LIVING SOILS /
DWELLING ACCROSS SCALES

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2023-in progress



OXFORD x UDK BERLIN
SEEDFUNDING
FOR
CREATIVE
COLLABORATIONS

Following the “Boundary project” (2021) and its broad interrogations on socio-ecological literacy, two projects engaged with the potential of interdisciplinary interactions between arts, humanities and natural sciences : “Living soils” and “Dwelling across scales”. Katja Lehmann, Alan Grafen (Oxford) and Timothee Ingen-Housz (UdK Berlin) met to imagine innovative educational approaches designed to improve the awareness of “more-than-human” worlds and their relevance in contemporary societal issues.

Conversing on- and offline, we gathered to prototype educational strategies and to identify the institutional and extra-institutional settings in which they could possibly achieve interesting outcomes.

The first project, **“Living soils”** (2023), sought to concentrate on soil as a boundary object at the crossroads between multiple social actors, practices and knowledge types. The project would hint at public engagement and action-research opportunities bringing a variety of scientists, educators and social actors to engage with soil from different perspectives. It would also outline a generic approach to design interventions presenting contemporary socio-ecological challenges to a wider public.

The second project, **“Dwelling across scales”** (2025) would seek to experiment with a prototypal intervention in and around Teufelsberg´s historical listening station, - a site also renowned for its rich history, anthropogenic soils and rewilding experiments.



Context

A reversal in progress towards poverty eradication and social equality, driven by the Covid 19 pandemic, food insecurity caused by the war in Ukraine and increasingly widespread floods and droughts, has thrown into sharp relief extractive patterns of action that we apply to our social and natural environments.

UN analysis suggests that despite an ever deepening understanding of mechanisms and impacts, the global community is woefully underprepared to face any further crises. The UN points out that 'translating the insights of network science into improving how networks are governed to boost resilience remains a work in progress' (UN 2024). The UN suggests more investment in countries' national social structures and greater international collaboration, but as is obvious from voter choices in democracies all over the world, policy makers that favour less investment into social development, environmental protection or international aid, and aim to stop the exchange of people across borders are the flavour of the moment.

It seems surprising that despite a) sufficient knowledge, b) well-developed methods how to bring about change and c) often even all the necessary technological skills to create more sustainable systems, voting populations frequently choose a recourse to policies that isolate countries and favour social inequality, hinder change, as well as further destroy the natural environment. The reason for this might lie in a number of cognitive biases which we individually, and as a collective, find hard to frame and even harder to overcome.

From an evolutionary perspective, biases such as temporal discounting, personal focus, optimism and others might have conveyed a competitive advantage up to this point and therefore persist in many human populations (Haselton et al, 2006; Wu, 2024). The question is how to find effective educational methods to engage with these psychological blind spots, which are hindering us from developing more socially and environmentally sustainable lives.

For the Boundary project, we invited an interdisciplinary group of arts and science researchers and practitioners to co-create visions of lives that stay within planetary boundaries. To explore and discuss our thoughts, we trialled methods of embodiment and nature immersion to create connections with each other and foster understanding. From this emerged the necessity to think more deeply about how such methods can be scaled up within multifaceted social frameworks that require an understanding of complex societal and environmental needs.

To do this, we picked soil as a matrix to measure up against - our source of life and arguably the most complex environment on the planet on the one hand, much over-extracted and degraded by our treatment of it on the other. Soils define the characteristics of a locality, shaping the landscape that develops on it, from specific plants to specific types of buildings, even the specific taste of the fruit that has grown on it (see the notion of 'terroir'). From a position of intimate knowledge of their home soils, spanning from knowing how to preserve their fertility to knowing how to to best build on them, human communities have moved to using extractive methods to get from soils what they need on a short-termist basis, thereby degrading the majority of earth's soils.

Our project 'Living Soils' set out to gather a set of educational tools which can help people overcome some of their biases and behavioural patterns. Specifically, we sought to combine scientific and artistic measures to create sensory practices involving touch, smell, sound and vision that are based in well-researched scientific methodology, i.e. engagement with microbial communities and their products, producing natural dyes to create garments or creating nutritionally-balanced communal meals from local plants, activities that get supplemented with scientific information.

Through feedback (as yet anecdotal) we sought to establish which methods were leading to change, and found that a combination of science-based information offered together with play-like communal activities that involved creating either lasting artworks or shared events were perceived as the most effective and memorable interventions, offering both the tools to behave differently and the positive reinforcement to recreate the experience.

“Living soils”
/ Approach

In accordance with the world wide effort to improve soil awareness (UN, 2015), our team sought to question established notions of “ground” and “ground-ing” to induce new perceptions and reflections on place, community and belonging. We conceived a program with the initial intent to arouse curiosity for the “hidden side of nature” and undo the cultural invisibility of soil to strengthen its relevance in urban design and policy debates.

A series of micro-interventions teasing a supposedly dusty, flat and dead surface would engage with soil´s observable microscopic metabolism and cultural representations. Our work led to the formulation of a dual engagement concept weaving soil care practices (the “sanatorium”) with a range of aesthetic practices and experiments to be performed in a dedicated atelier (the “studio”), also understood to be a playground or “sandbox” in which fresh configurations could be freely drafted.

These experiments would be designed to unsettle established binary categories (such as surface/depth, inside/ouside, clean/dirty, above/below, dead/alive, self/other, etc..) with riddles and perceptual games questioning culturally established narratives attached to soil and, more particularly, to the microbial world observable in the soil microbiome (bacteria, fungi, etc.).

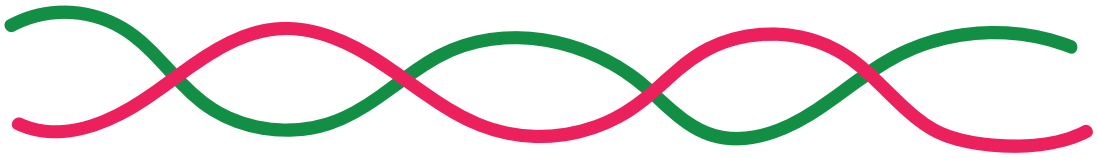
This combined effort would attempt to reveal multiple interactions at the heart of the soil-plant-gut biome axis. New words, stories, maps, words, images and analogies would be developed to picture their dynamics. We would seek to pinpoint embodied experiences, practices, images, sounds, words and processes manifesting the invisibility of microbial dimensions, and thus tackle the cultural deficits hiding their centrality in human lives and infrastructures.

The care practices would take place in temporary “sanatoriums” set up in chosen locations, offering participants the opportunity to encounter soil with their bare hands and senses, experimenting with mediated explorations involving microscopes, cameras and microphones. The material thus recorded (raw images, sounds and samples) would later be transported in the “studio” to be manipulated, combined and transformed in experimental artworks. Canonical formats (such as “landscape”, “still life”, “nude” or “self-portrait”) would be playfully deconstructed to create new ones.

New words and concepts would be formed to experiment with alternative ontologies. They would seek to reflect the complex interactions between the myriad of microorganisms co-existing within and without us, rather than reproduce their appearance as autonomous or separate agents. Participants would write texts, map multidimensional spaces, tweak sounds, make music and create a repertoire of fragments upsetting the established bounds of the above mentioned formats (portraits, landscapes, still life etc..) and suggest neologisms encapsulating complex interactions in new constructs.

“Living Soils”

Soil Care Practices
(Sanatorium)



Aesthetic Experiments
& Conceptual reformulation
(Studio / Playground)

“Sanatorium”

Individual & Collaborative
Soil Care practices

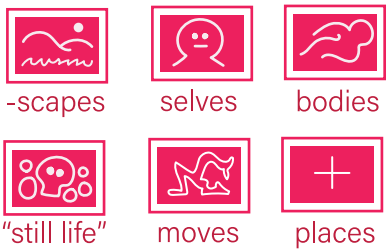
“Studio / Playground”

Individual & Collaborative
Aesthetic experiments

Assessing & Practicing
Soil Health: encouter, observing, listening, testing, healing, etc, collecting AV material, samples etc..



Deconstructing
& reconstructing established “ground and soil” concepts, frames and narratives with mixed media practices.



Playful engagement with soil terminology, manipulation and transformation of soil photographs, videos, sounds and material samples to “crack open” inherrited binaries.

Experimental development of alternative notions of “ground, soil, earth etc.” redrawing the boundaries between enclosed concepts, practices and entities.

Development of collaborative soil health practices and rituals, labor & role division, temporal organisation of care practices along seasonal shifts.

Two main threads would alternate and interact:

• One deals with collective soil care practices as a platform to encounter, observe, analyse and in some cases treat the microbial world hidden beneath and between our feet while meeting fellow residents. These practices would unfold in communal settings (small or mid-sized groups), they would be designed to let participants experience microbial dimensions otherwise unreachable to human eyes and minds. These would both seek to "unseal" the ground, access the soil trapped beneath layers of concrete and engage with care practices starting with the assessment of soil's health.

• The other concentrates on the creative deconstruction of established ideas, practices, and values culturally embedded in words, disciplines and social institutions. These would mostly rely on strategies "cracking" sealed concepts or norms, question their premises and components, stretch or redraw their boundaries and enable their potential (re) formulation in a set of images and narratives picturing an expanded relational cosmos emphasizing interdependancies between human beings and the microbial environments they both harbor and inhabit.

Both the "studio" and the "sanatorium" share the aim to draft experimental modules for a transdisciplinary socio-ecological literacy curriculum to be held in classical educational institutions such as at the University of the arts Berlin or Oxford University (1), or in public spaces and non-institutional settings(2) : in the street, public gardens, parking lots, wastelands, - practically "anywhere". After all : soil is everywhere, however well it may hide beneath the "ground". The intervention later presented in "dwelling across scales" is exploring this particular option in Teufelsberg's historical site.

These two approaches seek to challenge well-bounded "objects" (the "ground") , concepts and practices (such as observing, measuring, quantifying, treating- but also plowing or growing) to join, overlap, combine and bundle them in dynamic configurations revealing interactions and co-dependencies between actors unaware of their entanglement in a larger multiscalar environment usually difficult to perceive or articulate. These interventions would also act as a platform to meet, dig and get to know each other in unusually "intimate" ways : a microbial multilateral encounter. In this context, the "microbial is interpersonal, and the interpersonal is political" : encounters between social actors challenge persistent notions of finite individual boundaries.

The project is using soil care to refresh the notion of "common grounds" rooted in one realisation : all of us are entangled with microbial agents circulating in and between what used to be understood as finite and autonomous selves. This approach is motivated by the hope to counter social fragmentation through the shared realisations of a "foundational deal" recognising the urgent need to discover and develop (co)dwelling practices.





Out of the “studio”:
Hooting Concert & soil science glossary
// spoken word performance & video.

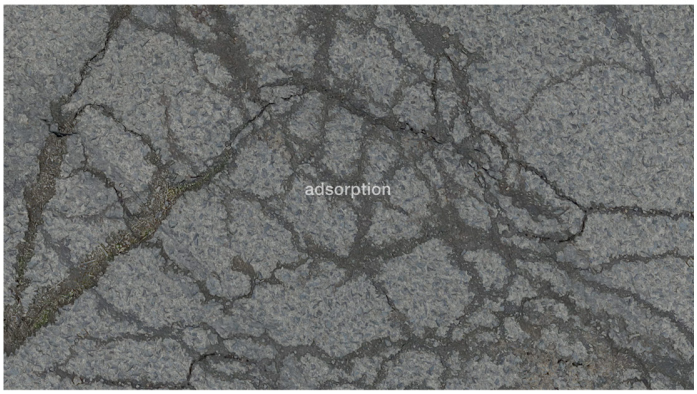


Out of the “Studio”:
soil landscapes collaged out of multilayered
sealed road surfaces.





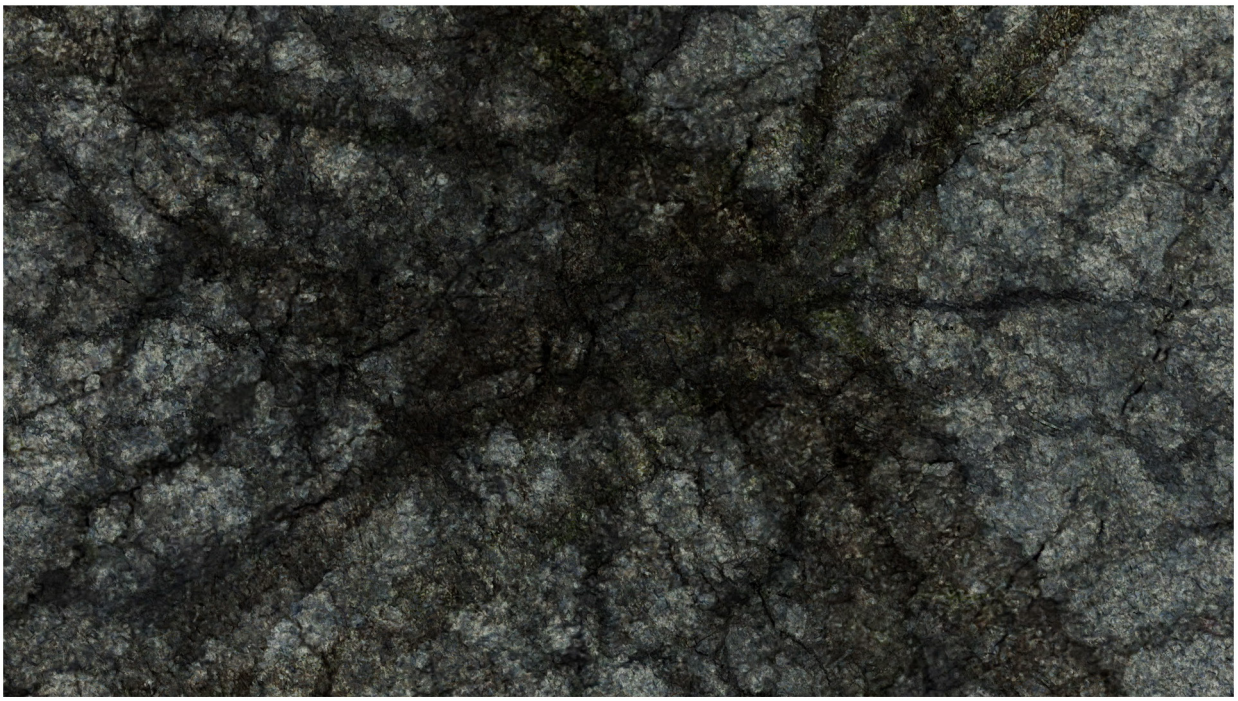


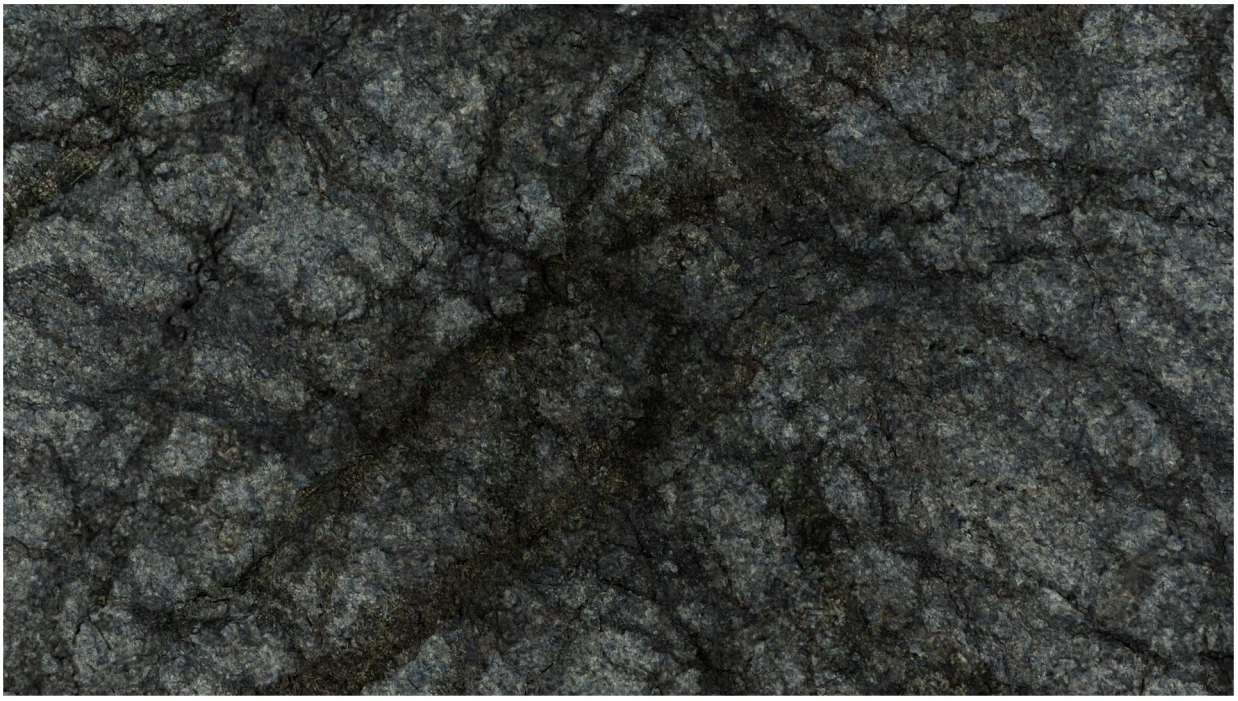






Out of the “studio”:
Soil science glossary
(spoken word performance & video).





Out of the “Studio”:
soil landscapes collaged out of multilayered
sealed road surfaces.







Out of the “Studio”:
Ground & overgrounds
Sample Collection in Berlin & around.





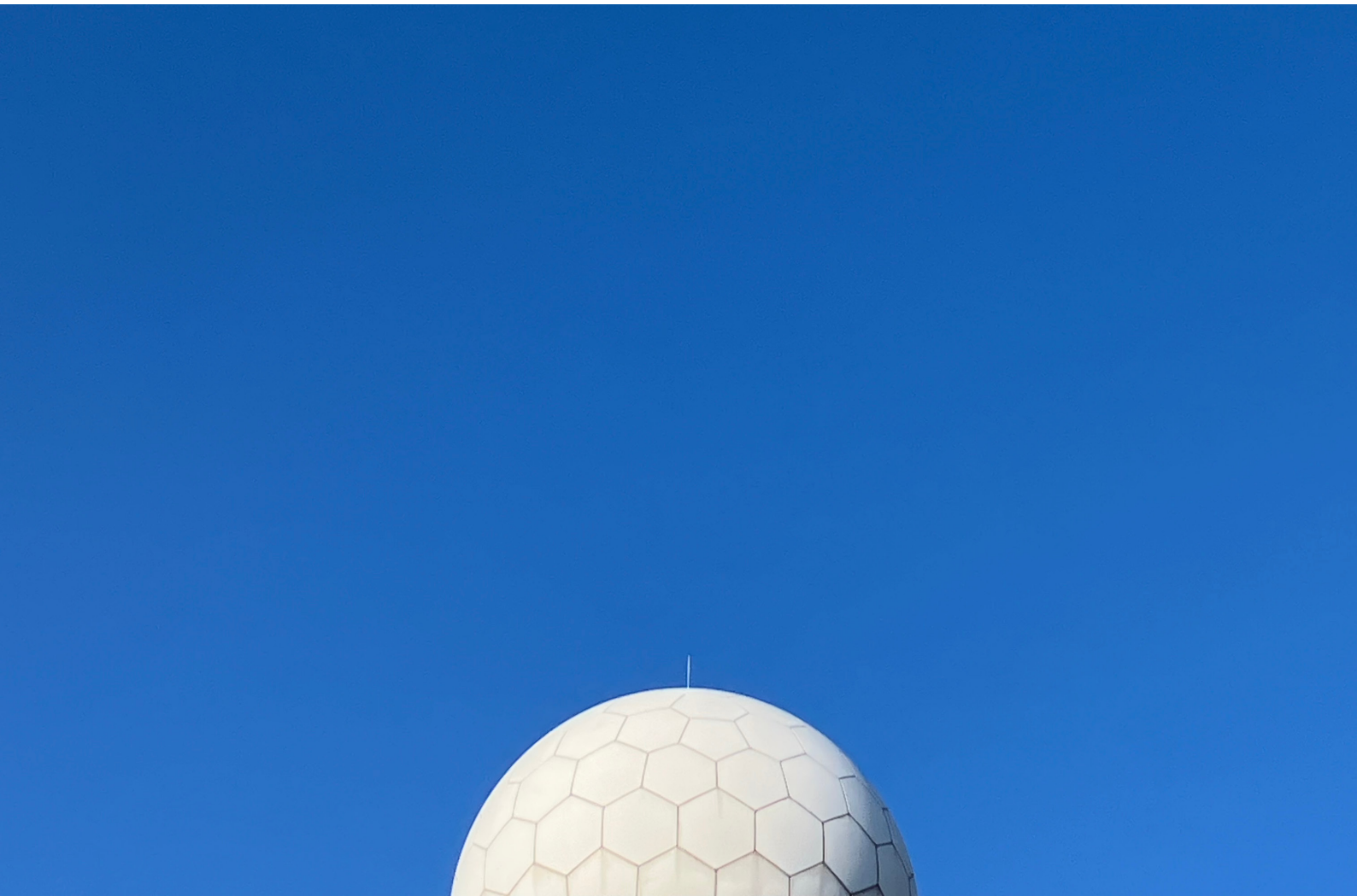
“Dwelling accross scales”

The second project: “Dwelling across scales” (2025-ongoing) further explored the potential of on-site interventions to manifest the multi-scalar nature of human and bacterial interactions. Local or translocal events would be conceived to reflect their entanglement over multiple scales of time, space and self. They would be designed to surprise and “irritate” publics in the midst of their everyday life and activities, igniting their curiosity and inviting them to learn more through educational activities and care practices.

This kind of engagement strategies would choose specific historical and/or culturally significant sites, reveal their “unseen or unheard” microbial dimensions, and turn minds around to reorganise “world views” around “cross-scalar p.o.vs”.

These local interventions could be remotely resonating with other places through digital connectivity, and would let us for instance mix soil sounds extracted from two different sites to generate “common grounds” between two or more different places perceived as distant or divided (by local, regional, or even national borders).

Such interventions would be designed for publics to make collective experiences, stimulate positive interactions between individuals potentially perceiving each other as others or even antagonists. Navigating between and through different scales of observation ranging from the microbial to the corporeal, the local or the social, one would come to perceive and analyse the channels of interaction existing between traditionally bounded concepts perceived as autonomous or separate: places, histories, settlements, grounds, plants, bodies, individuals, communities, gardens, streets, cities.





TEUFELSBERG

Teufelberg's historic listening station proved itself to be an attractive site to explore various forms of interventions using soil literacy practices to thematize or connect with larger scale issues such as societal or geopolitical topics.

Situated on top of a second world war "Trümmelberg" (rubble mountain), the abandonned US spy station presents a rare combination of cultural, natural and geopolitical histories inviting experimental and exploratory historical readings. Chosen by Adolf Hitler as the construction site of a future military academy (Wehrtechnische Fakulät), the site would become an open sky dumpster on which the ruins of a destroyed city would be piled up.

Teufelsberg would thus become the highest hill of the city and the unexpected site of ecological renewal thanks to a series of successful rewilding experiment. The US listening station built on its top to spy on East Germans would eventually make it one of the most memorable building of the cold war's culture of espionage and mistrust. The unique composition of anthropogenic soils and complex layering of history would make it an obviously attractive place to question the relevance and future of socio-ecological literacy in times of social fragmentation, far-right populism and increasing international tensions.

What can Teufelsberg anthropogenic soils tell contemporary society about the destruction of democracy, the disaster of international conflicts and the rewilding of destroyed settlements? Our prototypal "self-spying" intervention is based on well-known soil listening practices usually used to assess soil health. We would bring a spin by broadcasting Teufelsberg soil sounds directly on the internet, and organise improvised listening sessions in the streets of Berlin and beyond.

The extraordinary sounds produced by bacterias, worms, fungis and roots interacting in Teufelsberg´s anthropogenic soils could be thus heard accross the city, "inverting the spying process" and inviting Berliners to listen to the mountain that was once listening to them. It would also invite them to further question what they are aware of, pay attention to their own metabolism and that of their fellow residents, and possibly dig a new "common ground" between and around them.

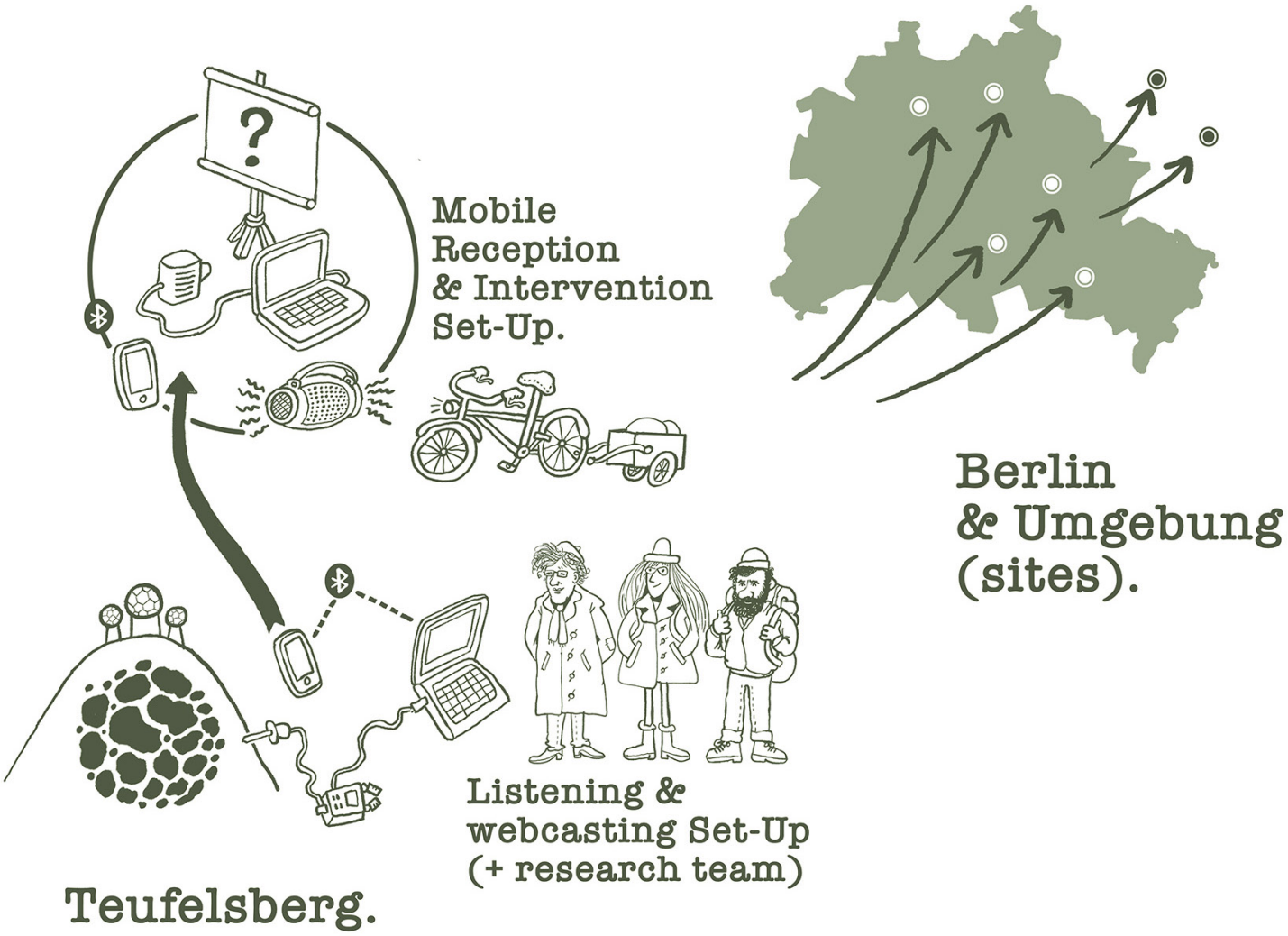
This would help us question what is visible and audible around them. "Listening to itself" in the company of those it was regarding as a threat, the mountain would help us explore the supposed (invisible) "enemy within" and discover a new ally potentially reshaping established notions of community and belonging. Understanding the ambivalent and multifaceted reality of bacterial interactions in and out and through bodies once believed to be sealed off each other, participants would come to understand the importance to put the "tiny" on top of the pyramid of (common) needs.



Dr. Lehmann & T.Ingen-Housz
on Teufelsberg (January 2025).







Technical set-up for the livecasting of soil sounds captured on the Teufelsberg and streamed out to chosen listening sites in the streets of Berlin and area.



Spaces inside the historical site of Teufelsberg, where temprary “Sanatoriums” and “Studios” could be installed.













Perspectives

These two projects let us explore how experimental socio-ecological literacy programs could be approached in and out of institutional settings. Ideally, they would be complementary and in some cases sequentially articulated : an intervention organised in teh streets could lead to the participation in an official educational program. Their distinctive quality would reside in multi-dimensional approach: participants are navigating accross scales, at times in a disorientating manner, to crystalise new forms of thinking and doing.

In the context of extra-institutional settings, a variety of intenventions such as the Soil Glossary performance or the Teufelsberg self-listening experiment could be organised in a variety of chosen locations potentially networked accross vast distances. They would be designed to ignite curiosity amongst diverse publics. A range of site-specific artistic interventions would be designed to upset established concepts and practices traditionally associated with soil, food, agriculture, and health. They would indeed question what we understand as socital cohesion.

Such interventions would first seek to expose the failings of inherited anthropocentric cosmologies and engage critically with their misleading binaries. They would draw attention to issues of balance and complexity along the soil-plant-gut microbiome axis. They would also indicate the lack of adequate policies protecting urban soils for human health. This approach is obviously "politicizing the microbiome" in ways allowing vital issues of balance to be reframed, debated and prioritized.

The critical engagement triggered by these interventions, moderated by the organizers, would demonstrate the need for further education, and thus point at programs nested in local associations and/or institutional settings offering a deeper angagement with "microbial dimensions", and their implications for society. Some would involve local initiatives and associations with direct connection to soil practices in private and public gardens, vacant lots, wastelands or areas in need of regenerative projects. The opportunity of collaborative work and diverse social encounters would be central to this particular undertaking. The social cobenefit would result from the productive awareness of the soil/human microbiome axis as a common resource and boundary-redefining agent.

In the context of institutional settings (schools, university, museums, etc...), this project could take the form of adaptable curriculum open to a variety of disciplinary orientations, without presenting them as "complementary". The multi, inter and trans-disciplinary spectrum would emerge out of the programme´s dramaturgy and its local context rather than a predefined carousel of disciplinary perspectives. The goal would be to demonstrate how questions formulated during the interventions "naturaly" generate interdisciplinary interactions : the program´s overall dramaturgy would unveil questions after questions, sending participants out to identify the kind of disciplinary perspectives needed to provide potential answers to issues discovered along the way. They would also be the occasion to discuss their limits and self-encapsulation. This open scope would indeed include lived experiences and "tacit knowledge", placing practioners´s expertise at the heart of implementability questions.

The participants would be initiated to the multidimensional complexities of human life´s entanglement with microbial worlds, meeting full front with the difficulty to name, model and communicate them, before drafting their own approach. Learning and teaching go hand in hand, - with a central concentration on experience design to motivate deeper and immersive learning.

Issues of communication and complexity would be here supported by regular, "experiential" encounters with the microbial world. As participants learn about these complexities, they would be encouraged and coached to create their own educational programs. Learning would thus be facilitated by the prospect of teaching. The interpersonal exchanges are central to the social dimensions of the project, as they would bring about various opportunities to confront received notions of identity and bodily boundaries. Its principal aim would be to strengthen socio-ecological literacy across various social groups by reflecting on the human co-dependancy with microbial agents redefining their sense of habitat.

It may seem surprising to build such a program in an arts university primarily training young artists and designers targeting careers and markets only inderectly preoccupied with matters of public health, social cohesion or environmental protection. Still, a closer look at the disciplinary interactions and public mission of an arts university may provide different cues. A vast range of contemporary art practices are concerned with the critical investigation of societal norms and values. Issues of gender, race, class, social justice, and environmental collapse have been central to a wide range of design and artistic practices for several decades now.

Many artists believe their role is to challenge established norms with aesthetic experiences revealing underlying socio-cultural dynamics that would remain otherwise invisible or unthinkable. Architects and designers are more likely to negotiate existing rules to shape the contemporary environments in which we live, work, relate and govern. Artists and designers challenge each other´s work along these lines of engagements with normative constructs, and their debates are informed by critical discourses provided by cultural studies and social sciences. Expanding the canvas of such debates with natural sciences would be a desirable goal.

Art universities also train future educators who will themselves conduct seminars and develop educational strategies for the next generations. There is no arts and design education without a sustained understanding of the social and cultural dynamics they both shape and reflect. The integration of natural sciences in the interdisciplinary conversations already occurring in the context of an arts university should therefore be unsurprising in the wake of a yet to be (fully) formulated "microbial turn".

If we are to live in a world productively aware of human co-existence with microbial dimensions, artists and designers can contribute positively by helping to shift perceptions and definitions towards a new idea of the self. As Bruno Latour coined it : "the autonomy of everybody is disappearing". What does this imply for the education of present and future city dwellers?

What would it take to explore new forms of subjecthood under the premise our collective entanglement with the microbial world, and seek to define together new forms of (co-)agency in a newly understood interrelation with the "rest of the world".

If one is to understand the role of arts and design as catalysers for cultural change, one can be led to imagine interactions between creative and reflective practices designed to "de-center the human" in a strategic fashion; - that is, to establish a complex, dynamic, multipolar web of dynamic interactions commonly understood to be a new socio-ecological nexus growing in the place of an outmoded, misleading and dangerous anthropocentric universe.

The goal is then to draw new overlapping lines between humans and their environments and moderate this re-mapping process with the social actors it may concern in the course of a life-long and life-deep educational project. Arts and design could thus be understood to be "tools" deconstructing "legacy paradigms", unlearn antagonizing and binary worlds and relearn widely inclusive, co-dwelling social practices through the recognition of humanity ́s codependant existence with the huge and the tiny dwelling in an out of our lives.

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