September 2025

Chrysa Chouliara is a Swiss-based creative working at the intersection of science, design, and storytelling. She collaborates with academic research environments, translating complex scientific ideas into clear, engaging visual narratives. Her practice spans editorial design, archival research, and experimental publishing, with a particular love for offset printing and material-led storytelling. As a Chronicler-in-Residency, she covered events such as HomeMade camp, ArtLabor Retreat, and the Taboo – Transgression – Transcendence (TTT) conference in Ljubljana.

Ars Bioarctica AIR: Agáta Marzecová

14–28 June 2025

Agáta Marzecová is a researcher in ecology, photography, and new media, who has a long-standing interest in nature—both the geophysical realm and the cultural (and historically changing) understandings of what is natural. During her two-week-long residency at Kilpisjärvi Biological Station, Sápmi, Agáta Marzecová used immersive walking, field notes, and attentive observation to explore subarctic flora and critique conventional scientific ways of knowing. Her practice foregrounds a “botanical gaze” that challenges extractive and colonial legacies in ecology and classification history and invites reconsideration of how attention and care might reshape ecological understanding beyond rigid taxonomies.

Cultivamos Cultura AIR: Erich Berger

21 June – 13 July 2025

During his residency, Erich Berger developed a project on more-than-human soundscapes that extends his research at the intersection of art, science, and technology. Berger is a Helsinki-based artist, curator, and researcher, whose practice critically examines how scientific and technological systems shape contemporary society. His work engages with the materiality of information and treats information and technology as artistic media. Drawing on his interest in deep time and hybrid ecologies, the residency project incorporates geological, atmospheric, and radiogenic processes.

Cultivamos Cultura AIR: Laura Beloff

21 June – 13 July 2025

During her residency, Laura Beloff developed a project informed by her long-standing research at the intersection of art, biology, and technology. As an internationally acclaimed artist and researcher based in Finland, Beloff works between artistic practice and academic inquiry. Her research-driven approach draws on biology, artificial intelligence, robotics, and human-technology relations. In recent years, her work has focused on the converging domains of biological and technological systems. This residency reflected her sustained interest in material intelligence and wetware as artistic and theoretical concerns.

Radiona.org AIR: Hannah Perner-Wilson

22–28 July 2025

Hannah Perner-Wilson is an artist working with properties of materials, combining traditional and contemporary craft techniques and developing new techniques for building electronics that emphasise materiality and process. Through creating examples, giving workshops, and publishing online documentation, Hannah orients her work towards demonstrating how we can engage with electronics in new ways. During her residency entitled *Electronic Puppetry*, Hannah, together with Joreg

Djerzinski, explored performative and material approaches to electronics through handcrafted interfaces, soft mechanisms, and embodied interaction. Building on her long-term research into “electronics without parts”, the project has focused on low-tech, tactile, and process-oriented methods that reframe electronic systems as expressive, playful, and accessible tools.

Radiona.org AIR: Mika Satomi

22–28 July 2025

Mika Satomi is an artist, designer, and educator working in the fields of e-textiles, interaction design, and physical computing. She often collaborates with musicians and performers, creating technology-embedded costumes and interactive systems. Her residency work was connected to The Circular BLUE project, which Mika has been developing together with Persicaria Tinctoria in an urban community garden in Berlin. The project is about implementing a sustainable and circular textile dye practice in an urban environment together with neighbours. By foregrounding a DIY approach to making, during the residency, Mika explored how low-tech, hands-on dye practices can be reintroduced into urban environments as shared, community-driven knowledge.

PIFresidency: Fransisca Tan

25 July – 29 August 2025

Fransisca Tan is an Austrian food experience designer, blending her expertise in cognitive sciences, communication, gastronomy, and IT. With a deep-rooted passion for exploring and creating transformative human experiences, Fransisca uses the multisensory power of food as her canvas. During her residency, she focused on community-oriented food practices, drawing connections between the rituals of food preparation and the creative process. Activities unfolded through field explorations, intimate research sessions, hands-on workshops, and culminated in a final presentation, inviting participants to reflect on food not just as sustenance but as a material for making, a metaphor for change, and a shared cultural language.

FeralAIR: Julia Vollmer
15–27 September 2025

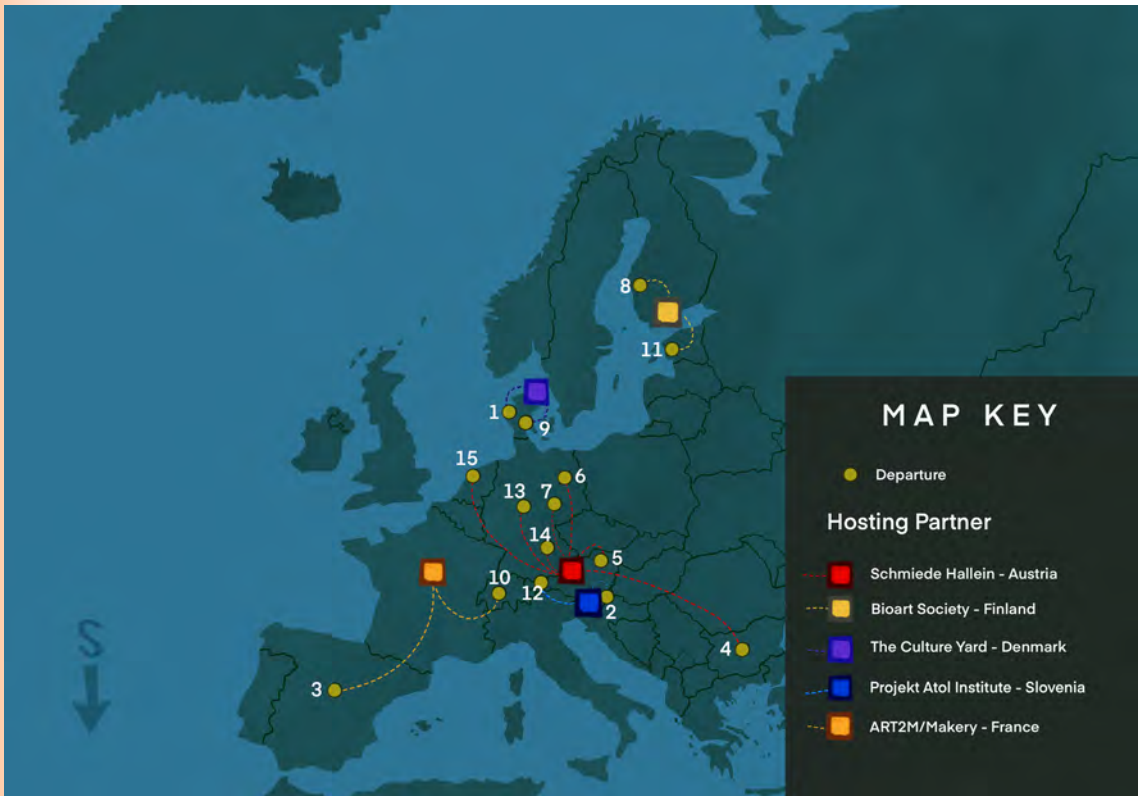
Julia Vollmer is a media artist and creative technologist who works within the field of machine learning, embedded systems, and electronics. She is interested in code, machine–human relationship, wearables, machine learning, and the hidden labour and resources that fuel the technology around us. In her residency project, she subverted the technology used by machine learning by reusing it in physical, material ways, harnessing the heat produced when generating AI content. The heat was transformed into tangible and visible installations—in one of them, it could be directly felt by touch, and in another, it was used to melt wax.

FeralAIR: Paul Takunda Chiwona
17–27 September 2025

Paul Takunda Chiwona was born in Harare, Zimbabwe, and is currently based in Vienna, Austria. He is a media artist and researcher whose practice operates at the intersection of art-making, research, and social justice. By examining the links between digital culture, capitalism, and colonialism, his work critically engages the tensions that define contemporary networked societies. His residency work confronts a personal online archive devoted to Rhodesia, the former British colony that is now Zimbabwe. The archive circulates nostalgic texts, racist narratives, and images that romanticise and normalise a lost colonial order. One hundred fifty-nine unique images have been forcibly extracted from the site, organised on thermal paper, and partially burned. Recorded on this autodestructive canvas, the archive's visual logics and the worldview it strives to preserve are exposed to material decay. What memories can we not afford to burn? What must be destroyed?

FeralAIR: Saskia Freeke
17–28 September 2025

Saskia Freeke is an artist, creative coder, interaction designer, visual designer, and educator. In her work, she focuses on structure, geometry, and playfulness, creating both digital and physical work. During the residency, she created an installation that opened a space for reflection on our daily interactions with digital devices. By making the mechanisms behind the technology transparent in various ways, she highlighted the beauty of technology. The installation featured playful interactions that encouraged visitors to engage and reflect.



Map I: Feral Residencies 2024—2025, Lambert projection.
Illustration credits: Nicolás Parise Schneider

Between January 2024 and September 2025, the Feral Residencies enabled a dense network of artistic and research mobilities connecting Europe, North America, and Asia. The following two maps trace 35 indexed mobilities, both physical and online, and across multiple residency formats.

[01] Louise Foo travelled from Denmark to The Culture Yard, Denmark (1 January 2024 – 2 June 2025); [02] Julian Chollet from Slovenia to Projekt Atol Institute, Slovenia (5 June–3 August 2024); [03] Roger Pibernat from Spain to ART2M / Makery, France (nomad, 1 July–14 August 2024); [04] Maria Nalbantova from Bulgaria to Schmiede Hallein, Austria (11–21 September 2024); [05] Daniela Brill Estrada from Austria to Schmiede Hallein, Austria (11–21 September 2024); [06] Alexandra Reichart from Germany to Schmiede Hallein, Austria (11–21 September 2024); [07] Matthias Krauß from Germany to Schmiede Hallein, Austria (11–21 September 2024); [08] Lauri Linna from Finland to Bioart Society, Finland (22 September–6 October 2024); [09] Vibe Overgaard from Denmark to The Culture Yard, Denmark (1 March–1 September 2025); [10] Chrysa Chouliara from Switzerland to ART2M / Makery, France (nomad, 1 June–31 September 2025); [11] Agáta Marzecová from Estonia to Bioart Society, Finland (14–28 June 2025); [12] Fransisca Tan from Austria to Projekt Atol Institute, Slovenia (25 July–29 August 2025); [13] Julia Vollmer from Germany to Schmiede Hallein, Austria (15–27 September 2025); [14] Paul Takunda Chiwona from Germany to Schmiede Hallein, Austria (17–27 September 2025); [15] Saskia Freeke from the Netherlands to Schmiede Hallein, Austria (17–28 September 2025).



Map II: Feral Residencies 2024–2025, Gall–Peters projection.

Illustration credits: Nicolás Parise Schneider

[16] Robert Lisek from Poland to Ionian University, Greece (1–29 March 2024); [17] Clarissa Ribeiro from China to Ionian University, Greece (1–29 March 2024); [18] Ken Rinaldo from the United States to Ionian University, Greece (online, 5–14 April 2024); [19] Yiannis Melanitis from Greece to Ionian University, Greece (online, 5–14 April 2024); [20] Elizabeth Littlejohn from Canada to Ionian University, Greece (5–14 April 2024); [21] Marlon Barrios Solano from the United States to Radiona, Croatia (14–28 April 2024); [22] Stefanie Wuschitz from Austria to Radiona, Croatia (22–28 July 2024); [23] Stephanie Rothenberg from the United States to Cultivamos Cultura, Portugal (7–20 August 2024 and 19 May–10 June 2025); [24] Kristina Sarli from Germany to Ionian University, Greece (online, 15–25 September 2024); [25] Augusto Calçada from Brazil to Ionian University, Greece (online, 15–25 September 2024); [26] Heidi Hehnlly-Chang from the United States to Ionian University, Greece (23 September–18 October 2024); [27] Boryana Rossa from the United States to Ionian University, Greece (23 September–18 October 2024); [28] Sunčica Ostoić from Croatia to Ionian University, Greece (online, 23 September–4 October 2024); [29] Olga Majcen Linn from Croatia to Ionian University, Greece (online, 23 September–4 October 2024); [30] Charlotte Jarvis from the United Kingdom to Ionian University, Greece (online, 23 September–4 October 2024); [31] Laura Splan from the United States to Ionian University, Greece (online, 23 September–4 October 2024); [32] Erich Berger from Finland to Cultivamos Cultura, Portugal (21 June–13 July 2025); [33] Laura Beloff from Finland to Cultivamos Cultura, Portugal (21 June–13 July 2025); [34] Hannah Perner-Wilson from Germany to Radiona, Croatia (22–28 July 2025); [35] Mika Satomi from Germany to Radiona, Croatia (22–28 July 2025).

FERAL ARCHIVES

Feral Labs and Beyond







← **Field_Notes – Living Methodologies, 2025**

This iteration responded to shifts in the field of art and science, insisting that how we research matters. As a group of 20 interdisciplinary practitioners engaging in collective research, we took turns in guiding and following a series of prompts, protocols, rituals, provocations, and questions as a means of attending to the methodologies themselves. These fieldworking methods took us on journeys that traversed fells, old growth forests, waterfalls, roadsides, labs, libraries, soundscapes, and space-time continuums. Photo credits: Milla Millasnoore.

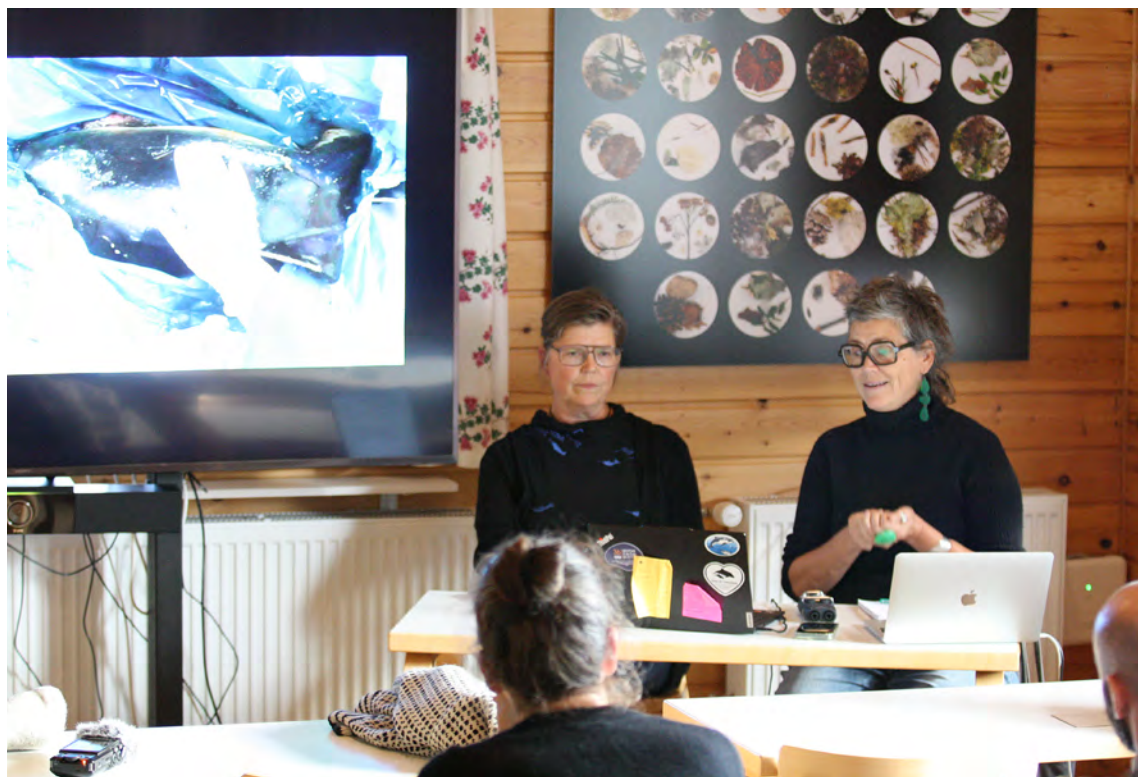
Long-Term Monitoring Initiatives at Kilpisjärvi Biological Station, 2025

Working closely with our collaborators and hosts at Kilpisjärvi Biological Station in Sápmi, Field_Notes participants used their long-term monitoring projects and sites as a compass to examine, exchange, and experiment with different methods and approaches towards shaping a future ethics and politics of field work. Here, research coordinator Anu Ruohomäki introduced us to a nocturnal butterfly research site and equipment. Photo credits: Milla Millasnoore.



Becoming Amateur: Love and Unknowing in Fieldwork, 2025

Artist Sam Nightingale guided the Field_Notes group in becoming amateur soil scientists in a multi-day soil chromatography field lab. The soil samples were collected from various locations in Gillbesjávri, where scientists are doing long-term monitoring research. Our methods involved attuning, asking permissions, critical note-taking, and returning to the sites what was not used in the lab process. Photo credits: Milla Millasnoore.



Learning Endings: Ecologies of Care in Arts-Sciences Collaborations, 2025

As part of their contribution to *Field_Notes: Living Methodologies*, Aleksija Neimanis and Astrida Neimanis hosted a public talk in the station seminar room, reflecting on their collaborative research project with artist Patty Chang entitled *Learning Endings*. In the talk, which was recorded and is still available to listen to on bioartsociety.fi, they offer intimate and self-reflective insights on the ways arts-sciences collaborations can change how scientists perceive and practice their work. They wonder: can art also care for science? Photo credits: Milla Millasnoore.



Mobility Grant: Dharmendra Prasad, 2025

Dharmendra Prasad was given a grant to travel from Nadaon in Bihar, India, to Møn, Denmark, to strengthen connections there as part of his ongoing project Harvest School—a self-organised art-pedagogical infrastructure. During the visit, he made temporary sculptural gestures to host civic gatherings and events on the tensions between ecological and industrial ways of living in rural Denmark. Image: *Harvest Moon*, harvested field, straw, ropes, and ecosystems of Møn, 2025. Photo credits: Dharmendra Prasad.

Feral Labs and Beyond







← **Partner's Canoe Trip Meeting, 2024**

A beautiful canoe trip during our Rewilding Cultures meeting at Cultivamos Cultura forced us to rethink: How can we have meetings in new settings? Photo credits: Avner Elkaras.

Feral Lab Workshop, 2024

A moment full of emotions and connection during the 2024 Feral Lab. We held a workshop with an embodied approach to the neurological system and ended up in relatedness towards each other. Photo credits: Flavio Saldanha.



Feral AIR Resident in Action, 2025

Erich Berger, one of our Rewilding Culture Residents, editing the field recordings he captured on his many walks in and around São Luís. Photo credits: Avner Elkaras.



Feral Lab Art Pieces on Exhibition, 2025

A presentation of artworks that have been developed during the 2025 Feral Lab. They were part of our largest annual exhibition called *Sentience* and were beautifully exhibited during the local town festival. Photo credits: Tal Alkalay.



Feral Lab Participant Setting Up Her Art Piece, 2024

Elisa, a Feral Lab participant, developed her own art piece for the annual town exhibition. She spent hours inventing new curiosities, playing with materials she had encountered in our Feral Lab, and preparing for the big opening. Photo credits: Flavio Saldanha.

Feral Labs and Beyond



The Culture Yard





← **Silent Walk at Camp Vild, 2025**

The first day at Camp Vild. Nature therapists from Natur i Livet guide participants through a silent walk that gradually transitions into trust-based exercises, designed to establish presence, mutual awareness, and to strengthen the emerging community. Photo credits: Mikkel Bache.

Ambient Sound in Rain, 2025

Artist Barbara Skovmand performs on a self-built sound instrument. Surrounded by light rain and exhausted bodies, she brings a shared moment of reflection and sensory grounding to the final day of the camp. Photo credits: Mikkel Bache.



Big Feelings in Forgotten Surroundings, 2025

Workshop opening in an abandoned restaurant reclaimed by nature. Thomas Lagermand reflects on his childhood, addressing questions of sexuality and the gaze of others. Set within a space slowly overtaken by the surrounding landscape, the setting evokes layers of lived history. Photo credits: Mikkel Bache.



Drum Meditation in the Woods, 2025

Drum sounding deep in the needle forest. Artists Mikkel Bache (also the photographer of Camp Vild) and Pernille Holm Kofod lead an intuitive drumming session on a dense moss floor, inviting participants to join through sound and movement. The collective practice fostered a shift in perception, with participants articulating a sense of “we” rather than “I” after the session. Photo credits: Wendy Plovmand.

→ Playing, Where Art Unites Us, 2025

Camp Vild is a synonym for co-creation with people and nature. The sense of togetherness, cultivated and made tangible during the workshop, was guided by Ulla Eriksen, who works with plaster, words, and the shapes found in nature. Photo credits: Mikkel Bache.



**Yarn Traces Workshop in the Woods, 2025**

During the Sensory Traces workshop, led by Karoline Larsen, participants worked with reused yarn and created traces and connections through and between trees. With space for laughter and playful co-creation, the process formed a shared network across individual bodies and relations. Photo credits: Mikkel Bache.





← **RC Consortium at TTT2023**

Rewilding Cultures consortium's moment of camaraderie at the Taboo–Transgression–Transcendence in Art & Science 2023 conference in Malta. Hosted by the Malta Society of Arts from 26 to 29 September 2023, the program included 170 speakers from more than 30 countries and was a celebration of the first in-person TTT gathering since the Covid-19 pandemic. Photo credits: Elisa von Brockdorff.

TTT2023 Conference

At TTT2023 in Valletta, Mariana Pérez Bobadilla (Maro Pebo) and Roland van Dierendonck conducted Chili Pepper Pleasure: Performative Tasting Meditation, a time-based workshop exploring pain, pleasure, and embodied knowledge through chili pepper tasting. Photo credits: Elisa von Brockdorff.



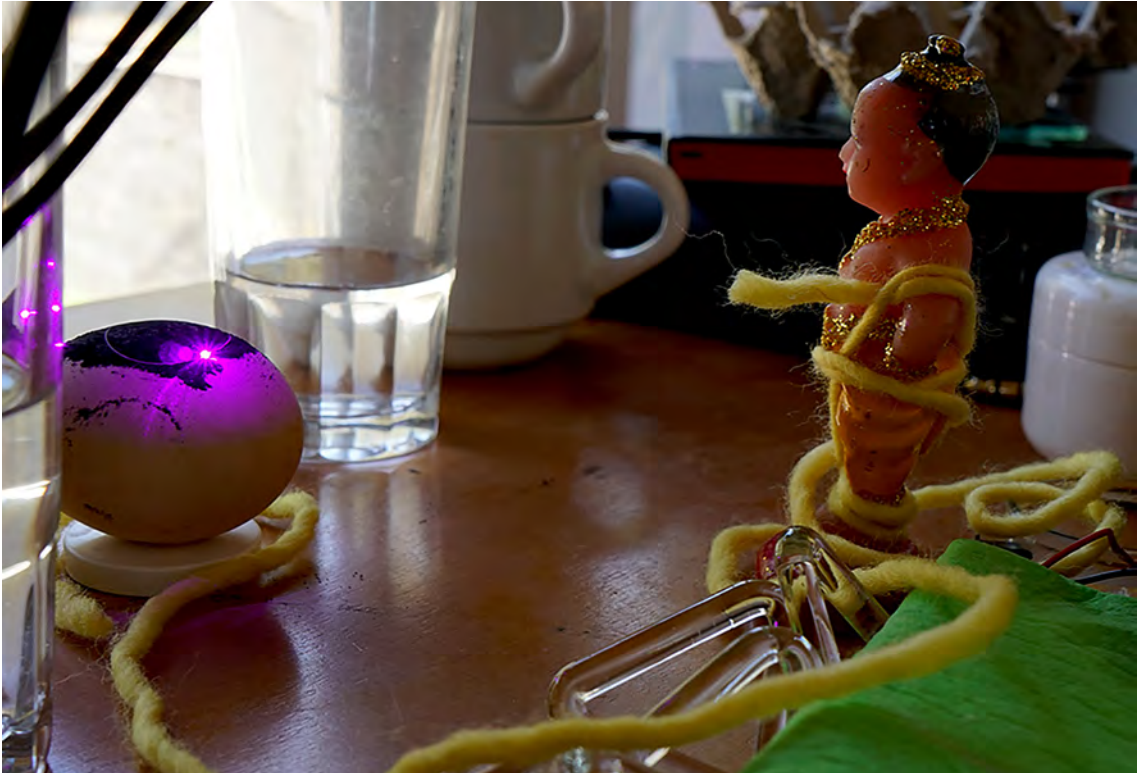
TTT2023 Proceedings Book Launch, 2025

A moment of transdisciplinary convergence in Istanbul: the first public presentation of the TTT2023 Conference Proceedings, a Rewilding Cultures deliverable, hosted at Yeditepe University on April 14, 2025. As part of the Spring Meetings in Design event curated by Dr Merve aşkurlu, Prof Dalila Honorato from the Ionian University and guest Prof Adam Zaretsky shared feral epistemological narratives on situated publishing and embodied research across art and science. Photo credits: Merve aşkurlu.



Rewilding Cultures Mobility Conversation by Kim Doan Quoc, 2025

Field trip in A Luoi Valley at the former U.S. military A So Airport. Kim is filming the monument that commemorates U.S.–Vietnam collaboration, which enabled the depollution of 30,000 m² of soil in this area (more than 400,000 hectares were contaminated during the war). Photo credits: Kim Doan Quoc.



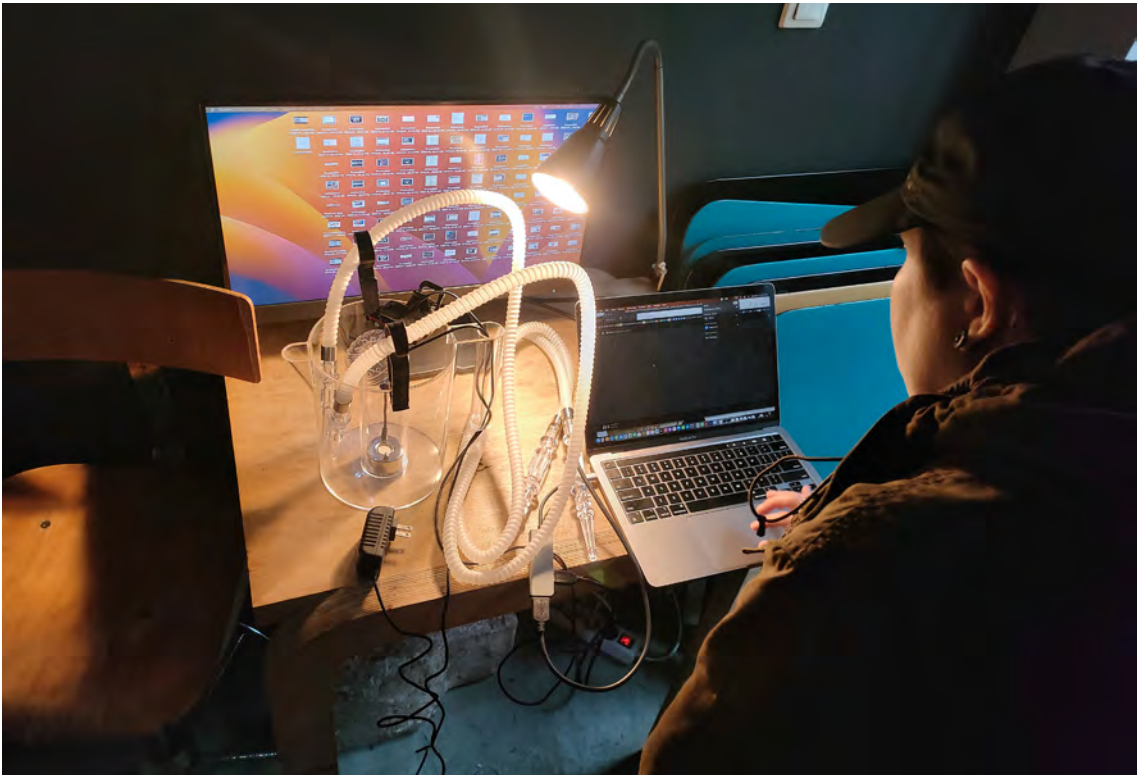
TTTlabs BioFeral.BeachCamp II, 2024

Wave (Weeratouch) Pongruengkiat sharing the anthropological stories behind Kuman Thong during TTTlabs BioFeral.BeachCamp (BFBC): New Repro-Zombie Studies (NR-ZS) in Crete. As a Thai artist and engineer, Wave weaved together animism, post-human thinking, and art-tech practice, opening space for reflection on our relationships with nature and AI. His lecture took place within the second chapter of the BFBC trilogy, a series of embodied research labs exploring reproduction through wetlab bioart and performance organised by the Ionian University in collaboration with the Athens School of Fine Arts. Photo credits: Adam Zaretsky.



TTTlabs BioFeral.BeachCamp III, 2024

Pictured here is Prof Ioannis John Vontas from the Agricultural University of Athens, Director of the Institute of Molecular Biology and Biotechnology of the Foundation for Research and Technology Hellas in Crete, and Principal Investigator of the Molecular Entomology and Pest Management Vontas Lab. Prof Vontas kindly received our participants of the third TTTlabs BioFeral.BeachCamp and welcomed the group to meet the researchers, technicians, and disease model insects in his lab. The tour opened with a lecture by Dr Anastasios Pavlopoulos, Principal Researcher of the Developmental Morphogenesis Lab, on the origin of biological form during early animal embryonic development in evolutionary time scales. Photo credits: Serafim Parsaloglou Marathias.



TTTfellows: Art & Science Residency II, 2024

Rehearsal for the XenoZombie performance at Polytechno, Corfu Town, following the isolation phase at the Kalogerou Art Station on the island of Othonoi, as part of TTTfellows: Art and Science Residency II. After two weeks of online preparation, fellows Dr Clarissa Ribeiro and Dr Robert Lisek met on site, critically engaging with ectogenesis and state biopolitics through art-tech practices. Coordinated by Dr Dalila Honorato and Dr Adam Zaretsky, the residency culminated in a collaborative performance and artist talks with students from the Department of Audio and Visual Arts, Ionian University. Photo credits: Serafim Parsaloglou Marathias.



TTTfellows: Art & Science Residency III, 2024

Flamingos at Lake Korission, Corfu's protected nature reserve. Bird observation was part of the activities during TTTfellows III: Art and Science Residency, featuring fellows Dr Heidi Hehnly-Chang and Dr Boryana Rossa. The residency culminated in a public workshop-performance at Corfu Aquarium and an interdisciplinary performance-lecture at the Department of Audio & Visual Arts, where the fellows shared their research on ex-utero development, mythological reproduction, and bioart methodologies. The programme also actively facilitated family participation, encouraging the fellows to bring along their children, and foregrounded care, kinship, and lived experience as part of the research process. Photo credits: Adam Zaretsky.



Feral Labs and Beyond









←← **Algae Foraging, 2025**

Seaweed was central to the 2025 edition of ArtLabo Retreat, as it was used in cooking, as a biomaterial, and in clothing design. On the second day of the camp, participants joined botanist Edouard Bal on an educational walk on how to pick wild seaweed, a practice they continued throughout the week. Photo credits: Maya Minder.

← **Circular Food, 2025**

One of the camp's objectives was to focus on circular economy and to eat food that had been picked or grown on the island. Culinary artists created meals and performances using seaweed, edible wild plants, and agricultural produce from the island. Photo credits: Anaïs Valdher Untersteller..

Lab, 2025

ArtLabo transformed the camp's game room into an improvised creative laboratory. Here, biomaterial creation, algae processing, clothing design, welding stations, and electronic instrument making all came together. Photo credits: Corinna Mattner.



Sea Serpent, 2025

The western tip of the Île de Batz and its rocky chaos is a place that has inspired medieval legends. In the 6th century, the monk St Pol Aurelian is said to have defeated and repelled a sea serpent there, a legend that symbolises the victory of Christianity over earlier pagan beliefs. Photo credits: Maya Minder.



Underwater, 2025

Artists also explored underwater creations. Maya Minder offered an eco-sexual performance in the kelp forests of the intertidal zone, and photographer Clémence Curty braved the cool waters to practise black and white underwater photography. Photo credits: Maya Minder.

Feral Labs and Beyond







← **Radiona's Kamp Velebit Dome – Looking into the Future, 2025**

Radiona's Kamp Velebit Dome was built in 2023 as part of the Electric Wonderland maker/hacker camp and remains a permanent structure for future camp editions. Conceived as a shared and adaptable space, the dome hosts year-round activities ranging from Electric Wonderland and mini film festivals to yoga sessions for mountaineers, campers, and wanderers moving through the surrounding landscape. Embedded in its natural environment, it serves as a meeting point for cultural, educational, and community-based practices. In the future, the spectrum of activities taking place at the dome could be expanded to include, for instance, functions related to mountain rescue. Photo credits: Branko Vilus (cc).

Salon of Open Secrets Workshop by Stefanie Wuschitz, 2024

The workshop addressed the material and political dimensions embedded in contemporary technologies. Structured around an open secret that everyday digital devices rely on conflict minerals such as tungsten, tin, tantalum, silver, and gold, the workshop challenged the idea of technological neutrality. The camp took place in the mountains, where participants created an experimental circuit using the earth as a surface and material. The workshop invited reflection on ethical hardware and alternative, locally grounded technological practices that consider the well-being of both humans and the environment. Image credits: Roger Pibernat.



DIY Solar Cooker, 2024

This project focused on building a DIY solar cooker from a discarded satellite antenna and was developed to explore sustainable energy through hands-on experimentation. By transforming technological waste into a functional solar device, it invited participants to rethink everyday objects and understand basic principles of energy concentration. Using basic principles of heat absorption and insulation, the cooker slowly cooks food on sunny days. Through making, testing, and shared use, renewable energy becomes a direct, social, and experiential practice. Photo credit: Radiona.org (cc).



Etched Electronic Boards, 2025

As of 2024, the camp included the Etching LAB, Meme LAB, Photo and Video LAB, Hobbits & Lasers LAB, Hobbits & Cutters LAB, and Hobbits & 3D Printers LAB, creating a diverse ecosystem of spaces for residents and camp participants. Temporarily relocated into a natural setting, these labs supported a wide range of activities rooted in making, hacking, and artistic experimentation. For seven days, the camp functioned as a laboratory for curiosities, where tools, ideas, and practices were tested outside their usual institutional contexts. The photo shows etched circuits produced during the camp. Photo credits: Branko Vilus (cc).

**Inner Textures Workshop by Zoe Romano, 2025**

Inner Textures Workshop by Zoe Romano explored the intersection of textile practices, electronics, and sound. Participants were introduced to Romano's research and custom PCB through hands-on weaving with plant- and animal-based yarns and conductive fibres using a backstrap loom in a forest setting. Sound generation embedded in the woven pieces symbolically and literally communicates acts of questioning and transgressing boundaries, particularly between magic and science, inviting reflection on these overlapping realms. Photo credits: Branko Vilus (cc).

Feral Labs and Beyond







← **Mandatory Hike, 2025**

Yes, we are talking about the least favourite activity at PIFcamp, which nonetheless brings great joy once fully experienced—the (in)famous mandatory hike to the Great Soča Gorge. Each year, the walk takes place on Friday afternoon, come rain or shine. On that day, if you look closely, you will spot eager PIFcampers jumping into the icy-cold Soča River. Photo credits: Katja Goljat.

Forged From the Fires of PIFcamp, 2024

PIF projects are often connected to the natural surroundings—whether through wind, water, soil, sound, meadows, or wood. However, the Ethical Hardware Project by Patrícia J. Reis from Mz*Baltazar's Lab elevated the use of locally sourced materials to an entirely new level. During a workshop at PIF, Patrícia guided a group of participants in creating printed circuit boards from wild local clay, using recycled silver as the primary electrical conductor. Photo credits: Tine Lisjak.



Let's Talk About Sustainability, 2025

Bernhard Rasinger started monitoring PIFcamp's power consumption in 2024. Under his surveillance, we successfully connected part of the PIFcamp energy consumption to the off-grid solar-powered network in 2025. That same year, PIFcamp earned the title Event on the path to zero waste with two stars. Small steps for the planet earth, but giant leap towards sustainability for us! Photo credits: Katja Goljat.



PIFcamp #10 Celebration, 2024

After ten awesome editions of PIFcamp, a proper celebration was needed. The walls inside and outside the Kluže fortress were perfect for a fusion of AV performances, celebrating the vastness of genres, from live coding and AI-generated images to a modular synthesis banger and an outstanding laser show. Definitely a celebration of the vivid PIFcamp community! Photo credits: Katja Goljat & Matjaž Rušt.



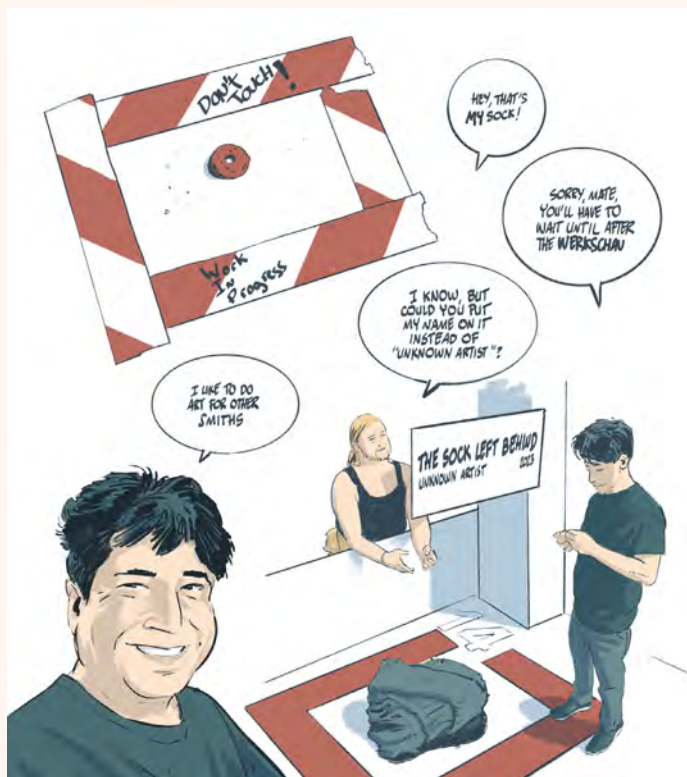
Fransisca Tan: Flavours of Transformation, PIFresidency 2025

Austrian artist and food experience designer Fransisca Tan has been a vital member of the PIFcamp community since 2023. During the residency, she combined her knowledge on food, art, and identity, and held a series of community events, culminating in a final exhibition at osmo/za, Ljubljana in August 2025. Photo credits: Katja Goljat.

Feral Labs and Beyond







← **Paul Takunda Chiwona's Installation, 2025**

Each singular creative perspective shapes what makes Schmiede truly Schmiede, as every person brings a distinct way of seeing and creating. Photo credits: Maria Contreras.

Bruno-Pelaez, 2023

As attendees begin to get to know one another, collaborative ideas emerge; artworks start to reference each other, and, almost unexpectedly, entirely new and different pieces evolve from these connections. Image credits: Roger Pibernat.



***Luminous Touch* by Alexandra Reichart und Matthias Krauß, 2024**

Our community is what makes us function; the true magic of Schmiede is created between people. It lives in the moments when we come together, share our skills, and inspire one another, turning singular abilities into a bigger commons and into something meaningful and alive. Photo credits: Mathias Gruber.



Werkschau, 2025

What began as conversations and concepts occupies the Saline every year. AI experiments dialogue with physical installations, performance documentation shares space with interactive prototypes, and collaborative works reveal what happens when different practices refuse to stay in their lanes. Photo credits: Maria Contreras.



Werkschau, 2025

From wrestling theatre meets digital storytelling to machine learning exploring ecological futures, the projects embody the Schmiede tension—individual ambition transformed through collective process. Photo credits: Maria Contreras.

ART2M/Makery (France)

ART2M (Art To Machine) is an art and media production company that explores and supports creative communities working at the intersection of art, design, education, technology, and science. Makery is ART2M's media lab and bilingual online platform (English/French) that includes a newsletter, website, and social media channels. It documents and amplifies the work of creative communities and laboratory cultures.

Bioart Society (Finland)

Bioart Society is a Helsinki-based association working at the intersection of art, science, and society. It develops, produces, and facilitates activities around art and natural sciences, with a focus on biology, ecology, and life sciences. Bioart Society is the Finnish contact node in international bioart and art-science networks, with more than 190 members across diverse artistic and research fields. Together with Kilpisjärvi Biological Station (University of Helsinki), they run the Ars Bioarctica residency programme in Sápmi.

Cultivamos Cultura (Portugal)

Cultivamos Cultura is a space for experimentation and shared knowledge in science, technology, and contemporary art, located in a renovated farmhouse in São Luís, Portugal. The organisation supports creativity through production, research, education, exhibitions, and dissemination activities. It also fosters strong bonds with local communities and environments, contributing to cultural identity and sustainability.

The Culture Yard (Denmark)

The Culture Yard is North Zealand's largest cultural centre and—together with the city's older culture house, Toldkammeret—provides stages and space for a wide range of local, national, and international events. Collectively, the two houses deliver a broad and diverse cultural programme that blends tradition with surprising artistic experiences. Visitors can enjoy concerts, talks, debates, theatre plays, civic activities, communal dining, and family events.

Ionian University (Greece)

Founded in 1984, the Ionian University operates across the islands of Corfu, Lefkada, Kefalonia, and Zakynthos in Greece. It joined the Feral Labs Network through Interactive Arts Laboratory (InArts) in 2021, serving as a coordinating partner for Feral Knowledge within the Rewilding Cultures (2022–2026) project in collaboration with the initiative Taboo – Transgression – Transcendence in Art & Science (TTT) conference series.

Projekt Atol Institute (Slovenia)

Projekt Atol is a non-profit cultural and research organisation founded in 1994. It produces artworks, research projects, technical experimentation, and publications. The institute has developed a strong international network, facilitating transnational initiatives such as Arctic Perspective Initiative, Changing Weathers, Feral Labs, and Rewilding Cultures. It also runs ongoing educational programmes like PIFcamp, fostering local and international creative communities.

Radiona.org (Croatia)

Radiona.org is a non-profit organisation and citizen lab consisting of makerspace/hackerspace, media art lab, Repair Café, and residence programme founded in 2011. The organisation focuses on DIY (do-it-yourself), DIWO (do-it-with-others), and DITO (do-it-together) cultures, STEAM concepts, interdisciplinary and intergenerational non-formal education, and hybrid activities. The lab has been developing innovative projects with an emphasis on community building, participation, cohesion, social inclusion, and knowledge transfer and co-creation.

Schmiede Hallein (Austria)

Schmiede Hallein is an Austrian non-profit organisation promoting digital culture. It fosters interdisciplinary collaboration at the nexus of art, technology, and entrepreneurship by providing a cooperative prototyping environment based in Hallein, Austria, during its annual ten-day event, where it transforms a historic salt refinery into a vibrant hub where artists, coders, performers, and makers collaborate in real time to prototype new ideas. The event consistently draws hundreds of creatives from across Europe and has become a reference point for open innovation in the cultural and creative industries.

The Rewilding Cultures (RC) project is centred around exploring innovative approaches to production, inclusivity, and environmental considerations at the intersection of the arts, science, and technology. With a strong focus on reflecting upon the evolving landscape of artistic research and production, the project aims to foster and reshape new perspectives on various aspects of artistic and creative processes, including research, production, presentation, and dissemination. Simultaneously, it underscores the significance of responsible participation, particularly regarding environmental sustainability and vital inclusion matters that can no longer be ignored. It is imperative that we embrace a rewilding approach that is relevant for both the present and the future.

Rewilding Cultures



**Co-funded by
the European Union**

The Rewilding Cultures is co-funded by the Creative Europe programme of the European Union.

This publication was co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Contributors



Art2M, Digital Art International (FR)

Ewen Chardonnet
Chrysa Chouliara
Steffan Jones-Hughes
Maya Minder
François Robin
Anaïs Valdher Untersteller
Anne-Cécile Worms

Bioart Society (FI)

Yvonne Billimore
Eliisa Suvanto
Milla Millasnoore
Leena Valkeapää

Cultivamos Cultura (PT)

Marta de Menezes
Anna Isaak-Ross
Emma Hallemans
Rita de Almeida Leite

The Culture Yard (DK)

Søs Krogh Vikkelsøe
Nicolai von Rosen
Christian Durr Henriksen
Georg Rasmussen
Anne Borg
Barbara Scherfig



Ionian University (GR)

Dalila Honorato
Adam Zaretsky
Iakovos Panagopoulos
Ioanna Logaki
Serafim Parsaloglou Marathias
Nicolás Parise Schneider
Jess (Berry) Sullivan

Projekt Atol Institute (SI)

Tina Dolinšek
Uroš Veber
Rea Vogrinčič
Marko Peljhan

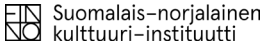
Radiona (HR)

Deborah Hustić
Sara Lojen-Tolja
Damir Prizmić
Goran Mahovlić

Schmiede (AT)

Karla Spiluttini
Rüdiger Wassibauer
Eva Perner

Rewilding Cultures activities were co-funded by:



Co-financed by
City of
Ljubljana

Art2M, Digital Art International/Makery:

ArtLabo Retreat 2025 hosts François Robin, Ewen Chardonnet (Makery), Claire Laporte, Camille Bernicot, Charlie Cann (La Gare – Centre d’art et de design), Marina Pirot, Dominique Leroy (Kerminy); Makery’s chroniclers Chrysa Chouliara and Lyndsey Walsh; facilitators and mentors Edouard Bal (Cueilleur d’éstran), Julie Tunas, Lorie Bayen El Kaim, Violaine Buet (La Gare), Maya Minder, Corinna Mattner, Marc Dusseiller (Hackteria), Pôm Bouvier-b., Tony Robinet (Kerminy); film team Marie Sizorn, Malo Chardonnet, Gabriel Sabourault, and translator Bella Bates; participants Toru Ryu Oyama, Asahi Ota, Anais Valdher Untersteller, Elisa Chaveneau, Noémie Vincent-Maudry, Clémence Curty, Seungje Han, Claire Kerhuel, Victoire Lechat, Simon Whitehead, Steffan Jones Hugues, Gweni Llwyd, Claire Pondard, Caroline Denos, Olwen Planchenault, Florence Doléac, Joanna Wong, Louis Clos, Louis Thauvin, Jean-Baptiste Masson, Lina Zikra, Quentin Aurat, Jena Jang. Special thanks to Anne-Cécile Worms (director of ART2M), Tanguy Grall (brewery (PAB) and Guillaume Floc’h (algae lab), Marie Chevartzmman and David Jouffriault (Colonie du Phare), the Station Marine of Concarneau, Marie-Jo and the residents of Kerminy.

Bioart Society:

Special thanks to our *Field Notes: Living Methodologies* contributors and participants Anastasia (A) Alevtin, Ellie Ballentine, Marjolijn Dijkman, Eamon Edmundson-Wells, Antye Greie-Ripatti, Hanna Husberg, Ziggy Lever, Elina Waage Mikalsen, Aleksija Neimanis, Astrida Neimanis, Sam Nightingale, Camille Sineau, Sumugan Sivanesan, Taylor Alaina Liebenstein Smith, Manuel Díaz Tufinio, and Tessa Zettel. Also, to our Ars Bioartica residency host Leena Valkeapää and to the staff at the Kilpisjärvi Biological Station of the University of Helsinki for their long-term support and collaboration, particularly Hannu Autto, Anu Ruohomäki, and Pirjo Hakala, and the director of biological research stations Jouni Heiskanen. Many thanks to our previous team members Erich Berger, Piritta Puhto, and Lisa Kalkowski. As always, we are grateful to our members, networks, and partners who rigorously engage with our work and shape it with us.

Cultivamos Cultura:

Thanks to the Cultivamos Cultura team: Marta de Menezes, Anna Isaak-Ross, Claudia Figueiredo, Luís Graça, Emma Hallemans, Nuno Sousa, Rita de Almeida Leite, Tal Alkalay, Diana Mordido Aires, Maria Manuela Lopes, and Louise Mackenzie. A special thanks to our “Sentience” Summer School faculty—including several members of the Cultivamos Cultura team—alongside Ebru Yetiskin, Ellen Wetmore, and Wenhao Tien, as well as all the summer school participants.

Ionian University:

Thanking (alphabetically first name): Adam Zaretsky, Adnan Hadzi, Aisen Caro Chacin, Alex Livas, Andreas Giannakouloupoulos, Andreas Liartis, Angeliki Charalampidou, Angelina Almukhametova, Anna Czaban, Anastasios Pavlopoulos, Anastasia Mandel, Aris Poulimas, Aristeidis (Aris) Lamprogeorgos, Blu Zaretsky, Boryana Rossa, Brian Contreras, Callum Siegmund, Chancee Choi, Charlotte Jarvis, Cherise Fong, Chiara Pitrola, Chinedum Muotto, Christiana Divini, Christos Tsoumplekas, Clive Zammit, Criton Vlassis, Daisy Fairclough, Dalila Honorato, Dann Disciglio, Dimitris Boumparis, Dionisis Dimoulitsas, Elsa Ferreira, Elisa von Brockdorff, Elizabeth Littlejohn, Elli Leventeri, Emmanouela Linardaki, Emmanouil Froudarakis, Erik Knudsen, Fotis Pagkalos, Gabriel Zammit, Georgia Lykou, Ghazal Ramzani, Heidi Hehnlly-Chang, Hoçâ Cové-Mbede, Iakovos Panagopoulos, Ioanna Logaki, Ioannis Charalampopoulos, Isidora Fernandez, Ivana Tkalčić, Jaden J. Hastings, Janet Sarson, Jasna Jernejšek, John Vontas, Kelly Tarenidi, Ken Rinaldo, Kim Doan Quoc, Kim Sammut, Kinyua Malaika, Kristin Lucas, Lara Mejač, Laura Rodriguez, Laura Splan, Luca Venturini, Lyn Hagan, Lyndsey Walsh, Margerita Pulè, Maria Antelman, Maria Aslanidi, Marily Argyrokastriti, Marios Krokidis, Marko Markovic, Mary Maggic, Mattheos Fraidakis, Melissa Monsoon, Merve Çaşkurlu, Michalis Chalkiadakis, Minas Pergantis, Nafsika Tzanoulinou, Nathalie Dubois Calero, Natalie Jeremijenko, Nikolas Marcellos, Nupur Doshi, Olga Majcen Linn, Panagiotis Vlamos, pETER Purg, Popi Bitzopoulou, Praba Pilar, Prathima Muniyappa, Robert Lisek,

Roubini Oikonomidou, Rüdiger Wassibauer,
Sara Cowdell, Serafim Parsaloglou Marathias,
Shih Wei Chieh, Spyridon Doukakis, Stefania
Ólafsdóttir, Stella Lampoura, Sunčica Ostoić, Tania
Tsiridou, Thanos Tsigkas, Themis Exarchos, Uroš
Veber, Vasileios Karyotis, Viktoria Koniaeva, Vivi
Tsakoumi, Vlada Oleynik, Wave (Weeratouch)
Pongruengkiat, WhiteFeather Hunter, Xristina Sarli,
Yiannis Melanitis, and the TTT community at large.

Projekt Atol Institute:

Društvo Ljudmila, Trajna & Krater Collective,
ISOLabs crew, GO! 2025, MAT UCSB, Ekologi brez
meja, PIFresidents, PIFcommunity & PIFcamp team.

Radiona:

The Radiona community: Ana Horvat, Paula Bučar,
Monika Pocrnjić, Sandra Maglov, Damir Prizmić,
Goran Mahovlić, Igor Brkić, Tomislav Zidar,
Zvonimir Domazet, Branko Vilus, Aleksandar Vojnić,
Fran Masnjak, Ori; Camp Velebit: Luka Žuženić;
the Radiona ecosystem: Sanda Vrljičak, Lea Kuna,
Ana Stuparić, Ana Novosel, Danijela Milanović,
Demijan Brkić, Ilija Prizmić, Katja Vilus, Eva
Pavlinušić Vilus, and Mitja Greifoner.

Schmiede:

The Schmiede community, the Schmiede team,
all our resident artists, the City of Hallein, and all
our supporters.

The Culture Yard:

Special thanks to: all residents and artists,
Nikoline Joy Haas, Saxe Sebastian Lomholt, Majken
Overgaard, Philip Pilekjær, Suada Ada Demirovic,
Mikkel Bache, Wendy Plovmand, The Culture
Yard & Helsingør Kommune crew, volunteers,
and employees.

Feral Labs Node Book #3
Fa Fa Futures
DIGITAL EDITION

Editors

Dalila Honorato, Iakovos Panagopoulos,
Tina Dolinšek, Uroš Veber

Contributing Editors

Adam Zaretsky, Ewen Chardronnet, Marta
de Menezes, Rüdiger Wassibauer, Karla
Spiluttini, Yvonne Billimore, Deborah Hustić,
Nicolai von Rosen

Proofreading

Miha Šuštar

Graphic design and typesetting

Mina Fina—Ee

Photos

© 2022–2026 by the authors

Texts

CC BY-NC-ND 4.0

Attribution-NonCommercial-NoDerivatives

4.0 International, 2026



Published by

Zavod Projekt Atol
Trg prekomorskih brigad 1
1000 Ljubljana, Slovenia

<http://projekt-atol.si/>
info@projekt-atol.si

May 2026

Price

Free copy

<https://rewildingcultures.net/>
<https://ferallabs.net/>

Rewilding Cultures

Kataložni zapis o publikaciji (CIP) pripravili v Narodni in univerzitetni knjižnici v Ljubljani
COBISS.SI-ID 273882115
ISBN 978-961-96713-5-1 (PDF)

FA FA FUTURES

ESSAYS

I 1 2 3

II 1 2 3 4 5 6 7 8

III 1 2 3 4 5 6

FERAL
ARCHIVES



ISBN 978-961-96713-5-1 (PDF)