

Microbial Commons

Art – Science – Law project

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exhibition + art-law performances



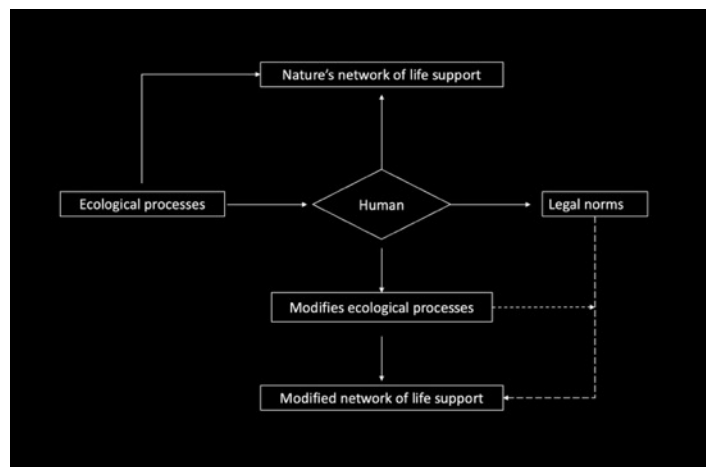
OVERVIEW

The proposed art installation is developed by the interdisciplinary team combining in a novel way state of the art developments in 3 major disciplines: micro-biology, environmental law and contemporary art. The work is supported by 3 international research laboratories, and the project proposes an evolutive universe composed as an immersive installation and includes a series of participative performances which encourage a strong public interaction.

In a dark room a set of works provide the background for an immersive experience which includes: video projections, works on screens, light works, all linked to scientific experimentation in the micro-biology laboratory which are enhanced through the dialogue that has taken place through the collaborations for more than two years between micro-biologists and environmental law.

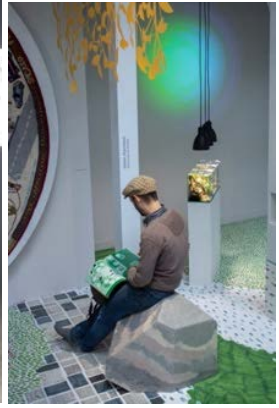
The monumental works contrast with precious miniature artefacts. The ensemble corresponds to the scientific scheme transcribing the process of modification of life support that we impose on nature.

At regular periods (e.g. every weekend) the installation is transformed into a set where *Legislative Theater* interventions take place. These are inspired by Boal's legislative theatre which is enhanced by the initiative of the International Rights of Nature Tribunal seeking to represent the interests of non-human beings (in this case microbes) in the tribunal and before the law.

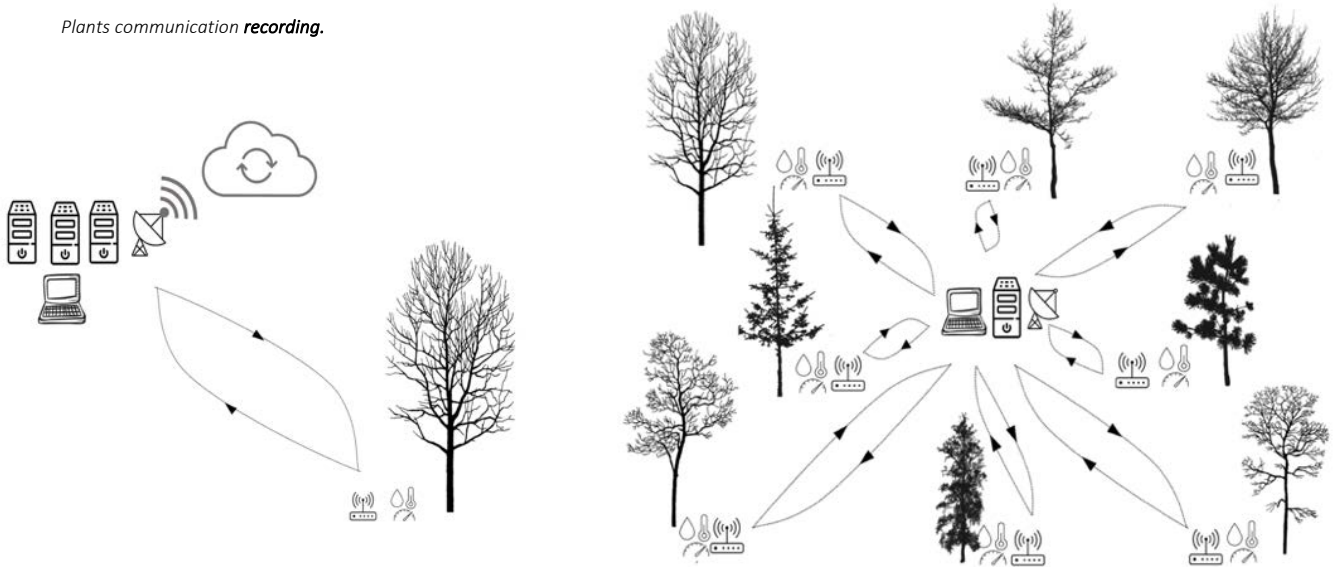


Installation schema.





Plants communication **recording**.



BASIS FOR THE PROJECT: *Rights of Nature*

Our project, *Microbial Commons* is a part of the *Rights of Nature* program developed by Saskia VERMEYLEN and Olga KISSELEVA since 2022 in the Strathclyde Centre for Environmental Law and Governance. The focus of the research is to set up a long-term collaboration between art-science and law in the area of environmental humanities. Art and law are currently exploring in their own respective disciplines how nature can be represented in its own right. This raises fundamental and existential challenges for lawyers because environmental laws are deeply anthropocentric and the sources of legal theories are humanistic. Rights of Nature or Earth Jurisprudence is gaining traction across the world as rivers, mountains and whole ecosystems are given rights and legal personhood. But given the unprecedented challenges of biodiversity loss and global warming we need a more progressive and experimental legal intervention. Rights based solutions are still anthropocentric and humanistic and ignore other ways of knowing the natural world and our relationship with it.

The collaboration between science and arts has developed into a very productive space to open up a new understanding of the relationships and accountabilities that exist between human and non-humans. As an artist Olga KISSELEVA works across arts&science and explores in dialogue with others (e.g. Indigenous peoples, citizens, activists, scientists) what it means to live relationally with plants, trees, fungi, microbes, animals, and ecosystems. Law is often the missing link in these multispecies explorations despite the fact that it has a very important role to play in changing and govern our relationships with nature. While the arts are experimenting in their practice how to represent multispecies relationality, law is still struggling to embrace these new temporal and semiotic opportunities. The language of the law is still embedded in human stories. But in the arts, there is a growing awareness that we need to be more attentive to multispecies' relationships, their languages, and their interdependencies.

Just like living and non-living entities are connected and co-dependent, so are arts and law also co-dependent. In order to halt further environmental destruction and restore an ecological balance we need new policies and laws that are formed and shaped by artistic and scientific enquiries that are challenging the anthropocentric roots of our existing laws. Therefore, we are developing an interdisciplinary research agenda that examines the relationship between arts and law in order to map and govern the deeply entangled relationships between living and non-living organisms.

PERFORMANCES: *Legislative Theater*

In order to experiment the potential relations, and functionalities, and to build a new environmental law dictionary, a group of legal scholars and environmental philosophers (Mara NTONA, Linda MENSAH, Antonio CARDESA-SALZMANN, Iona MCENTREE, David KOTHAMASI, Neil WILLIAMS and Jeremie GILBERT) started to work with Saskia VERMEYLEN and Olga KISSELEVA to develop a theatrical performance that draws together different environmental components, that are based on these scholars interests and expertise that coalesce around Rights of Nature and Environmental Constitutionalism.



Example of Legislative Theatre through Dance



Example of Rights of Nature of Tribunal

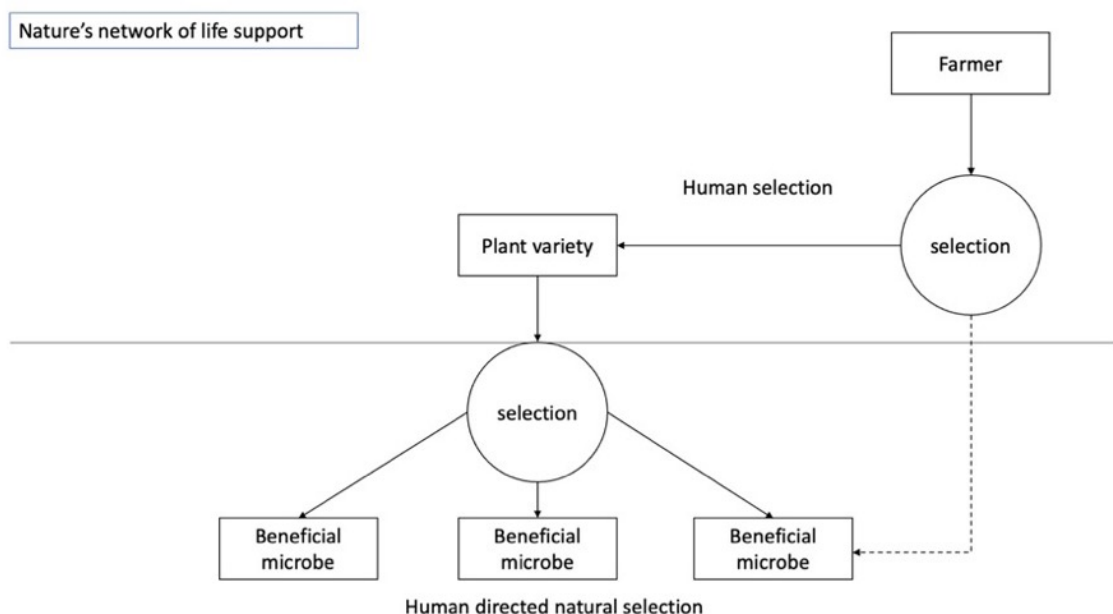
Discussions are emerging around the following themes:

1. How do different societies relate in current and historical cultural practices to trees and how do they communicate with trees?
2. How do trees harness the power of microbes to combat climate change? Can the mutual beneficial communication between trees and microbes be represented as legal biosemiotics?
3. How do trees influence the behaviour of bacteria in the rhizosphere and how does this beneficially impact soil health? What is the intellectual capacity of microbes and how do they contribute to the protection of soil biodiversity and health? Given their importance for protecting soil biodiversity and health, how can we protect microbes as commons?

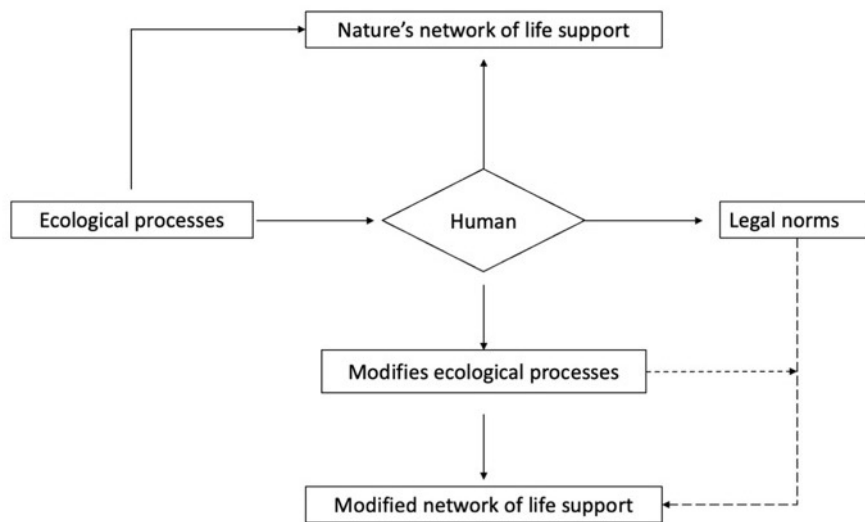
INSTALLATION: *Network of life support*

The structure of organismal communities in nature is sculpted by natural selection – an ecological process with a keystone role in evolution of species. Natural selection picks out species that are best suited to survive in the boundaries demarcated by environmental parameters. Abiotic components of the ecosystem such as climate and soil chemistry select specific plant communities that have tolerance to the limits established by them. For instance, evergreen tropical rainforests are established in the wet tropics with soils having limited supplies of essential mineral nutrients like N and P. A reciprocal selection process now takes root. The abiotic components make the initial selection of plant species assemblage. The selected plant species modulate the abiotic composition which then leads to a new round of selection and the process continues.

With the establishment of the Anthropocene – human driven modulation of the planet’s ecosystems – the direction of natural selection has increasingly become susceptible to human choices. This is particularly so in agriculture and every human economic endeavour that exploits natural and biological resources. In agriculture humans tailor the abiotic components (e.g. soil chemistry) to be conducive for the growth of human selected plants (crop).



At this point, we would like to bring in a *Titanic* analogy. A big portion of the iceberg picture that is hidden from human conscious selection is the microbial flora in the rhizosphere (soil in the vicinity of roots). This microbial community fixes atmospheric nitrogen and cycles a range of other mineral nutrients required for plant growth. By providing a nutrient stocked substrate (soil), this microbial assemblage selects host plants that favour their (microbe) fitness. A counter selection is also in operation wherein plant species select microbes that foster their (plant) fitness. This selection cycle is responsible for the evolution of many of the beneficial traits in plants and microbes.



But humans have claimed exclusionary intellectual property rights for the discovery of these traits. While these rights have been defended as necessary for human innovation and progress, they ignore the contribution of ecological processes. Although ecological processes appear to be a product of random/chance events, in reality they are tailored to meet the specific challenges imposed by the environment. Consequently, they are analogous to the same ingenuity which humans apply to meet their own survival requirements. Our argument is that this analogy makes a compelling legal narrative to recognise the products of ecological processes as qualifying for intellectual property rights in an enhanced capacity that unlike the current model is more progressive and democratic in that it protects nature from becoming commodified and propertised but seeks to award protection to these evolutionary biological processes as intrinsic rights that belong to the common heritage of the Earth.

AUTHORS:

Olga Kisseleva is artist and researcher, head of the international ANR EDEN ARTECH program led by the University Paris 1 Pantheon Sorbonne where she teaches contemporary art. Olga Kisseleva has exhibited at major arts museums, including: the Centre Pompidou (Paris), KIASMA (Helsinki), National Center for Contemporary Art (Moscow), ARC (Paris), Reina Sofia (Madrid), Art Institute (Chicago) and the Biennials in Venice, Istanbul, Dakar, Tirana and Moscow. She works in science and media art. Her work employs various media, including video, immersive virtual reality, the Web, wireless technology, performance, large-scale interactive art installations. Olga Kisseleva’s work explores through an arts praxis the communication of plants which she now seeks to develop further into the next stage by producing an arts installation that performs the legal recognition of the plants.

David Kothamasi is a Professor of Environmental Studies at the University of Delhi in India and heads the Laboratory of Soil Biology and Microbial Ecology. In 2023 he is a Marie-Curie fellow at the Strathclyde Centre for Environmental Law Governance at the University of Strathclyde in Glasgow, United Kingdom. His research is interdisciplinary and covers the fields of ecology, environmental studies, and law and policy.

In collaboration with a multidisciplinary blend of researchers from science, mathematics, engineering and humanities David performs a mix of basic and applied research on the role of microorganisms in ecosystem function and human economy. David's research can be classified into three main topics: (i) better understanding of the ecosystem through analyses of the drivers of ecosystem function such as symbiotic mycorrhizas and rhizospheric bacteria; (ii) investigation of the effects of toxic pollutants on the microbial community (more specifically, ionizing radiation, heavy metals and organic pollutants) and; (iii) development of new restoration technologies using microbial inputs to keep the environment safe and remove unwanted contaminants. He has a degree in law and takes up legal research to develop linkages between outputs of scientific research with policy particularly with respect to utilization of biological resources, human relational network with ecological processes and intellectual property rights. David has published his research in high impact Journals such as *Nature Biotechnology*, *Conservation Biology* and *Global Change Biology*.

Saskia Vermeylen has been working since 2016 on Rights of Nature and Earth Jurisprudence and has published papers and chapters in this area arguing that forests, rivers and ecosystem have their own language and communication system (legal biosemiotics) and therefore should be able to represent themselves in the law by recognising nature's language as a source of law. Conceptually, it is important to have an immersive and embodied understanding of nature's laws and through an arts-science-law enquiry/installation under the artistic direction of Olga Kisseleva she develops the legal component of the arts installation that represents nature as a legal entity. Saskia has already been awarded UKRI and Horizon 2020 funding in this area, and she is currently hosting a Marie Curie fellow (Professor Kothamasi) researching the relationality of microbes.