Feral Labs Node Book #1

Rewilding Culture

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REWILDING CULTURE

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RE-LAX Series
From Trieste to Vladivostok,
over the Pacific, and
back again

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INTRODUCTION

Uroš Veber

THE START—THE SETTING

In 2018 we began to shape the concept of Feral Labs. Though the idea and the need to connect a series of events across Europe that did not fit any of the usual categories had been intuitively with us already for some time, it was only then that the incentive grew strong enough and the whys and the hows were figured out and put on paper. Before that, there was a camp, a summer school, a Wonderland, something that described itself as a "place where ideas come to play," there were Field_Notes ... Not even one of us used the same word to capture what we were doing, but we knew there was something our practices had in common. We were, and we stay, a rather diverse bunch, catering to overlapping yet very different crowds. Some of us were around for some time, others were just about to test our pilot editions. Nevertheless, we needed a name, a term for what we were doing. So, we called ourselves the Feral Labs Network.

At the time the maker culture was all the buzz. Numbers of Creative Hubs in various forms and sizes were growing everywhere. It was a period which brought a tide of maker-spaces and creative labs, it was the time to build and even to invest into peer learning and co-creation modes, within and outside the scientific and educational institutions. Everybody was welcome on board, and to some, the "Fab" in the Fab lab even seemed to refer to "fabulous" not to "fabrication." Numerous reinvented spaces operated as initiatives that gave participants a social space equipped with technological opportunities, a space where everyone is encouraged and obliged to experiment, explore, create and share. The importance of the social and the communal aspect was finally gaining momentum again in the DIY community, and the debates about the importance of the Free and Open Culture did not need to be explained all over again to the policy makers. No wonder the communities who rely on non-proprietary content kept growing stronger and got much

more diverse also with support of various strains of public funds. They answer to all the contemporary jargon, which we somewhat dubiously accept, propagate and believe in, but sometimes in the same breath dismiss as empty buzzwords: Open and Citizen science? Yes! Life-long learning? Check! Localization of production? Yes. New business models? Of course! Future technologies? Since always. New and innovative use of old technologies? No problem. Reinvention and innovation in educational processes? We are all about that. Audience development? We can develop anything!

The modus operandi of all these Creative Hubs is one's learning-through-doing. Even more cherished than becoming the ultimate expert is one's ability to share their skills and knowledge within a social environment and readiness to learn from one's peers. In the realm of the fast-shifting and evermore affordable technological advances, informal education plays an indispensable role, and these community-based activities offer just that. They enhance our knowledge and capacities in the world of paradoxical lack of information in an age of ceaseless information overflow. The peer-to-peer communication thus becomes an indispensable tool, a mechanism that helps navigate the sea of information and create meaning. Not to mention that peer learning adapts to the needs and interests in a much swifter way than the systems of formal education.

BEYOND THE CREATIVE HUBS: THE CONTOURS OF OUR METHOD

However, Feral Labs are not about the explosion of Creative Hubs and Labs, but a way to move and see beyond their surge. While we observe converging creative processes and a new systematization of contemporary creative communities, we propose to think about formats which cherish the creative process even more than the presentation of creativity. Of course, we are hardly the first ones not to

take the galleries and stages as the only places where art and creativity manifest themselves. Nonetheless, we claim that the important events are those that are more about making than presenting and thus do not focus on end-products, but better address the paths and processes.

Since creativity, innovation and learning are not processes that occur at the push of a button and are a matter of intrinsic individual drives rather than forced motivation, what creators need for these to arise are environments where information can readily flow and there is plenty of freedom for them to experiment, fail and even change course or focus. What they and we need are not the labs we have, but the people and the processes that grow out of them, the labs that go wild; the Feral Labs.

Within Feral Labs we focus on processes and activities like peer learning, field work, research and co-creation. The six partners Projekt Atol (Ljubljana, Slovenia), Bioart Society (Helsinki, Finland), Catch (Helsingor, Denmark), Radiona (Zagreb, Croatia), Schmiede (Hallein, Austria) and Art2M/Makery (Paris, France) joined in their common interest in art-science research and

2019

04.—10.08.2019,
PIFcamp: DITO×ication
@ Soča, Slovenia

12.—19.08.2019,
Catch Summer Camp 2019
@ Helsingør, Denmark

01.—07.09.2019,
Electric Wonderland 2019
@ Fužine, Rakov Jarak, Croatia

11.—20.09.2019,
Schmiede19: better
@ Hallein, Austria

15.—22.09.2019,
Field_Notes—The Heavens
@ Kilpisjärvi Biological Station,
Lapland/Finland

2020

02.—08.08.2020,
PIFcamp: Under Construction
@ Soča, Slovenia

16.—24.08.2020,
ArtLabo Retreat
@ Île de Batz, Bretagne, France

18.—22.08.2020,
Catch Summer Camp
2020—Soft Electronics
@ Helsingør, Denmark

14.—22.08.2020,
Electric Wonderland 2020
@ Fužine, Rakov Jarak, Croatia

16.—25.09.2020,
Schmiede20: Horses
@ Hallein, Austria

contemporary do-it-yourself (DIY) & do-it-with-others (DIWO) communities. We initiated a network of temporary Creative Hubs that vary in scope, format and topics.

Some of our Feral Labs partners have existed for a while. They have been using our newly formed platform as a new ground to address issues regarding long-term outreach of the projects that were developed and presented during these events. Others might have used the new alliance to start and test their own Feral formats. What all partners nonetheless have in common—despite coming from very different backgrounds—is a joint starting point, which might as well be considered as our method, our loose recipe.

By design, Feral Labs are of **transdisciplinary** nature and discern no clash in focusing on production of cultural artefacts and philosophy, hacking and tinkering with technology, sensing environmental data, creating educational content and addressing resilience by investigating environmental and technological challenges, all within the same event framework. By bringing together the worlds of art, humanities and social studies, education, digital activism, natural sciences and technology, participants inevitably learn about each other's methods and processes, and benefit from each other's know-how (tacit knowledge), know-why (the scientific explanation) and know-who (communication with & to). They can tap into the knowledge they usually could not access and discover new ways of approaching and defining social, political, natural and technological questions.

Feral Labs rely on and subscribe to the ethos of **open and free** software and hardware as harboured by the Free and Open Source movements. Furthermore, the participants of Feral Labs are oftentimes themselves avid champions of these ideals. However, Feral Labs are designed not just to propagate the use, the extraction of these principles, but also to encourage participants to publish their code, designs and documentation.

Feral Labs create environments which are **temporary** and can be regarded as hybrids between a laboratory, festival and an artist-residence. In opposition to labs, studios and maker-spaces considered to be the mainstay domiciles of contemporary creation, the Feral Labs Network hosts events that take place within constrained, but very intensive timeframes. Communities that come together to create and exchange ideas and knowledge only exist for about a week (between 10 and 6 days) on an annual or even biannual basis. Intensive research, development, sharing and presentations within these temporary communities help form long-lasting creative and social bonds between the participants that transcend the duration of the events. Parallels to Hakim Bey's Temporary Autonomous Zones might be unintentional, but it is exactly their limited (yet periodic) time frames that we are interested in. Namely, limitations in duration articulate the power of these non-hierarchical peer-to-peer learning-while-doing activities. This does not entail that programmes are completely unstructured; but the programme might as well be considered as self-assembled. The constrained period effectively catalyses the power of self-organisation of the proceedings according to the actual demands and capacities of the participants.

Feral Labs employ **communal isolation**; relative remoteness is a tool and as such helps participants break away from their everyday processes and find themselves in a radically different social context. Feral Labs often would not take place in urban environments or at existing artist-run spaces, but rather in relatively remote areas, insulated from creators' everyday life. Remoteness is one of the key methods that help create and maintain focus. Participants are thus withdrawn from their everyday obligations where they are often expected to be invariably available. To be detached from the mundane social obligations is paramount. The only distraction other than the setting is the intensity of intertwined

activities of fieldwork, creation, hacking, workshops and presentations that take place in parallel. Operating within this transient social removal produces results which are relevant to participants and form strong creative bonds within the temporal community.

ACTIVE PARTICIPATION: IN NEED OF PHYSICAL SPACES

In the last ten years we have observed the hacker spaces of the late 90s and 2000s slowly evolve and grow away from computer screens. As digitalisation progressed, our spaces also started to spill into more than the two dimensions of our monitors. It was not just the 3D printing and a new interest in virtual and augmented realities. There were new crowds who were investigating a more hands-on approach and seemed to love the smell of the solder resin, e-textiles emerged, and we certainly cannot imagine the world without Arduino controllers anymore. New physicality was found. As the novelty of computer screens wore off, the bodily crawled back in. Somehow hacking, making and exploring tangible objects effectively resonates better with people. For most it seems much more gratifying to play with a humble LED and a simple piezo speaker than to see that same change simulated on a LED matrix of a monitor. Working with volumes certainly seems to build much more interested and inclusive communities; the entry bars lower also because the "noobs" and the "masters" can discuss an object, but the former can hardly hold a conversation on a database problem.

The shift beyond the flatness of screens becomes even more apparent if we consider how techno-cultures, which were primarily at home in the digital and electronic, found new fascinations and preoccupations in nature, with the organic. The current which brought the surge of topics such as human and non-human relations, symbiosis and (post) anthropocentric perspectives came with (and because of) the

much-needed shift to more inclusive modes of thinking, being and doing. Strategies of care, the imaginary of cultivation and growth, found their place next to the strategies of engineering and building. Whole new worlds opened once the notion of hacking became less bound to computing; hacking moved beyond artificial life, beyond simulation, it reached further with the hybridisation of the electronic and the biological and then moved beyond that. Hack everything: hack money, hack food, hack bacterial colonies, hack you, hack life! For the existing Creative Hubs, life was, after all, not reinvented in Second Life, but found in the fascination with life itself; life in all its multi-dimensional intricacy.
A few years later, at the beginning of 2021, we find ourselves in the middle of public hygiene measures which wiped out or significantly reduced the social aspects of our labs, hubs and spaces, as well as galleries, stages and educational institutions. This very recent past now feels very close, yet remote and strange. The communities that inhabited these physical spaces did not die out, but their social bubbles, which guaranteed their constant evolution, shrunk and became less permeable, their membranes hardened, hardly allowing any new peers in. It is clear now what we already knew—that the essence of hubs are not the physical spaces, tools and infrastructure they offer, but their societal and social dimensions. Even if a lot of labs, hubs and galleries facilitate remote participation (which in theory reaches even more people, has more views and "likes") and some allow for work in small groups, it seems that the new and unexpected growth of social links they used to encourage is stunted by the lack of participants' physical presence. Paradoxically, compared to the online meetings which render out the comprehensiveness of working together, the walls are sometimes the ones that make the existing clusters more porous. For those who are working at the intersections of disciplines and specialities, for instance combining communities of artists, designers, engineers, scientists and

even business, experience the time of shut doors also as a time of calcification of traditional barriers. Being able to pay a visit, to get to know, listen and observe the potential future collaborator, where they work and "perform" before proposing an unlikely artistic proposition became impossible. Again, we find that people connect, and communities grow and collaborate better when operating in an actual physical space. That is why the current pandemic-induced era of screen-mediated social interactions feels like an unwelcome ghost from the past, something we are forced to adapt to, but are also reluctant to accept as the new "normal." The lessons from the alternative culture's fight for (and flight to) a physical space resonates in this context. We are reminded again of the old lessons which taught us how the autonomy and creativity of scenes become possible and determined by the spaces they occupy. In the long run, the shift to virtual spaces, to screens will not be enough. Even though Feral Labs rely on digital networks and technologies even in the remotest fieldwork, the self-evident physicality of our temporary isolated communities should be stressed again. The connections and knowledge we create are grounded on the actual terrains where Feral Labs take place. It is there, on the ground, where the Feral communities function in all their visceral entirety and establish their transient integrity. The materiality of places matters.

It is precisely the tangible reality of a space that sets the stage for our Feral Labs as well; we can only think of them in and with a space—should they have taken place anywhere else, some principles could have remained the same, yet they would have never been the same. These physical places, with all their constraints and properties, catalyse, enable and inform our ways of being and doing. Why else would it make sense to take the journey to the Île de Batz, as was the case with the **Art Labo Retreat**? Why co-work at the ex-industrial complex at the Pernerinsel for ten days at **Schmiede**, why

organise a **Summer Camp** at a former shipyard? Why take the effort to research in the sub-arctic Kilpisjärvi at **Field_Notes** or set the **PIFcamp** in a remote alpine village? Or at Crab Stream, hidden within "the green hearth of Croatia," as in the case of **Electric Wonderland**? It is precisely because places decisively shape us. While we inhabit them, but they also inhabit us; they help us make our Feral Labs feral.

FOR THE OUTRO, AN INTRO: A NEW START

Feral Labs Node Book #1 comes in two forms, a tactile printed version and a portable digital format (.pdf). It covers the first two summers of our Feral Labs Network and intentionally keeps a non-linear, scattered structure. As Luis Campos explains in the following pages: "The feral is, after all, intermittent, staccato, provocative, opportunistic."

For the first two years, the Feral Labs Network was co-funded by the Creative Europe Programme, which helped us develop five Feral Labs each year and support a wide variety of Artist-In-Residence (AIR) programmes. The goals in this period were to create and cross-pollinate knowledge, develop non-standard temporary formats for creation and sharing, explore technological and environmental challenges, build a resilient network, rethink and boost our outreach.

This Node Book includes the interviews which present each partner's rationale behind individual Feral Labs, how each of them came to be, how their physical spaces shape their content and also how we have adapted our activities to the summer of 2020, which drastically tested the resilience of our Feral Labs, not just by reducing the scope of travel, but also by the precarity induced by the constantly shifting measures and plans. A year that felt wilder than the most Feral plans, a year that mostly kept us all home-bound, but luckily allowed a small window, a chance to adapt and, nevertheless, proceed.

It also includes four essays commissioned for this publication, which help us address some of the key notions of

our project: ferality, alternative learning environments and resilience. In between one will find photos that offer glimpses into our Feral processes. While Campos' essay examines different notions of going feral, Stefanie Wuschitz analyses how to accomplish independence through interdependence, collective practice and mutual self-care, and investigates the importance of non-formal learning. The remaining two essays reflect on resilience but approach the topic from very different angles; Rosemary Lee examines the notion of resilience in the world of machine learning, while the closing chapter by Xavier Fourt presents a speculative investigation which suggests leads for future resilient micro-systems and experimental territories. The many AIR programmes that could have filled a whole new Node Book are summarised at the very end of the publication.

We aspire this publication to be only the beginning, an invitation for a new series, issued at irregular intervals, documenting, presenting and thinking with and about our practices. Hence the #. We want the Node Books to keep their wildness, to be able to move freely between any type of feral research practice, terrain work and exploration and provide space for challenging and truly feral reflections. The next steps will hopefully enable us to grow the mesh of our Feral network, both in its width and thickness; we want to add new nodes, include more existing Feral Labs and seed new ones, and in general support feral activities as activities of intense and unburdened exploration. But most of all, we hope that as you move back and forth through the publication in your hands, you feel invited to join us at our future Feral Labs.

ACKNOWLEDGEMENTS

First, we are grateful to have been able to create, investigate, forage information and forge knowledge with hundreds of participants during the last two years. Thank you for all the memories we created together,

insights and shared thoughts, your dedication and generosity. You are the essence of all Feral Labs.

There are many organisations, people and partner organisations without which we would not have been able to organise our Feral Labs. They deserve much more space in this publication than we were able to provide: PIFcamp would not exist without the partnership with Društvo Ljudmila and would have been very different without the support of Rampa Lab and Biotehna. Not unlike how the ArtLabo Retreat would not have happened without the ArtLabo Network. Catch's Summer Camp 2019 was only made possible in collaboration with the Aalborg University and the IT University of Copenhagen. The inaugural Electric Wonderland was co-facilitated by Drugo More and Association BIOM.

We also want to once again thank again hosts, who allowed us to populate their facilities and shared with us the all-important environments: The generous hosts of PIFcamp in the village of Soča, the Flajs family, the Caritas facilities by the Diocese of Koper and the Primary School of Bovec. Catch's Summer Camps inhabited the facilities of the The Culture Yard in Elsinore. Schmiede could not have been imagined without the volumes and characteristics of Hallein's Alte Saline. The Scout union of Split welcomed the Electric Wonderland at their Rakov Jarak's centre. The Field_Notes were always kindly welcomed in Lapland by the Kilpisjärvi Biological Station of the University of Helsinki. The ArtLabo retreat could not have taken place without the hospitality of the Colonie du Phare of the Île de Batz.

We also wish to acknowledge the wider network beyond our immediate group, the beacons, inspirations and friends, who build similar vessels and navigate similar waters as the Feral Labs Network: The Dinacons, organised by Andy Quitmeyer, Tanseem Khan and L. Wilkins, Homemade, organised by SGMK and Oki Wonder Lab by Hackteria, Lab Kill Lab and STWST 48H Linz

curated by Shu Lea Cheang. Also, No School Nevers, organised by Benjamin Gaulon (Recyclism) and Dasha Ilina (Center for Technological Pain), and the events such as Hackers & Designers, Cultivamos Cultura's Knowledge Residencies, Labomedia's Open Atelier, Nowhere, Comices du Faire, and all the other formats we only wished we would have been able to connect to in 2019 and 2020.

ESSAY 1

Going Feral

Luis Campos

Luis Campos (Ph.D.) is trained both biology and in the history of science, specializing in the history of the life sciences in the twentieth century, especially the history of genetics. His scholarship integrates archival discoveries with contemporary fieldwork at the intersection of genetics and society.

Feral. From *ferus* (L.)—wild.

1. Of a deadly nature; deadly, fatal.

"Life, um, finds a way." This most famous utterance from *Jurassic Park* is an evocation, an invocation, of ferality. Of uncontrolled ecological escapes and explosions, freedom from systems manipulated and dominated by humans. Fatal, even. But what if the feral is not simply that which is to be feared, but the unbidden, reversed potential of the more-than-human Jurassic ark of possibility? What if the feral is what finally emerges when all hope of a completely controlled system has run out—a sort of reverse Pandora's box where after domestication, discipline, engineering, design, implementation, and control, have all flitted away, the final snarling item to come reticently bounding out of the box, freed from prior human restraint, is the feral? We need a theory of the feral.

What does "Hogzilla"[1]—a giant feral pig more than 2.7m long and weighing over 360kg—have in common with feral humans past and present: the medieval man of the greenwood, the Neanderthal, the mythical Sasquatch? And beyond the human, are extraterrestrial others the product of feral fantasies as much as genetically engineered GloFish®? Can the alien or the aesthetically pleasing

1 See Abraham Gibson, "Harvesting Hogzillas: Feral Pigs and the Engineering Ideal," in Luis Campos *et al.*, *Nature Remade: Engineering Life, Envisioning Worlds,* Chicago: University of Chicago Press, 2021. See also Helen MacDonald, "Nothing Like a Pig," *Vesper Flights*, London: Grove, 2020, p10. Or instead of feral pigs and boars, perhaps a giant hogweed? "A Toxic Alien Is Taking Over Russia," *New York Times,* October 3, 2020.

be as feral as the fearful?[2] Ferality may be harmonic: a fundamental with multiple but distinct overtones.

If the field is the potential space of most envisioned feral encounters, then the laboratory is often framed as the place the feral has *escaped from*. Or better put: laboratories, like studios, are spaces for the production of controlled ferality. Beakers, bacterial fermenters, and digesters: the technologies of unconstrained growth, sieved for utility, for novelty, can be theaters for the emergence of the unexpected. A bolt from Zeus, a cosmic ray, passes through a colony and the world is changed, mutatqd. Feral radiation, uncontrolled from the heavens above, generates feral amino acids and feral proteins, mutational novelty emerging in pure strains of bacteria, running for thousands of generations. In Richard Lenski's labs the feral produces the future from hidden unknown novelties that lay within the cell undetected for generations before springing forth, digesting citrate and making new digestions possible.[3] New branches of evolution, new ways of measuring and assessing the happenstance: the unlikely, the contingent, the "founder effect."

And if laboratories are the places the feral has *emerged in*—spaces for the production of controlled ferality—then nowhere were the links between the feral and the fearful as legion as in the early days of genetic engineering, when mutational possibilities dovetailed with prospects for

2 "Life is fundamentally uncontained, and those built for ornament still deserve a feral chance." Adam Zaretsky, "G®FPR: The GloFish® Freedom and Reconciliation Project," *TDR The Drama Review* 54, 2010, p2-3. "Adam insisted that mutants deserved the right to enjoy their own existence, not just live for the sake of corporate profits or lowbrow aesthetic pleasures." Eben Kirksey, *The Mutant Project: Inside the Global Race to Genetically Modify Humans,* St. Martin's Press, 2020, p56.

3 http://myxo.css.msu.edu/

intentional design.[4] Although some tried to reassure that "the chance of these strains transmitting their plasmid to a more vigorous, feral relative before perishing seems to me remote," the feral was seen to pose risks to the familiar—literally: "Let each scientist decide at the outset of his experiments whether he would care to expose himself, or better, his children, to the newly assembled 'agent.' If not, let him learn and use the techniques of containment needed to control such agents …"[5]

But the feral is by definition that which we have made, and has become beyond our own capacities to make or to control. It is the result of our deliberate actions—that which is domesticated, then undomesticated once again. It comes back to bite us.

2. Of or pertaining to the dead; funereal, gloomy.

A divine spark of inspiration, driving us mad. A slightly different accent in the language of life, the smallest of interventions, and a few amino acids in a codon transform meaning: the feral goes viral. What can we do but laugh—a comic ray piercing the Petri dish of our lives. A bat in a cave, a seafood market, modern networks of global commerce and transpositioned bodies—a daring dance of unconstrained communal capital—an explosion of fierce movement suddenly stilled by domestic detention. Welcome to 2020.

Still, fixed in place, we have nevertheless gone feral in our own homes and lives. In the place of a four-legged

4 See Luis Campos, "Strains of Andromeda: The Cosmic Potential Hazards of Genetic Engineering," in Luis Campos et al. *Nature Remade: Engineering Life, Envisioning Worlds,* Chicago: University of Chicago Press, 2021.

5 Irving P. Crawford, MD, Dept of Microbiology, Scripps, unpublished letter to the editor, *Genetics*, October 1974. Folder 611, "Correspondence" (November 1974), Oral History Collection on the Recombinant DNA Controversy (MC100), MIT Special Collections.

beast, snarling, snapping at passersby from behind the fence, or creeping out from the edge of the forest, slinking to the forgotten food in the outdoor bin, decaying, rotten, and somehow still appealing to the beast, we have become feral in new ways. Hair unbound from its usual schedule at the salon and barbershop, cut by our partners and children; cultivating the sourdough starter like our grandmothers. Give us each day our daily bread, and forgive us our boarding passes, as we relive those days before plexiglasses were placed against us. And lead us not into our workstations, but deliver us from upheaval. Amen?

The familiar takes on new form. We make art (or don't) as never before. We watch television and cringe at so much social intimacy in the feral flow of electrons. As we click to enter the stream, life streams by: Heraclitus redux. Moments of terror and respite integrated in an undulating pattern of reprieve and retreat, as the seasons turned. Not only a winter, but a spring, summer, and autumn of our discontent. We long for the field—not to be free from others, but to be feral with others, *for real* together. But we encounter circumstances we never could have envisioned: we find each other *fearful*. How does one interact with another, once familiar, who is now unsure whether they want to interact with you? What is this if not another essence of the feral?

In 2020, the future manifested itself. Once the distant future, we cannot too quickly put this year behind us. And, with 20/20 hindsight, we fervently wish for an honest inversion: that instead of going viral, as we once hoped, 2020's viral things would go. Haven't we had enough things gone viral—of social media, of clicking and scrolling (that ancient technology turned into a verb), of eyestrain and RSI, of bodies so hunched over and constrained in lockdowns and social distancing that only a free release—feral ease—will do? (will you? wild you? the world echoes). What if instead of going viral, we went feral, and replaced

virtual virality (and endless viral virtuality) with newfound fealty to ferality. This is the prosody of poetry as poesis: the feral as the return of the repressed, finding fierce potential in undisciplined, generative juxtapositions.

How far can this extend? What potentials remain to be unfurled in considerations of the feral? The constraints of narrative and typography contain unanticipated possibilities within their alphabetical enumerations. The feral erupts new magmatic meanings from failed realities. When a key gets stuck, when wires cross, and one lqttqr bqcomqs anothqr, likq thq novql writtqn without thq lqtter q. "No, not likq that!" wq say—thq othqr way. But wq no longqr control a procqss gonq fqral. Our codons of mqaning bqcomq confusqd, the framqs of rqfqrqncq shift, qvq nas wqa dapt tot hqn qwn orm al. "Man can gqt usqd to anything, thq bqast," as Dostoqvsky once wrotq. Indqqd, wq can rqad dqspitq thq fqral noisq, thq floatqr blocking kqy parts of our tqxt. But wq can bqgin to adjust—to find alt ways of writing that adapt to that visual tinnitus, block it out, and bring us to unknown, unfamiliar, unusual artmaking within distinct constraints, whether we work with words, colors, or objects. Finding a way forward is what *going for all* is about.

We are familiar with the feral on the margins, prowling the cultivated field, gleaning its meals where it can. But when we are far from the field, and world-historical events confine us indoors, new genres and genera for expression can emerge. How, in other words, can we rethink feral ecologies in a time of limited travel, without reducing it to piles of dirty dishes in a sink, streaks in the microwave, and crumbs on the floor? It has happened before—in a cold and rainy summer at Villa Diodati, on the shores of Lac Léman in Geneva, where "the modern Prometheus" was stitched together. *Frankenstein* extends ferality from the biological to the literary, capturing how a forced indoor respite can veer off in unexpectedly, unconstrained productive ways,

and lead to the invention of a new text, a new genre. This is the feral as fruitfulness, as creativity, opening worlds of speculative possibility: telling tales of matter repurposed, of things once wild, domesticated, and rewilded. Frankenstein's monster—a being created by a man who would be as a god—shows us (*monstrare*) something perfectly, demonstratively, demonically evident: that the feral is not only a tragic exile from the familiar, a second form of nature irreparably altered by its experience with an unwelcoming familiar. It is a response to an absence of understanding, a search for a way to find one's own native land, and new ways of loving when the patriarchy has let one down.

The feral is so often construed as a rejection of invitation to relationality. But it need not be. "What happens when indigeneity collides with queerness inside the reserve, and how might a feral theory make sense of that collision?" asks Billy-Ray Belcourt, author of "The Poltergeist Manifesto" in *Feral Feminisms*. "I want forms of love in which lifes quickly fold into each other—sometimes lopsidedly—but nonetheless gestating a *something* that could help us endure, together. And, even in the event of separation, we might know how to love, better, next time. Instead of waiting for something to happen, what if we experimented with others, testing out more capacious intimacies that don't condense into a trained public sensorium we might call the social … perhaps we need more complex and messier forms of love, ones that can, in their otherworldliness, sustain native peoples' attachments to themselves. Love might be our last hope."[6]

How can one have love *for all* of one's own, a love fierce and *feral*, when one cannot even escape to the field? What do we do, in other words, when the modern Prometheus's

6 Billy-Ray Belcourt, A Poltergeist Manifesto, "Feral Feminisms," *Feral Theory,* issue 6, Fall 2016.

modem light flickers and goes out? We can invite the field in, and take notes. When confronted with the unknown in uncontrolled and unstable frontiers, wolves encircling the campfire and the hearth, we can open the door to domestic living, to domestication, with a scrap of food—a playful gesture, a dance, and graduated reductions in threat. (A bit of gristle, and a whistle, and "graduated reciprocation in tension reduction" applies to wolves just as to missiles.) We can play with possibility, and—living at the cutting edge of the possible, never fully domesticated but never totally wild—take a step back from the abyss with the ever-expanding members of our feral families of choice and circumstance. We are children raised by wolves—we have learned to depend not so fully on our institutions, and our institutions have learned to reinvent themselves in ways previously seen as impossible.

How can one be free to be, to think, and to create, when budgets are cut, spaces enclosed, and attendance has vanished into thin air—what remedy for such a fierce encircling of vacuity? Old ways are obstacles suddenly overcome, though not without cost: not everything survives a revolution in ways. But we are freed from the expectable, even as we scrounge for food and funding. The feral is an encounter with a difficult reality: not what things ought to be like, but as they are—difficult, confrontational, but hard to grasp, in the shadows, uncertain. But very real. The stakes of the feral have become so very much "for real."

But to envision a feral future also means to have been set free from old expectations. The feral is the realm of the unresolved. As Rainer Maria Rilke once wrote to a young friend in 1903: " [...] I want to beg you, as much as I can, to be patient toward all that is unresolved in your heart and try to love the questions themselves like locked rooms or like books that are written in a very foreign language. Do not now seek the answers, which cannot be given you because you would not be able to live

them. And the point is, TO LIVE EVERYTHING. Live the questions now. Perhaps you will then gradually, without noticing it, live along some distant day into the answer."

3. Of an animal: Wild, untamed. Of a plant, also (rarely), of ground: Uncultivated.

The naturalist Aldo Leopold once wrote there are those who can live without wild things and those who cannot. But what about those who cannot live without things that are neither wild nor tame—those who cannot live without the feral? Feral ecologies are those "ecologies that have been encouraged by human-built infrastructures, but which have developed and spread beyond human control," as Anna Tsing has proposed in the *Feral Atlas*—an Anthropocene out of control.[7] And culture refers to that which is cultivated. Going feral necessarily depends therefore on both cultivated *and* uncultivated ground.

The imposed environment is now, most everywhere in the world, the home, the block, the supermarket. In an environment so unendingly domestic, for months on end, we have never been more site-specific in our practice. There has never been a time in which experimentations in art have been more globally constrained, and never a time when Feral_ Notes have been more necessary. We develop, through these experiences of deep, muddled time, a new ecology of senses, generative of novelty and hybrid matters, where the heavens are the limit. As Darwin once wrote: "We know that changed conditions have the power of evoking long-lost characters, as in the case of animals becoming feral." (And not only animals.)

What process guides us forward in learning from our feral cubmates, conducting research and developing practice in uncultivated fields, and engaging in co-creation with the once-known, half-known, never-to-be-fully

7 https://feralatlas.org/

domesticated again? How do we network and hack from our temporary dislocations in remote time and international space? But if we leave the Hollywood dinosaurs and snarling wolves aside as our metaphors of choice, and even turn away from the charismatic megaflora, we can appreciate the importance of uncultivated ground—not just wild, but fallow. Land that was once productive and will be again, but not right now. A winter season for a plot of land we call our own, a rotation of dormition.

And as the snow melts, the dirt emerges. If we "stay with the trouble", as Donna Haraway advocates, we can consider the feral as more than simply the "unruly, dirty, out of place."[8] And in the late winter dirt, where everything turns to mush, something new may come to stir: in these end times, we will find new ways of living and creating in, with apologies to Tsing, the mush Zoom room at the end of the word.[9] Something new has intervened, disrupted the established theoretical framework: the essence of encountering what is for real, what is for all, what is feral.

To acknowledge the feral means that we are no longer in control of our circumstances. As H. G. Wells once noted, "feral and obscure and altogether monstrous forces must be at work, as yet altogether unassimilated by those neat administrative reorganisations."[10] And to be not in control is either to be out-of-control, or to be playful. Feral play is constitutive of evolution, of ethology, and of our emerging

8 Donna Haraway, *Staying with the Trouble,* Durham: Duke University Press, 2016, p24.

9 Anna Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*. Princeton, NJ: Princeton University Press, 2015.

10 H.G. Wells, "The New Machiavelli," London: Lane, Boadley Head, 1911, chapter 2, §4.

practice.[11] In other words, reality unfurls in sometimes the most unexpected ways. We are not the authors of fates, but can dispose a system set in motion toward new centers of chaotic and contingent possibility. As J. D. Bernal envisioned the feral futures of life in the early twentieth century:

> *The new life would be more plastic, more directly controllable and at the same time more variable and more permanent than that produced by the triumphant opportunism of nature [...] Such a change would be as important as that in which life first appeared on the earth's surface and might be as gradual and imperceptible [...] The need to determine the desirable form of the humanly-controlled universe [...] is nothing more nor less than art.*[12]

4. Of, pertaining to, or resembling a wild beast; brutal, savage.

The feral has always been more than human, and has always been an intervention in interspecies relations. One result of the Columbian Exchange between the Old World and the New that began in 1492 was the emergence of "enormous feral hordes of horses and cattle" across the Argentine pampas and the plains of northern Mexico, Alfred Crosbie has recounted: *Equus ferus*.[13] Within a century, these hordes

11 As the designer Sascha Pohflepp wrote shortly before his untimely passing, "By being intertwined into a collaborative relation with organisms subject to factors like randomness of Darwinian evolution or different timeframes, a human designer must shield part of her command over the creative process."

12 John Desmond Bernal, *The World, The Flesh, and the Devil: An Enquiry into the Three Enemies of the Rational Soul*, Keegan Paul, 129, p46.

13 Alfred Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492,* Westport: Greenwood Press, 1972 [2003], p84.

were themselves the target of packs of feral dogs. And the pattern repeats time and again: feral goats on the Galápagos Islands, feral rabbits in Australia. But these are moments of ferality in space: the reconstitution of lost species, from breeding to de-extinction, is a way to conceive of ferality in time: anything-but-immaculate, amalgamate conceptions.

The discovery of Przewalski's horse in 1889, and its extinction in 1969—not even a century later—raises questions of how one can back-breed a primitive feral horse from the wild horses of the Mongolian steppes into a prehistoric ancestor of all horses, as Nigel Rothfels has argued. (What do we gain in reifying notions of primitivity and breeding them into existence?) Such horses are both feral and anything but: they are *designed*.[14] Similar feralities abound with the putative back-breeding of prehistoric cattle: "In bringing back the aurochs, and other modes of de-extinction, are we making the world more feral?" asked *Science* magazine in 2015.[15]

The doyen of de-extinction, Harvard's George Church—who among other things has proposed de-extincting woolly mammoths for Siberia as a solution to climate change and de-extincting Neanderthals both "to increase" and to understand "true human diversity"—himself acknowledged gratitude for the "roughly four hundred journalists who, since 1996, have helped me rise slightly above my feral

14 Nigel Rothfels, "(Re)Introducing the Przewalski's Horse," in Ben A. Minteer, Jane Maienschein, and James P. Collins, eds., *The Ark and Beyond: The Evolution of Zoo and Aquarium Conservation,* University of Chicago Press, 2018, p77-89.

15 Erik Stokstad, "In bringing back the aurochs, and other modes of de-extinction, are we making the world more feral? *Science* 350.6265 (4 December 2015): p1147.

dream-speak to something closer to intelligible."[16] The de-extinction of the Neanderthal, the original *Homo ferus,* is not only *Jurassic Park* written for humans, but a feral dream of timelessness: a realized scientific vision of a still life.

Paintings and natural history museums alike have long proposed to capture a form's life and preserve it forever in a state of timelessness—existence outside of time. In a time when we assert whose lives matter, the killing of feral animals—as Ursula Heise has noted—"continues a long tradition of disregard of lives that are considered expendable": stilled lives. What interspecies experiments can we engage in "to instill freedom" in service of feral futures, Juno Parrenas asks in her study of the complicated colonial and decolonizing legacies of orangutan conservation.[17] *Orang-utan,* in Malay, means the feral person of the forest: *Homo ferus*.

Where is the feral in lives that have been stilled? It seems that even as space is constrained in our domestic detention, time—the forgotten dimension—has elongated in weird ways. Having so much of it, days pass unnoticed, deadlines slip, and we feel unmoored, at sea, grasping at spatial metaphors for an experience of being thrown out of time. The paleontologist G. G. Simpson, whose field notes are published in a variety of entrancing diaristic works recounting everything from the feral sheep of Patagonia to the dinosaur bones of New Mexico, once wrote a terrible science fiction novel about time travel, in which a paleontologist from the

16 George Church, *Regenesis: How Synthetic Biology Will Reinvent Nature and Ourselves,* New York: Basic Books, (2012), p11, p255. See Campos, "Neanderthals in Space: George Church's Modest Steps Toward Possible Futures," in Oren Harman and Michael Dietrich, eds. *Dreamers, Visionaries and Revolutionaries in the Life Sciences,* p143-160. University of Chicago Press, 2018.

17 Juno Salazar Parreñas, *Decolonizing Extinction: The Work of Care in Orangutan Rehabilitation*. Duke University Press, 2018

future finds himself not only studying the fossilized thunder-lizards and their associates of the past, but unexpectedly living amongst them. *The Dechronization of Sam Magruder* is a story of being trapped in deep time, isolated from all other humans, scratching one's name on a rock for a future uncovering. Can one be feral in time, when one is domestically detained?

Simpson proposed that the beasts of the past were examples of life finding a way through the constraints and contingencies of possibilities to create forms familiar but fearfully and wonderfully made. Consider the *astrapothere,* Simpson proposed: "It is baffling to try to describe these in terms of any animals living in the world today, for they have left no descendants nor even any distant relatives. They are not like the extinct animals of any other part of the world. To describe them you have to start from the ground up, or to compare them with half a dozen different animals at once, and then add a few original touches, like the fantastic combination beasts in children's stories."[18] With his expert eye for the unusual animals of the past, uncovering what he characterized as a "Lost World," familiar only for the presence of opossums and armadillos, Simpson told how paleontology required difficult, exacting, and exhausting hard work: "the past history of life on the earth has to be pieced together slowly and laboriously from many finds and from decades of work in different regions. The competent student needs constantly to visualize, and to allow for, the difficulties and the inevitable gaps."[19]

Is it any wonder that the creator of the extraterrestrial quadrupeds on display in the 1970s in the Smithsonian National Air and Space Museum's "Life in the Universe" gallery, was an artist whose scientific studies of the

18 G. G. Simpson, *Attending Marvels: A Patagonian Journey*, 1934, p65.

19 *Ibid.,* p78.

biomechanics of horns and antlers at Berkeley led her from artistic work in paleontological reconstructions—borne of tight museum budgets in the midst of another crisis—and teaching human anatomy into inventing studies of the muscular systems of potential dragons, and a career as one of the few women science-fiction illustrators of the time? As dogs howled outside Bonnie Dalzell's door in the Before Times, we talked about the gait of her disabled dog, the several different distinct groups of animals that successfully invaded the terrestrial environment in geological history, the deep physiology of extraterrestrial vertebratoids like hexapedia, and high-density planet flying filter-feeders. (From paleontology to planetology, with apologies to *Dune*.) We talked about her artistic techniques, her home as her studio, her hobbies as her career, her integration of science and art in ways few before her had ever envisioned, and the unexpected contingencies of life—those feral moments—which led to an integration of paleontology, astrobiology, and fantasy art. "Life, um, found a way" in her artistic practice, weaving through constraints and contingencies of possibilities, as she created forms familiar, fearfully and wonderfully made, "an exotic bestiary for vicarious space voyagers."[20]

Perhaps we need no theory of the feral, after all. We need only serendipitous inspiration from an assemblage of possibilities: we need Feral_Notes. The feral is, after all, intermittent, staccato, provocative, opportunistic. Let us glean what we can from our uncultivated fields, and approach nearer the fire, in these difficult times of stilled lives. Winter will pass, and lockdowns will end. And it will be time again to go forward, and go feral in new ways.

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20 Bonnie Dalzell, "An Exotic Bestiary for Vicarious Space Voyagers," *Smithsonian* 5 (October 1974): p84-91.
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Erich Berger,
by Hannah Star Rogers

Field_Notes explores spaces of possibilities in Lapland

In the interview Erich Berger, the Director of the Helsinki based Bioart Society, discusses the Field_Notes program, which takes place on the Finland-Norway-Sweden border, its origins, what makes a field laboratory important for artists, and the Bioart Society's future.

Interviewed by Hannah Star Rogers, a researcher at the University of Edinburgh specialized in critiques of science in contemporary art, who hosted the Second Order group in the 2018 edition "Ecology of the Senses". The original interview was published on Makery.info on April 23, 2019. The Interview was re-edited and updated by Cherise Fong.

INTERVIEW 1

The Bioart Society was founded at the Biological Station in Kilpisjärvi, in the far north of Finland—home to ongoing scientific research, but also to some remarkable art projects. How did the program come together in its earliest days?

The Bioart Society was founded at the Kilpisjärvi Biological Station in 2008, so from the start we had a very strong relationship. The station supported the idea of being a site for transdisciplinary work from the beginning. Back then, nobody was specifically experienced in the field, but there was enthusiastic momentum. The group was quite diverse, from digital and media artists to environmental artists, painters, photographers, and so on. In Finland it is very common to create an association among a group of people who have common interests. The Biological Station's director, Antero Järvinen, was also part of the Bioart Society from the very beginning, and he generously and continuously encouraged our work without interfering in it.

We started to work at the Kilpisjärvi Biological Station in 2009 as one of 20 nodes on the planet to investigate topics regarding the human condition. This program was initiated by Ars Electronica, and our topic was climate change. We worked for two months on site to produce a conference and a series of artworks. This showed us the potential of the Kilpisjärvi Biological

Station and the uniqueness of the landscape. Next, we started a residency program called Ars Bioartica; then we produced site-specific workshops, which were scaled up to become Field_Notes.

So, what is Field_Notes?

Some refer to it as a workshop or residency, but for me it is a field laboratory. A group of about 40 practitioners with diverse professional backgrounds in art, science, and other disciplines meet for one week at the Kilpisjärvi Biological Station to work in different groups under an umbrella topic. The work in these groups can take different forms but is essentially located in the field—the landscape—and uses these surroundings as a research and test site, as a catalyst to dive into the different questions posed. The groups are encouraged not to produce anything specific like an artwork. To allow this freedom is one of the strong points of Field_Notes and can also be seen facilitating spaces of possibility, creating a space enfolded by a question, but not confined by any one method on how to answer it.

In every edition of Field_Notes, we also run the Second Order group, whose working model is different from the other research groups. It is composed of philosophers, theorists, independent researchers and other suitable practitioners. Their work is twofold: on the one hand, they do research on the rest of the groups, and on the other hand, they act as discursive agents introducing critical perspectives to go over traditional research boundaries, methods and practices.

One thing that makes the Bioart Society unique is that people who want to work with art and science come to Kilpisjärvi Biological Station not to use the lab, but to be in the field. Is it for people who create a type of bioartwork that doesn't really come from the lab, or is that only one aspect?

Lab work can be done anywhere. That is the main point of it: to create a work environment that can be reproduced by others as long as the conditions are the same. So, for this we do not need to go to Kilpisjärvi. Fieldwork, on the other hand, is site-specific; it can't be reproduced somewhere else. That we do fieldwork in Kilpisjärvi stems from the fact that the Biological Station is supporting us, and that its subarctic environment and ecology is unique in Europe. From the very beginning, we have been working within a very broad spectrum. Traditionally bioart was a laboratory practice, which we do as well, but we have expanded on this with the idea of updating traditional environmental art to explore what environmental art is under the contemporary (bio)technological condition. There is more about this in our first book "Field_Notes: From Landscape to Laboratory".

But in short, some central questions which motivate us for our field work are: What kind of data, information and experience remain outside of the scope of scientific research, and how can this be turned into knowledge through artistic methods? How can the environment in Kilpisjärvi act as a catalyst for the questions? How can artistic practices be applied to specific situations, and how to be alert of practices and approaches that emerge in such situations?

Could you elaborate on the Field_Notes 2018 theme "Ecology of the Senses"?

It came out of the two-year Hybrid Matters program, which was composed of a field lab, symposium, exhibition, and other activities under the same name, where we were investigating hybrid ecology, the convergence of our environment with technology, and essentially, the intentional and unintentional transformation of our planet through human activity. In a hybrid ecology, you have all these different actors: the biological

ones, like humans, other animals, and plants, but also technological ones, like algorithms, software, tech infrastructure, and so forth. Through Ecology of Senses, we wanted to explore the role of sensing within this convergence: the ways we make sense of the world, how worlds are made through our senses, and the changing sense of self that comes along with that.

Central to the theme is the notion that humans expanded our original sensorium considerably with technology. The spectrum is wide: in it we find our own human body senses, but also animal- and biosensors and electronic sensors. We can already catch a glimpse of a fully quantified computational planet with its first implementations of orbit-tracked, networked bird and fish swarms, or fully wired forests. A general excitement about technological sensing possibilities with their reliable production of objectivity has led us to give less value to human and animal senses or phenomena and environmental indicators around us, considered to be subjective. Ecology of Senses wanted to explore this gap and to engage with the inner and outer landscapes, create field experiments, find and establish test sites, and set up observatories and excavations. We did this by establishing five different groups of about six experts, each hosted by an invited practitioner.

Language seems to be particularly important in this context. For example, why do you specifically avoid using the word "nature"?

We wanted to operate within a language where it is clear that there is no place left on this planet that is not part of this convergence that I mentioned earlier. The concept of nature allows the illusion that there is a separation between our activities and our environment and eludes the fact that we are currently destroying the foundations of our being on this planet.

One example of this was in Hybrid Matters, where we avoided falling back on binaries such as "natural/artificial". Nature is a very romantic concept, and in our everyday thinking, it does not necessarily include humans. It is a place to go when you want to relax, be alone, or feel the sublime.

So, what about the 2019 theme "The Heavens"?

About a year and a half ago, we invited the British scientist Melissa Grant to participate in one of our events. Afterward we sat together and talked about our work. Melissa talked about her exciting project with HAB (High Altitude Bioprospecting), a group of scientists and artists who investigate microorganisms living under extreme cold conditions in the atmosphere. There we realized that we are or have been working with a number of artists whose focus of interest is located above the Earth. During the previous field laboratories, we stayed on the ground around Kilpisjärvi, with its natural and human history. If we did go up into the sky with drones or helicopters, it was then only to look down.

With The Heavens, we turned our attention and experiments to the sky and looked at how the unique subarctic setting of Kilpisjärvi could help us learn more about what is above the ground: life, peculiar phenomena, politics, as well as strong ambitions and desires—some are totally exciting and others extremely questionable. In the end we were able to get an exciting team to host the different groups, and I urge you to check the website to learn more about them: https://bioartsociety.fi/projects/field-notes-the-heavens

What were some of the most memorable moments of that last edition of Field_Notes?

It is not so easy to answer that, because the whole week is one out-of-the-ordinary experience. From the stunning landscape to the amazing richness

of knowledge, from the experience and kindness of the participants to the fine moments in the sauna after a long day of work, or even an aurora borealis event during the night. But when you are out in the field, something as banal as the weather is of course, always a factor of high importance. Kilpisjärvi is not only on the political border between Norway and Finland, there is also some sort of shed between the weather coming from inland Finland/Russia and the polar sea in the west. So, in September, the weather can be anything. And still, to our surprise, we woke up to snow midweek under a brilliant morning sun—which, though it is high up north, was quite early in the year.

On another day, we were in the field with a group in a little gorge on the east side of mount Saana, when an intense raging sound ripped through our bodies. A fighter jet of the Finnish Air Force literally flew over our heads in a backbreaking manoeuvre. After shaking off the scare, I tried to reach the High Altitude Bioprospecting Group, as their plan was to fly their helium-filled kite, a several-cubic meter balloon, in the valley between mounts Saana and Jehkas. It was the same route the plane must have taken just half a second before it reached us. However, we/they were in a dead zone without reception, so I went back to the station. On the way back, I got news that nothing had happened, but that the plane indeed went over their heads as well at a moment when their kite was fully extended and 120m in the air. They got so scared that they called it a day. Apparently, a pilot had decided to have fun flying up the river on the Finnish/Swedish border, using mount Saana as a landmark for a 360-degree turn. We have been wondering if he ever saw the large white balloon in his way.

But I think a highlight for everyone was a little performance and tasting organized by the Space Earth Space group towards the very end of Field_Notes. On Saturday after

dinner, they promised to take care of dessert. While reading selected texts and performing unknown rituals, they filed down a piece of meteorite. The final story was about the eating of rocks, then the eating of meteorites, and by then, everybody realized what was going to happen. The filings were then mixed into traditional Finnish Marjarahka, a berry quark, and served to us. Ours is believed to have been the fourth historically recorded instance of meteorite eating, and I was not the only one to take a second serving. However, as I said in the beginning, the most memorable things for me are the landscape and the people.

Photo: Mari Kaakkola

Rüdiger Wassibauer,
interviewed by Cherise Fong

Schmiede is a time when it's not about winning but about being

Rüdiger Wassibauer is the co-founder and organizer of Schmiede, a 10-day camp that fully inhabits the historical Alte Saline, an abandoned 19th century salt factory that contains a patchwork of extraordinary spaces. Every September for almost two decades, Schmiede has found its footing on the island of Pernerinsel, nestled in the Salzach river that flows through the town of Hallein, 15km south of Salzburg, Austria, on the natural border between the alps and the flatlands.

How would you describe Schmiede?

Schmiede is an island and an annual festival. Producers gather and prototype and share what they feel passionate about. Together we create an atmosphere of cooperation and peer-to-peer feedback. Since 2003, about 300 Smiths meet annually for 10 days on Pernerinsel in Hallein near Salzburg to figure out how we believe life should be. A life of inspiration, work, party and cooperation, where there are no bad ideas, but paths to discussion and community. A time when it is not about winning but about being.

Who do we want to address? Everyone who sees himself/herself at Schmiede. People rarely end up in Hallein by accident; instead they come by personal recommendation. The meta-goal is to create a space that creates itself. As you see, we are quite naive, but time has proven that substantial life journeys, as well as projects, were enabled and enhanced by Schmiede. Most Smiths have a background in the arts, creative industries or in technology, but that is not a prerequisite. Within the diversity of Schmiede we have changing focus models, specialized Schmiedes within Schmiede called Labs at Schmiede, where

INTERVIEW 2

two to three Smiths take an interest to another level and initiate a new node or focus group. This method has repeatedly proven to provide inspiration, autonomous possibility, as well as stability.

What exactly is a "Smith"?

Smith is our family name. Once you have participated in Schmiede, you become a Smith (Schmiede Alumnus). The term Smith resulted from a misunderstanding between Walter Steinacher and me in 2005. Following a long struggle to find an appropriate expression, including some ugly-sounding solutions, even before we started talking about gendered norms in German. "Smith" emerged as a rather eloquent and funny solution, as it's a family name, it's gender-neutral, and it's a direct translation describing a person working in a Schmiede/forge, as well as a very common English surname.

What kind of general framework do you provide to support the Schmiede philosophy?

Schmiede is a playground of ideas. The SchmiedeTeam builds the frame, but the interesting elements are created by ideas of Smiths. Our core is peer-to-peer learning and prototyping. The most important thing is therefore to create a large, diverse and committed group of enthusiasts.

Schmiede takes place at the Saline—an impressive, very large salt factory originally built in the late 19th century with a lot of character, many large and small rooms. We start with inspiration, exhibitions and concerts, followed by workshops, team-forming and a work phase. In the end, Smiths have the option to present their projects during the Schmiede workshow, which averages 70 presentations and 1,000 visitors. Making this process inspiring and pleasant is the SchmiedeTeam's main objective.

Only a few guidelines and principles stuck with us over the years. Other than that, the SchmiedeTeam tries to step back. What happens in Hallein is not about Schmiede but about what Smiths want to do.

Schmiede is based on three principles: "Network, Create, Present." The most important Schmiede rules of conduct are: All Smiths are treated equally; The autonomy of Smith is paramount; Respect the SchmiedeTeam, the building, other Smiths, their work and their tools; Responsibility leads to enhanced rights; Leave no trace behind. Nothing we bring to or build at Schmiede stays.

Have you noticed changes in the ideas or practices of Smiths over the years?

We create a positive and safe atmosphere for a large group of enthusiasts to meet and cooperate. I don't believe that the raison d'être of Schmiede has changed, but it's even more important today than it was before. In an increasingly digital world, we need face-to-face human contact and community. This is so obvious that we seem to forget about it. Over the years, around 2,000 Smiths have participated, and only two Smiths have never missed a Schmiede, but there are many who have participated about 10 times. This commitment creates an atmosphere of old new, dynamic stability, familiar freshness, etc.

In the beginning, we worried a lot that Schmiede would become nothing but an old boys'/girls' club, only to be surprised by our first generational shift in 2010. Schmiede primarily appeals to people studying and/or those who are in the early years of their career. Once family and/or career gets involved, people start to lack time. However, it is great to see that Smiths, some with kids already, return to Schmiede after they have overcome this life phase. So, today Schmiede hosts several layers of Smith Communities, with balanced age and gender diversity.

How did it go with the "Horses" edition of 2020?

What made Horses memorable was probably the horses. Horses as a theme demanded quite a jump for our community. And even though it was probably one of our deepest themes ever, it could be enjoyed on a superficial level. Horses provided a warm and helpful distraction to the cold realities of 2020. At its heart, horses revolved around storytelling, leadership and innovation. But that's what made it special: understanding our intentions was not relevant. The emotions created by the idea of this animal were heartwarming. In short, horses carried us through the year, and for this we are thankful.

It seems that Feral Artist-In-Residences also played a big role that year?

FeralAIR is probably one of the nicest artist-in-residence programs we have managed to create. Until 2019 we had rather stiff AIR formats. We took it artist by artist, time periods were defined, and then the set-up was implemented. Parallel AIRs were all but impossible. Thanks to the opportunity created by the Feral Lab Network, we decided to try a fresh AIR format in 2019, where an increased number of participating AIRs would enhance the process for all involved. Artists could come to Hallein for three weeks in September. They had the option to either start or end with Schmiede. So, they could choose phases and order them according to their taste. One could arrive early and slowly build up to Schmiede, which creates a rather intense DIWO environment, or you could jump right in and have a calm finishing period.

The process was received very positively from our participating artists. But even better, when 2020 came around the corner with all its problems, we had a functional COVID format. It was very simple to provide the necessary spacing, both physically and in terms of time. So instead of panicking

and reinventing ourselves in a crisis, we could just double down. In 2020 we hosted 15 diverging and successful AIR programs with three partners, thanks to the Feral AIR 2019 experience. Without formally altering our process, we were able to redirect budgets to where it was most needed: to individual artists and their projects, strengthening our community in the process.

In what ways did they contribute to Schmiede?

Schmiede is a very open and egalitarian format. To maintain an enriching process for around 300 people, it is not for us to decide what our participants want. We are not interested in curating but in emerging projects. All Smiths, participants, are equal and are treated as such. Schmiede provides infrastructure, space and time, but wishes the participants to take responsibility for their autonomous process.

This has created a healthy playing field for interaction for the past 18 years, but it also has its pitfalls. AIR formats are Schmiede's workaround. With every AIR program, we can provide altering contexts for our participants, while Schmiede's position remains stable. For example, we can provide working budgets and diverging opportunities for our AIRs via our partners. Schmiede does not provide AIR programs, as Schmiede must not have favourites. We also outsource the decision/selection process to an independent jury (composition: AIR partner, expert, former AIR). Our current vision is to create a lively festival in the midst of altering AIR programs and a pop-up critical mass that does not solidify around a few big heads—it is shaken up with every passing year, gently pushing the ambitious into fresh channels.

What was your most memorable moment of 2020?

The overall success of 2020 was probably the most memorable moment of our past years. In this

storm, we could provide a stable island of normality for our community. We undermined our panic mode and always knew, even if all else fails, we can do our AIR formats. With this optimism, we were able to expand when all around us were scaling back. The consequence is that we now have even more formats for our future AIRs to experience and work with.

The theme of the 2021 edition is "WAR", which sounds sinister in English, but in German also translates as "was". The title begs the question: What is the future of Schmiede, even beyond 2021—a return to the past?

Schmiede21 is not about the act or the context of war and its consequences. I would much rather say it is a take on perception and resulting meaning and actions. It stems from a small idea/surprise (WAR as an acronym for We Are Right) that grew into a much larger concept. I would call Schmiede21 a red herring Rorschach test with participative elements and opportunities. Yes, these three letters present an obvious solution, but there is much more we can do with these three letters. Fake news also presents us with plausible narratives, etc.

We started with a meaning, but by now see WAR as a game, a collective search for meaning. So I guess we are waging WAR on reality. Reality is our reaction, and what we apply into it. the consequence is emerging as our reality. It's very confusing, like a chicken-and-egg dilemma devoid of chickens. And then there is the interesting coincidence that WAR exists in English as well as in German, with rather divergent meanings. Welcome to our rabbit hole.

Right now we are at the beginning of WAR and its meaning, and I think it will be quite a ride. Till application ends on May

31st[1], we will be sharing what our Reflector Collector[2] brings to the table. The Reflector Collector is a form to leave your reflections on the three letters and what you think they stand for. Our goal is to paint a multitude of meanings. Currently, our collection stands at 250 meanings. Assuming that WAR is an English acronym, we are talking about at least 1 million meanings. But on a personal level, I, Rüdiger, also wanted to raise a pointed question without asking. With all that current martial talk, I wanted to give an impulse: Just think about it. And it would not be Schmiede if we tried to play a straight ball. See you in Hallein for Schmiede21: WAR (Sep 22.—Oct 2. 2021).

Photo: Christoph Kobald

1 http://schmiedehallein.com/apply/

2 http://schmiedehallein.com/2021/schmiede21-war/

ESSAY 2

New Proximity: Non-Formal Learning at the Heart of Self-Reliant Communities

Stefanie Wuschitz

Stefanie Wuschitz works at the intersection of research, art and technology, with a focus on feminist hackerspaces, open source technology and peer production. She co-founded the feminist hackerspace Mz* Baltazar's Laboratory. Her 2014 PhD thesis was titled "Feminist Hackerspaces. A Research on Feminist Space Collectives in Open Culture."

Our feminist hacklab in Vienna is mostly empty these days, due to COVID restrictions. Yet, members gravitate one by one toward the lab, working in there alone for a couple of hours. Something is missing, though. Only a disappearing medium becomes visible, said Marshall McLuhan, so now that nothing is taking place in the lab, it becomes visible what hacklabs actually mean to our well-being and general state of mind.[1] As labs for learning about tech and collaborating on open source projects, they in essence become sites for self-crafting.[2] The people who meet here, take care of the tools and bond with each other are what makes it a hacklab. And yes, the aim to cultivate a critical perspective plays an important role in bringing people together.[3] And there is a shared passion for playful inquiry of those codes, wires, chips and controllers. However, it is not what these commons are about.[4] It is not

1 Marshall McLuhan, "The Medium is the Message" In Marshall McLuhan, *Understanding Media: The Extensions,* London: Penguin Books Ltd, 1964

2 Judith Butler, *Giving an Account of Oneself*. Fordham: Fordham University Press, 2005

3 Peter Maxigas, "Hacklabs and Hackerspaces—Tracing Two Genealogies" In *Journal of Peer Production*, Volume 2: 1-10, 2012

4 See: Elinor Ostrom, *Governing the Commons. The Evolution of Institutions for Collective Action. (Political Economy of Institutions and Decisions)*. Cambridge: Cambridge University Press, 1990
Also see: Silke Helfrich und Heinrich-Böll-Stiftung (Hg.), *Commons. Für eine neue Politik jenseits von Markt und Staat*. Bielefeld: Transcript Verlag, 2012

an object, technology or commodity at the center, not even sketching or prototyping. It is a counter-community for non-formal learning, among members who share various struggles and experiences of oppression. By coming together and joining forces, members co-create new subjectivities. For example, when we hack hardware as women* and non-binary folks for circuit-bending, a task we are not expected to accomplish, but succeed in mastering within three hours, this changes the way we see ourselves and our possibilities. And slightly influences how we confront future sexist misjudgment.

The structures we are up against are socio-political, patriarchal, colonial, environmental, and cannot be undone through merely adding some cutting-edge plug-in, debugging some code. Harmful behavior patterns need to be actively unlearned first, through non-formal self-education. Through running off. Foucault explained how to escape these personal relations that express, perform and constitute power in everyday life (which feels oppressive). He imagined a new location he called *hétérotopie*: a different space.[5] Setting up a hacklab is really about people with differences coming together to create a different space. One in which non-formal learning can unfold. Members want it to be a space for overcoming conflicts, dealing with their differences, building trust, reflecting upon what needs to be said and understood, for ultimately unlearning oppressive patterns. This dream is a lot of work, but it can result in an actual *hétérotopie*: a temporarily established autonomous space (Hakim Bey, 1991). It will always be temporary and an ongoing process, rather than a state reached once and for all. Yet hacklabs accomplish relative independence through interdependence, collective practice and mutual self-care. All of this is facilitated through

5 Michel Foucault, *Les hétérotopies. Les corps utopiques.* Zwei Radiovorträge. Berlin: Suhrkamp, 2013

a shared lab and rituals to keep your mind absorbed. What members get out of this labor of love (which is in itself a form of non-formal learning) is an increased affection for a subject, sometimes even a strong shared passion to deal with a particular problem, as well as a sense of belonging towards it. Through this significant interest, members eventually become experts. And of course, a neoliberal market might be enchanted about this expertise and try to exploit it, as water, air, soil and even sex are being exploited, but the Open Source License allows a lot of this expertise to avoid price tags.

Norbert Schweizer has told me that Hacklabs were Montessori schools for adults. A fundamental principle of Maria Montessori's pedagogy was to provide an environment for free children, one that permits a development of individual, spontaneous manifestations of the child's nature (Montessori, 1949). In fact, Montessori pedagogy does not only leave space for spontaneous manifestations of an individual's nature, it puts these manifestations into the center of its pedagogy and evolves around it. Pursuing a freely set goal, staying in the flow and paying attention to micro dynamics arising from your own observation, helps you to be increasingly involved with the world, and to find a deeper understanding of the complexities around you. The child immersed in playing with wooden blocks, almost as if addicted to learning, will not stop until she has managed to build that bridge she had envisioned. Montessori hoped that this way, the manifestations of an individual's nature can shape the practice, and the practice can shape the individual's nature.

A survivor of the prosecution of the Indonesian women's movement Gerwani (a movement brutally banned in 1965) told me in an interview that teachers trained through Gerwani were going out to the woods with their pupils, to work with clay, wood and soil, and to learn about biology. They went to the street food vendors to ask them about their lives and livelihoods, to learn about

class differences; they went to their neighborhood and learned about culture and craft. The kids were encouraged to explore, invade and investigate their world.[6]

Both Montessori and Gerwani pedagogy start from what is here and now to facilitate learning. This connection to the very moment and current standpoint tightly connects us to the present, and therefore inherently politicizes us. It is what Donna Haraway calls "staying with the trouble" (Haraway, 2016). In her book of the same title, Haraway claims:[7]

> *"It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories."*

This new relationship with proximity is a form of world-making, and takes a lot of guts.

Feminist scholars have for decades relied on knowledge acquired from personal encounter, personal experience and personal trouble. This method is called Situated Knowledge Production and is closely related to non-formal learning. Donna Haraway established the term "situated knowledge" in the 1980s to describe the individual subjective context as a source for insight and evidence. Feminist research, feminist learning, informal learning starts where we are right now, with the people around you, within the environment you are in, and is in fact centered around your immediate cognitive reach.

6 Ita Fatia Nadia, Recorded interview online with Nilu Ignatia, Dhalia and Stefanie Wuschitz, December 11, 2020.

7 Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press, 2016

Today the Oxford dictionary defines Situated Knowledge as: "*The idea that all forms of knowledge reflect the particular conditions in which they are produced, and at some level reflect the social identities and social locations of knowledge producers.*" Ultimately, the whole economic supply chain system, the whole ecosystem, the entire human body system can be addressed by starting from the here and now, from my own subjectivity, and then by gradually increasing my empathy.

Since patriarchal structures had for centuries denied women* the right to vote, to access education, to decide on reproduction and on their sexual pleasure, it was out of the question to claim objectivity. It was unthinkable that subjective feminist perspectives would inform scientific research and knowledge production. Science was dominated by white male supremacy, not tolerating resistance to the existing hegemony. The fact that *it matters what matters we use to think other matters with*[8] applies also to oppression that is based on race, not only gender, and applies to intersectional discrimination. Audrey Lorde noticed as early as 1978 that *"The master's tools will never dismantle the master's house."*[9] In this sense, we need to see the Hacklab as a plain canvas awaiting matter to be used to think other matters with: Maybe from the perspective of an insect? A mushroom? An iceberg?

"We, the feminists in the debates about science and technology, are the Reagan era's "special-interest groups" in the rarified realm of epistemology, where traditionally

8 Ibid.

9 Audre Lorde, "The Master's Tools Will Never Dismantle the Master's House." In *Sister Outsider: Essays and Speeches*, 110–13. Crossing Press, Berkeley, 2007

what can count as knowledge is policed by philosophers codifying cognitive canon law."[10]

It was not only middle-class women* in the U.S. of the 1990s who thought this way. We can find it throughout human history: this strong notion of creating commons, to gain resources in order to enable non-formal knowledge production. Just look at the matrilineal Minangkabau culture in West Sumatra a thousand years ago,[11] the Beginen and Begarden movement in Europe in medieval times, Mahatma Gandhi's self-sufficient residential communities 70 years ago, the Gerwani movement on Java 60 years ago, Paulo Freire's *Pedagogy of the Oppressed* in Brazil 40 years ago,[12] communities in West Timor, such as the one around activist Aleta Baun, up until the present.[13] Their non-formal learning methods have all brought about powerful experts who had the skills to transform their society.

Of course, this is not a coincidence. Montessori knew, admired and quoted Gandhi's idea that education must become coextensive with life, and that the central point in

10 Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective" In: *Feminist Studies,* Vol. 14, No. 3 (Autumn, 1988), pp. 575-599 https://doi.org/10.2307/3178066

11 Heide Göttner-Abendroth, *Das Matriarchat II, 1. Stammesgesellschaften in Ostasien, Ozeanien, Amerika*. Stuttgart-Berlin: Kohlhammer, 1991

12 Paulo Freire, *Pedagogy of the Oppressed*. Translated by Myra Bergman Ramos. New York: Continuum Publishing Company, 1970 [2005]

13 Goldman Environmental Foundation, *Aleta Baun 2013 Goldman Prize Recipient for Islands and Island Nations*, 2013 Available at www.goldmanprize.org/recipient/aleta-baun/

education must be the defense of life.[14] She shared this idea of an extension of education throughout life, one that considers life itself, becomes a help in life. And of course, the activists of the Gerwani movement in Indonesia were avid readers of progressive, feminist and anti-imperialistic writers, went to international conferences, and were therefore aware of Montessori and Gandhi. It was all open source. Actually, even now, we can find similar-minded people all around us. During those breathless summer days of 2020, I was allowed to visit Schmiede for my Feral Labs Residency in the alpine town of Hallein. I experienced non-formal learning on a small, delicate and nurturing scale. I could freely watch, meet, interact with a hand-picked group of fellow participants, and I felt that artists here enthusiastically shared their projects in an open-minded, transformative atmosphere. Although plenty of lectures and artists' talks were held, what counted most here was implicit knowledge exchange. But what is it with implicit knowledge, situated knowledge? Can it be replicated?

Heide Inhetveen[15] describes in a paper how children raised on a farm absorb skills and knowledge about farmers' practices playfully, unintentionally, with their whole being—through mind and body. In this paper, a farmer tells the story of how, when she was only 12 years old, she observed that a cow was going to give birth. As there was nobody else at home, she herself helped the cow to deliver the calf; she intuitively knew how to do it. The author emphasizes that to know what to do and when is an embodied knowledge, it is all about sensing and feeling and being aware of what

14 See p. 9, Maria Montessori, *The Absorbent Mind.* Amsterdam: Clio Press Ltd. (1949/1988)

15 Heide Inhetveen, "Mit Leib und Seele Bäuerin sein? Körpererfahrung in der Landwirtschaft." In: *Geschlecht weiblich*: Körpererfahrungen - Körperkonzepte. Berlin: Ed. Ebersbach, (2001)

needs to be done. A mixture of observation, internalization, routine and skill. At Schmiede you will see more interactive art installations than calves being brought into the world. Yet, the implicit, situated, embodied knowledge on how this is performed and done in a collaborative effort stems from community rituals that instigate non-formal learning.[16]

From the outside, environments that are organized as commons for non-formal knowledge exchange, such as hacklabs, might seem anarchistic, random, chaotic, even inefficient. Yet, they are sophisticated, solid, slowly grown, resilient entities. If we look at hacker camps, hacklabs, hackerspaces, artist studios, offspaces or squats around the world, they are usually not the most appreciated learning institutions of their region, and ridiculously underfunded. Still, many of us have volunteered and invested a lot of energy in art, hacking, community building, research, activism ... Spending time with and in collectives, groups, art collectives to co-create with peers can appear from the outside to be a time-consuming and frustrating task. And beyond COVID lockdown, we might feel that it is more of a hobby than a job. Yet, we should take the non-formal learning environments we have developed so far as serious as Montessori, Gandhi and Foucault, because their heterotopic value cannot be overestimated. Hacking culture takes what is here and now and plays with it, examines it, undoes, recombines, facilitates and upgrades it. This work of mutual self-care helps a community to maintain necessary, crucial resources. The resources to allow each community member to deeply self-immerse into a meaningful and transformative occupation, just as Paulo Freire had envisioned

16 Henri Lefebvre, *The Production of Space*, Translation: Donald Nicholson-Smith, Maiden: Blackwell Publishing. (1974)

it and later turned into the *Theater of the Oppressed*.[17]

To become literate is to be able to situate, contextualize yourself, build a clan, start reacting to the default mode, the imbalance of power, unequal distribution of knowledge. While audiences and counter-audiences are challenged and contested, one thing appears to be increasingly clear: what we, artists in hack culture, might have in common, is that we deliver by far the most unheard-of stimulations to engage with the world. With my face mask on, I can see more clearly now, that every single meeting among people facilitated through hack culture is about weaving yourself into a carpet of relations, solid enough to step on, and entering autonomous zones.[18] Within a solid group that I can trust and feel safe in—safe enough to risk making mistakes, explore my vulnerabilities and skills I'm not yet good at—implicit, situated, embodied and non-formal knowledge can take on a healing quality.

Once the pandemic is over, we will celebrate what we have built together.

17 Augusto Boal, *Theatre of the Oppressed*. New York: Theatre Communications Group, 1993

18 Hakim Bey, *T.A.Z. The Temporary Autonomous Zone: Ontological Anarchy, Poetic Terrorism*, Brooklyn: Autonomedia, 1991

Deborah Hustić,
interviewed by Dare Pejić

Keep it simple and just continue climbing

Deborah Hustić is the creative director, project manager, curator and co-founder of Radiona makerspace in Zagreb—a hybrid lab with a strong emphasis on diverse community building. Every September, she organizes Electric Wonderland, a 7-day summer camp set in the pastoral site of Fužine, near the Adriatic's main port town of Rijeka in northern Croatia.

The original interview was published on *Makery.info on June 25, 2019*. The Interview was re-edited and updated by Cherise Fong.

INTERVIEW 3

What is the philosophy behind Electric Wonderland?

Our philosophy is connecting the unconnectable, creation and co-creation, participation, inclusion and constant digging through the labyrinths of the unknown. We like curiosities, just as we like to reinvent and reverse engineer already-known patterns. Keep it simple and just continue climbing! As Henry David Thoreau wrote: "Nature will bear the closest inspection. She invites us to lay our eye level with her smallest leaf, and take an insect view of its plain."

So Electric Wonderland is an international hacker/maker camp set in the small town of Fužine near the coastal city of Rijeka. We host it at an international scout centre called Rakov Jarak (Crab Stream), which offers camping in nature and all the necessary facilities to maintain a tech-based gathering for seven days. The theme of the camp is hybrid forms of expression, with workshops on DIY music electronic instruments and devices, blockchain, smart-city technology, biohacking, design thinking, DIY kitchen lab, robotics, paper crafts, movables, solar energy and renewable energies, climate change, recycling objects, citizen science, etc.

Participants have an opportunity to join the workshops and lectures as

they wish, bring their own projects for development, give a freestyle lecture, wander around the woods and lakes, eat great food, take mini trips to the coast, kindle the campfire, enjoy or perform a concert/ jamming every evening, read, do nothing, exercise, hike or cycle, help maintain the camp … not to mention explore the local flora and fauna with biologists, artists and tech geeks.

How did you come up with the name "Electric Wonderland"?

The camp's location is in the woods and surrounded by two lakes, so it's literally a wonderland. We want to lose ourselves in the idea of co-creation and creative re-thinking of technology, science and art combined with nature. Electric Wonderland is a very bucolic, pastoral comprehension of innovation, DIY/DIWO community combined with nature and biodiversity.

Croatia is a lovely country with amazing nature, but also a heavy tourist attraction. So, we realized that the best way to have a great camp would be near a small township in the woods, a 30-minute drive away from the Adriatic coast, with facilities for makers, hackers, artists and campers for seven days of co-creation. As Rijeka was the European Capital for Culture in 2020, the best way to engage the audience and create visibility for Electric Wonderland and maker culture was to involve the local community in the process of co-creation, to discover citizens as artists and explorers. We also did guerrilla mini workshops/interventions for the local community of Fužine to introduce maker culture within the context of art, science and technology.

What were some of the differences between the first and second editions of the camp?

The first Electric Wonderland was our first camp after a hiatus of five years. So, we overcrowded

the program with tons of lovely electronic workshops (spoiling the participants in that way), had amazing chefs and food, at the same time trying to figure out how to stop the rain between two lakes in the mountains with this bunch of people we were meeting for the first time.

The second Electric Wonderland was completely about resilience and how to sustain. We created a safe environment and felt more secure than in our homes, yet our minds were worried and constantly discussing how to continue with normality (whatever that means). That time it was more home atmosphere, but also with some new people who parachuted into our lab in June-July. So, we invited them to come along with us in order to bring new energy. Some youngsters joined even two days before. It brought us new members in the lab, different ideas, vibrant energies and diverse workshops in the program. We were more connected with our environment, doing the night walks with astro-photography equipment and some collective outdoor slack exercises. Both camps were different yet stayed in line with the philosophy of our lab: People are what matter!

How did you deal with the pandemic summer of 2020?

In 2020 we re-adapted to a more domestic version. We used this time to reflect on the sustainability of the camp, on how to maintain it better and create a better sense of belonging to the camp philosophy. Some people who were at the first edition of Electric Wonderland were disappointed that they could not take part in 2020, so we took some time to explain why we needed to shorten the list of participants. After the first year, we already had a kernel of 30 people who wanted to come back the following year, so it was not an easy decision to shorten the ecosystem that we had created in 2019 in such a small amount of time.

We also had a different situation, because three members from the Radiona

organizational team had babies in 2020, so only one came with family, but was not able to partake in the same way. For that reason, we decided to include new and young forces, 19 to 23-year-olds, to start creating a new generation of Electric Wonderlanders. In 2020 the camp was also organized as a residence, not only for the invited artists, but for the whole lab, because we started working on devices for our exhibition series entitled Drawing Machines. This situation resulted in artworks that were presented in galleries in Zagreb, but that will also continue to be presented in the future. For that reason, EW2020 was special.

Both camps were very different, but both gave us a tone of experience about what to do in certain situations and what not to do. This is the best "heritage" that came out of nurturing Electric Wonderland. We would like to continue the camp and see how to expand it, not necessarily in numbers, but in diverse concepts.

How do you envision the future of the Electric Wonderland series?

The future of the camp will depend on the situation, because the idea is already recognized and can gather a significant number of participants. We started to brainstorm last September about various possibilities for a self-sustainable camp, to get feedback from the Electric Wonderland community. The camp will need to have a strong program line and agenda, as it did in the first year. At the same time, we are also searching for a new possible location, because we want to explore new areas and concepts.

We want to be very realistic in the process of setting up the new framework of EW; it is not just about management and risks, visions and missions, and similar wording. Projects like these are like a living organism—it is something you must perceive as a living system, with flexibility and elasticity present in the

process too. We would like to position the camp as a space for experimentation and diverse exploration of tools, methods, approaches for people, nature and machines.

Photo: Radiona

Majken Overgaard,
interviewed by Cherise Fong

Space where we can realize visions together, at full scale

Majken Overgaard is the organiser of Catch Summer Camp in Denmark. Catch, Center for Art, Technology, and Design is located at the Culture Yard, a former shipyard situated on the historic harbour of Elsinore (Helsingør)—about one hour north of Copenhagen, and just a short ferry ride away from the Swedish town of Helsingborg.

INTERVIEW 4

How would you present Catch?

Catch was launched as a Center for Art, Technology, and Design by Elsinore Municipality in 2016. We have a transdisciplinary educational programme, where we work across sectors and subjects, mostly with universities in the greater Copenhagen region, but also with local high schools and primary schools. These programmes are both theoretical and practice-based.

Catch Summer Camps are based on our specific approach to art & technology: we believe in individual and community empowerment through skill sharing. Everyone has the potential to be both teacher and learner. By encouraging peer-to-peer learning, we offer a platform for the public to come together to share both questions and solutions through hands-on prototyping and cooperative exploration of ideas. Our site is structured around this approach; we have a large space for learning and sharing, and large workshop areas where we can realize visions together, at full scale.

In what ways are the Catch Summer Camps "feral"?

We strongly believe in the feral idea, expressed through thought and creativity. It's not the structure that is important, but rather the ideology behind the work and the creation of a space for collective investigation

and difference in thinking. In Denmark, we traditionally work in either tech/art/design—we divide thinking and working into classic silos. Unfortunately, we don't have many platforms for transdisciplinary sharing and collaboration. Through the Summer Camps, we are able to bring people from very different areas of knowledge together and offer a transdisciplinary space for collective development. Our focus is on knowledge sharing through a very open and inclusive approach, across a variety of specialties and backgrounds.

How do the Catch artists in residency interact with the Summer Camp participants?

The residency artists have taught at the camps, sharing their own practice. In 2019 Helen Leigh introduced her work with sound and assisted the participants in realising their own sound art projects. In 2020 we focused on soft materials and wearables, and many participants were working with textiles and paper for the first time. Mirabelle Jones was responsible for sharing her practice and introducing the participants to various potential applications using these new materials. So, the residencies and camps have been very intertwined. Sharing practices also enables new critical discussions about creating: how we create and why?

How did you decide on the themes of Sound as material in 2019 and Wearables/soft circuits in 2020?

In 2019 we worked with Aalborg University and the IT University of Copenhagen and decided on the theme together. The collaboration allowed us to include a long list of inspirational speakers, a mix of theoreticians and practitioners, who broadened the scope of how sound can be interpreted and applied as materiality. We also had a track for curators at this camp, because we wanted to work with the development of the transdisciplinary art scene.

This involves not only the artists but also the system around them—museums, art centres etc.—and therefore also curators.

For the 2020 camp, we wanted to increase the emphasis on the crafted work behind many art and technology productions. Often people see art and technology as being very machine-heavy, but most of the time it is also very hands-on and requires knowledge about craftsmanship.

Furthermore, we saw a surge in wearables and soft materials. The technology had matured, and it brought with it some very interesting application possibilities. It was very inspiring to see the many different works that developed throughout the week, because so many were experimenting with unfamiliar materials.

Did the pandemic situation affect Catch Summer Camp in 2020?

During the summer Denmark was fairly open, so we were able to realize the camp in a slightly modified version. We weren't able to include international participants, unfortunately. But we were able to be together and work together during the camp, and performing this physical act of sharing and co-creating felt amazing after a spring defined by lockdown and distance.

So the 2019 and 2020 Summer Camps were quite different?

We never do the same thing twice! Our programming evolves holistically from our ongoing and ever-extending dialogue with partners and our participants. So, the two camps were indeed very different, because our partners were different, and our participants requested different themes for those two years.

For me it's always overwhelming to see how much our participants can create together in such a short time. During the week the atmosphere is thick with concentration, and when we open up and share the

productions with a wider audience at the end of the camp, it's so inspiring to see the pride and joy in everyone's faces. In 2020, a participant also said to me that he really admired our ability to create such an open and inclusive environment. I think this is the best compliment I've ever received in all my time at Catch.

We've learned so much from these camps, especially from our participants and their feedback and wishes for future camps. And of course, from all the other partners in the Feral Labs network. It's been very inspiring to experience how each partner develops their specific atmosphere and keeps developing their format and working with their community in an open and engaging way.

Photo: Makery

possible everywhere

always

ESSAY 3

Resilience as a Critical Approach to Technology

Rosemary Lee

Rosemary Lee is an artist and media studies researcher. Lee recently completed her PhD at the IT-University of Copenhagen, examining how machine learning influences artistic practice and ideas surrounding the production of images.

This essay considers how approaching the theme of resilience from a critical perspective on technology offers insight into technology's capacity to respond to the complexity of the world. This perspective addresses the fact that technology tends to reveal certain intricacies of the world, for example, by providing solutions to one problem while opening a host of difficult-to-foresee side-effects, ethical dilemmas, and unintended consequences. And while critical perspectives on technology may offer crucial insights into and objections to various aspects that arise in that regard, discourse surrounding technology shows a tendency to streamline highly complex issues into black-and-white contrasts. This inclination towards oversimplification does not do justice to either understanding the intricacies that technologies typically entail, nor to the intention of assessing the potential faults that may arise from the use of a given technology. Proposing the theme of resilience as a lens through which to approach technology in a critical light seeks to address the unpredictable, complex, and heterogeneous contexts to which critically focused art, design, and technology respond.

Resilience in Design

The word "resilience" entails the endurance to withstand and to overcome the challenges and obstacles which present themselves, not only in the short term but also in the long term. This requires balancing between specificity and generality, as the qualities that make something especially suited for one purpose or context may not necessarily be helpful if those conditions were to change. To illustrate how design may be made to respond to the specific challenges posed by real-world situations, it can be helpful to think about this in terms of simple tools. For example, the affordances of

one device may make it especially suitable to the execution of a narrow task or range of tasks that it is intended to perform. A can-opener, for instance, is well-suited for opening cans, but it's not especially useful for the performance of other tasks. In contrast to a can-opener, a more multi-purpose tool, such as a pocket-knife, has a wider range of affordances that happens to include opening cans, although opening a can with a pocket-knife may be more difficult than using a can-opener. The circumstances at hand may render one of these tools may be more suitable than the other, but in the case of uncertainty about the potential needs one may have, a pocket-knife would likely be a better "desert island" choice of tool, as it keeps more options open. This simple example demonstrates how the relative specificity of a tool may respond to the uncertainty of the world, and how those conditions in turn shape relevant aspects of how we view a given tool.

Extending this idea to technology helps to think about how certain technologies or design solutions may offer greater capacity for resilience, providing potential solutions for various problems in a changing world. Considering this conundrum, that the design of technology must respond to a world in flux, enables us to recognise that technologies do not solely provide solutions. They also have the capacity to bring with them their own set of challenges, even creating new problems in the process of solving others. And it is possible, even common, for a given technology to have a quite diverse potential beyond the parameters of its initial conception, because the eventual ramifications of technology are not necessarily pre-defined, nor set in stone at the design stage.

While some technologies have questionable ethical groundings from their inceptions, this does not indelibly taint such technologies. On the other hand, good intentions do not ensure favourable outcomes. Even technologies built with presumably virtuous aims may have dire, albeit unintended,

outcomes. As Don Ihde[1] points out, technology has the potential to impose its own interpretation, intentionality, and influence on the situation, process, or context it is applied to. It is therefore important to understand technology as non-neutral and ethically mutable, inclined to change based on the variability of the contexts in which it is designed and applied.

Drawing from my own research into the increasing presence of machine learning (ML)—and more generally, artificial intelligence—in media and in discourse surrounding technology,[2] I find that the importance of adopting a critical stance towards technology is underscored by a historical tendency to treat such approaches as far more straightforward than they indeed are. This is merely one area of the many issues relevant to the role of technology, presently, but being more specific, rather than speaking of technology only in general terms, enables us to better examine what is at stake in such discourse. It also allows us to unpack aspects of how diverse ideas and historical influences may be carried with a particular technology, intentionally or not.

ML is a good example of the ethical mutability of technology, and it is especially relevant currently, because of its growing influence as an approach within diverse contexts, for its ability to capture the popular imagination, and because it is particularly emblematic of how polarising discussions about technology tend to be. ML may, on the one hand, offer the potential for new solutions to problems, but it has also proven to be equally capable of creating new problems, with a great potential for bias, error, and manipulation. ML has

1 Don Ihde, “Program One: A phenomenology of technics.” In *Technology and the Lifeworld: From Garden to Earth*, p72–123. Bloomington & Indianapolis: Indiana University Press, 1990.

2 Rosemary Lee. “Machine Learning and Notions of the Image.” IT-University of Copenhagen, 2020.

enabled the personal data of countless individuals to be sold and used to in turn engineer highly manipulative and invasive new forms of media. It has been used to track, to coerce, and to commodify human behaviour in unprecedented ways and at an unprecedented scale. ML has also consistently been proven to replicate and even accentuate existing biases and imbalances of power, such as the numerous instances where ML systems have shown tendencies towards racial and gender bias.[3] In contrast to these problems, ML may also be used for more promising applications, such as developing new tools and methods for medical diagnostics,[4] managing the massive amounts of data with which we are confronted on a daily basis, or creating art.

Far from being clear-cut, the benefits, limitations, and drawbacks of current explorations with ML demonstrate how subtle differences in approach, in method, or in context may have radically different outcomes. The positive potential of ML certainly does not cancel out its capacity to do harm, nor should this be expected of technology. Instead of rejecting ML indiscriminately as inherently detrimental or hailing it as an answer to many of the world's problems, it is important to closely examine its defects and its potential to do harm in balance with its competencies and potential benefits. Failure to adequately account for the intricacies of technology risks the potential of being caught off guard by them.

3 Joy Buolamwini and Timnit Grebru. "Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification." In *Proceedings of Machine Learning Research*, 81: p1–15, 2018.

4 Jonathan G. Richens, Ciarán M. Lee, and Saurabh Johri. "Improving the Accuracy of Medical Diagnosis with Causal Machine Learning." *Nature Communications*. 11 (11 August 2020): 3923. https://doi.org/10.1038/s41467-020-17419-7.

ML is also interesting for this exploration of resilience because of its historical ties to other fields and their complex webs of associated ideas. It is now situated within the larger field of artificial intelligence, which in turn emerged from cybernetics. These historical origins continue to colour the development of this area of research, whether or not such ties are overtly acknowledged. The approach of cybernetics involves the comparison of various kinds of systems, biological, ecological or technical, with the intention of learning from parallels and differences between them. Comparing the human brain to a digital computer, for example, enables us to think about the related functions of each of these in new ways.

Despite the benefits that cybernetic perspectives provide for cross-disciplinary explorations, problematic assumptions from early in the history of cybernetics research continue to influence approaches such as ML and artificial intelligence, which have come in its wake. For example, human bodies and labour are typically instrumentalised in cybernetic views, where individuals are treated as replaceable, interchangeable, like cogs within a larger mechanism. Technologies descendent from cybernetics also frequently espouse belief in the impartiality of technical processes, which stands in direct contrast to the commonplace proof of error, bias, and potential for manipulation that algorithmic approaches entail. These issues reflect common world views contemporaneous to the development of cybernetics, in the middle of the 20th century, which are extremely outdated at this point, yet often escape direct scrutiny, because they are embedded in approaches to technology and are therefore difficult to extricate.

Yet, while the troubled history of cybernetics continues to haunt ML, artificial intelligence and their surrounding narratives, much can be gained from considering technology from perspectives influenced by cybernetics. To think about technology in terms of heterogeneous systems and in terms of

ecology is certainly helpful to understanding its complexity. Because technology does not exist, nor operate, in a vacuum, contextual factors are highly relevant, which often necessitate a holistic view in order to be fully grasped. We may thereby consider how technologies participate in a media ecosystem made up of diverse elements and processes. Instead of fixating solely on the intended purpose of the technology or its actual effects on a given milieu, it is possible to consider these together to develop a more comprehensive view.

The Current Relevance of Resilience

Addressing the theme of resilience, currently, feels impossible without also addressing the present global context with which we are confronted. "Resilience" is a word that very much captures the spirit of the year 2020, but it also speaks to issues that pose enduring challenges to society on a broad scale. Calling attention to this idea is also a reminder of how interconnected the globalised world is. This means that not only does each individual have an impact on the world at large, but that they are also to a degree responsible to or for that world. Not only do we reside here, we shape the world with our presence in it.

In 2020, several factors exposed faults that had not necessarily been visible before: in systems; among people; and between the various expectations that would ordinarily maintain stability. Virtually no one—and no area of life—has been untouched by the resounding impact of the pandemic. In addition to the global health crisis, political divisiveness and unrest, the viral spread of false information and vitriol, growing financial and social inequality, and a state of near-constant uncertainty have tested the resilience of the structures that were built to enable us to endure such struggles.

But 2020 has not been without its positive notes. Some have found solace in slowing down. People have found new

ways of being together and being apart. And for better or for worse, there has been greater dialogue about numerous difficult issues, which had previously remained unarticulated. Scientists are currently studying how ecosystems and species may have been impacted in various ways by changes in human behaviour[5]. For example, there has been speculation about the potential environmental impact of decreased air traffic. Other effects have also been observed, such as one species of birds decreasing in numbers because of reduced presence of humans, which surprisingly left the birds more vulnerable to intimidation of other predators.[6] The extent of the world's dynamic qualities, which is demonstrated through the interconnected effects of the pandemic, serves as a reminder of the importance of structures that facilitate resilience.

Technologically Engaged Resilience

Critical examination of technology offers new ways of thinking about and using technology in a more dynamic way than perspectives that expect straightforward, black-and-white conclusions. It is all too common for discourse on technology to treat the object of study as though it is fixed, homogeneous, or intrinsically corrupt. There is also a tendency for even supposedly critical examinations of technology to merely parrot assertions about a given technology without conducting

5 Christian Rutz, Matthias-Claudio Loretto, Amanda E. Bates, Sarah C. Davidson, Carlos M. Duarte, Walter Jetz, Mark Johnson, et al. "COVID-19 Lockdown Allows Researchers to Quantify the Effects of Human Activity on Wildlife." *Nature Ecology & Evolution* 4, no. 9 (1 September 2020): p1156–59. https://doi.org/10.1038/s41559-020-1237-z.

6 Cara Giaimo. 'Covid-19 Kept Tourists Away. Why Did These Seabirds Miss Them?' *New York Times*, 22 January 2021, sec. Science. https://www.nytimes.com/2021/01/22/science/seabirds-covid-tourism.html.

genuine scholarship to back up those claims. While they may voice valid concerns and criticisms, such approaches are not as substantial as they purport to be. This makes the grave error of failing to account for the fact that technologies tend to rather be dynamic, heterogeneous, and highly subject to the influence of the contexts and ways in which they are applied. It also often imposes generalisations, assumptions, and moralistic judgements upon technologies without actual scrutiny of the technologies in question. For these reasons, a critical stance towards technology *with* technology instead of *against* it is essential. While "critical" may appear, at least superficially, to be "anti-", this is not the case. In fact, to truly understand something, whether from a critical standpoint or not, it is necessary to approach it without imposing preconceived judgement upon the object of study.

Considering technology in terms of resilience—in contrast to views which pose it as either an answer or a problem in itself—enables greater exploration of the grey zones that arise from many forms of technology. Approaching technologies in this way enables us to assess their potential benefits in relation to the potential consequences they may bring with them. This view advocates treating technology in a holistic manner, which is sensitive to nuance. While it may be tempting to write off particular technologies wholesale for the issues they entail, that would mean to overlook the inherent complexity of the world, in response to which such technologies have ultimately emerged. Grasping this intricate entanglement between the contexts and conditions that technologies propose to address or improve and the actual effects they give rise to, helps us to better understand how a technologically engaged form of resilience could operate.

Conclusion

The examples and ideas covered here develop the idea of how technology can be made to embody a kind of critical, technologically engaged resilience. Rather than purely solving a design problem, technology may be used to understand that problem better and to work with it to make a system more robust. And instead of considering technology separately from the various contextual factors that shape it, we understand how important it is to also address situational aspects of technology. Emphasizing critical perspectives on technology responds to the fact that even inventions with great potential to enact positive change may prove harmful if they are implemented in a particular manner, context, or to too great an extent.

Through close—and critical—examination of the issues associated with a particular technology or technological approach, it is possible to develop tools and methods that apply the benefits it offers, while mitigating the potential negative side-effects involved. As described previously, criticality does not necessarily entail the negation of technology. Instead, it requires adopting an approach that is open to the subtleties of the subject matter. It would be dangerous to assume that one approaches from neutral ground. There are many factors involved in technologies and their various surrounding contexts, but the perspectives of practitioners, users, and observers also impose their own constraints upon how a given technology in fact plays out. Much as one-size-fits-all approaches to technology tend to be unsuccessful at achieving their intended objectives, it is important to recognise that similarly straightforward ways of understanding technology may also fail to grasp the complexity of the actual situations they claim to address.

This exploration of how the theme of resilience may offer useful ways forward in thinking about technology seeks to engage critically with the multifaceted nature of both

technology and the world it responds to. Technology may facilitate greater resilience to the challenges we find ourselves faced with, and the concept of a technologically aided resilience also helps to understand the complex character of technology itself. Not only does embodying a technologically engaged resilience require solutions for the problems most immediately at hand, it also demands a sustainable perspective as to how such interventions may play out in the long run. This necessitates adaptability, attention to nuance, and most importantly, critical engagement with context.

Tina Dolinšek and Uroš Veber,
interviewed by Cherise Fong

Take them out of their comfort zones, and bring them into "unknown" territory

PIFcamp is a 7-day camp set in the remote Soča valley of the Slovenian mountains. It was co-founded by Ljudmila Art and Science Laboratory, a hackerspace with a long history of new media art and activism, and Projekt Atol Institute, where activities range from art production to scientific research and technological prototype development and production.

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What is PIFcamp in relation to the local new media art scene in Slovenia?

Tina Dolinšek PIFcamp was always driven by the idea of establishing a local exchange platform for active participation and non-linear creative production processes. As I had been working as a new-media art producer and was organizing a lot of workshops at that time, I knew we needed a different approach to encourage artists to fill the existing infrastructure with their own ideas and projects. And the smartest way to do that was to take them out of their comfort zones and bring them into "unknown" territory.

When people are trying to figure out how to realize their projects or when they need to solve a technical problem, they usually go online and find some forums, so basically, they never meet others in person. What we wanted to break is this idea that hacking is something that you do at home in your studio, alone. The idea of starting a summer camp in nature, away from the existing established infrastructures (makerspaces, fablabs, art venues, studios) had been brewing for a long time with both core organizers. So, once we found the perfect location and extra funds to make it happen, there was no going back.

Since the very beginning, there was a strong focus on involving local communities and artists we had been working with, but it was also

a good excuse to connect with international audiences and guests we wanted to engage with. All this was also a great opportunity for artistic exchange of ideas and practices among the participants. PIFcamp was not the first event in Slovenia that brought together local and international participants to work together on different art projects, nor was it the first to bring technology-based research into nature, but it was the first one that kept going. As I write this, and the Feral Labs project is ending, I'm already planning the 7th edition of PIFcamp!

Uroš Veber I see PIFcamp as a big collaborative sand-boxing practice, and the result is that every year we spot some unexpected proofs-of-concept that later grow into full-scale performances and exhibitions. And the same goes for unexpected teamwork between people who would otherwise not even know each other; we often observe premieres of new international teams and collaborative projects, even a year or two later after they made their first steps at PIFcamp.

So, it is research and play; even though we spend a big chunk of our yearly budget and a lot of energy on the project and not everything grows into a big production, it is one of the best investments of our time and energy, which turns a seemingly unproductive summer time into one of the most important and intense development periods. This festival format happens only once a year, so it creates a very strong and special focus. What we try to achieve is that everybody has the best opportunity to work and talk to other people and maybe shift some focus as well. The rest is done by the surroundings and nature.

So, PIFcamp in one sentence?

UV It's a bunch of geeks and artists doing stuff in nature, having a great time and doing extraordinary projects.

TD Where art meets technology and nature, and the food is amazing!

How did the event come to be so intrinsically located in the Soča valley?

TD At the beginning the idea was to move the location every year, as we saw a big advantage in the nomadic structure of the camp. We were even considering making it a pop-up thing, building infrastructure from scratch as we went along. But soon, after a year or two, we realized that we hit the jackpot with the location, and it quickly became obvious that we were there to stay. Soča Village, with its incredible natural surroundings, became a very important part of the PIFcamp identity—the river, the hills, the meadows, even the infrastructure we need is already there. For me it's also very important that we integrate the camp into the lives of the local community, be friendly with the neighbours and be super attentive to their wishes and needs. That is a key element that allows us to come back every year, and I must say, we've always been welcome. Hosting 60 noisy geeks in a protected environment (Triglav National Park) can sometimes be quite challenging!

UV As Tina said, nature at PIFcamp is just stunning. At the height of summer, we really get the best of the Alps there—a cold pristine river, and fewer afternoon showers than higher up in the hill or lower down the valley. For me it was always also very important to stay as remote as possible and staying about two hours driving distance away from our capital of Ljubljana, and half an hour away from the nearest town, is almost as remote as one can really be.

Staying away is part of a discreet method that allows the participants to be truly immersed in PIFcamp. Especially during the first two years, and specifically for the Slovenians, who make up about half of the participants. It seemed important that they did not have a chance to disappear

for half a day or come for just one or two morning or evening meetings, or that they would rely on some quick supplies from the city. After two hours of a beautiful but challenging drive, everybody just accepts that they will have to work with what they've got. So, it is sort of a very social voluntary seclusion. You can think of it almost as being trapped on an island, except that the climate is much more forgiving, which makes it much easier to do some heavy thinking and tinkering. And the nature there is outstanding, so even those who are normally glued to their screens notice that it does not feel right to stay staring into their laptops all day.

Are there any particular moments that stood out for you over the past years?

TD For me, every PIFcamp is a very different experience and an exceptional experiment. Each edition is a mixture of some stress, laughs and new encounters, it's like my family grows bigger every year. What we also try to achieve every year is the documentation part. Actually, the biggest achievement for me is, if there was project documentation made and published, and I didn't know about it!

UV For me the most intense moments were during the first year, when we realized that we had come up with something amazing that really works. I remember crying a bit when saying goodbye, because I had to leave a day earlier. In our second and third year we slowly became much looser, less structured. We made it work so that everyone really brings something to the table, and then we just see what grows out of it. This also happened because the participants became a much more homogeneous group, not in terms of their interests, but in terms of the level of their various expertise. After that we only need to provide some rather basic conditions for the content to organize itself. And that is always

magical to observe. It is like the music jams—the best ones are when they happen spontaneously, and no one expects them. If the right people come, the rest mostly happens on its own.

The 2020 edition must have been quite challenging?

TD Lucky for us, PIFcamp takes place in summer, so we could still host a smaller number of selected participants on site. We shifted the focus towards publishing as much content online as possible. We held two remote workshops, streamed a few lectures, and published quite a lot of documentation videos and tutorials. Of course, the experience was not the same—especially in the evening, the venue felt a bit deserted, the opposite of the late-night "buzz" of previous PIFcamps. But I think we did a good job trying to reach out and nurture our international network of participants.

UV In 2020 it was difficult to plan anything, but the hardest job were perhaps the restrictions we put on ourselves. Because it worked out great in the end, it seems easy in hindsight, but it was not easy to cut the number of participants and to decide to enforce a no-fly policy. It was hard to adapt, because PIFcamp before COVID-19 was finally running relatively smoothly, especially because the three organizations (Ljudmila, Kersnikova and Projekt Atol) are involved on quite equal terms. Making group decisions at a time when everybody had an opinion, but nobody knew much, was quite a challenge.

However, Tina did an amazing job in working with a much closer-knit community in 2020. She really took the opportunity to address some of the questions, which we might have never pushed that far, like creating much better and more consistent documentation and testing some remote-participation concepts and solutions. So, even though most of the

team did our normal jobs, we have learned a lot and will build on these new methods even in the future. And we have Tina to thank for her visionary push.

How do you see the evolution of PIFcamp going forward?

TD There's always room for improvement, of course, but I really want PIFcamp to stay as it is—small, intense, diverse and feral. What I want for the future is more camps like this, which can enhance the experience of diversity, provide a different adventure in a different environment and challenge participants in a new way.

UV Yes, we want to scale the project, to test its boundaries a bit—not by making PIFcamp bigger, but perhaps to test some similar new platforms. Tina is working on a related concept, which takes a lot of PIFcamp's lessons, but for kids. I hope someday we can just work on multiple similar formats during the year and find a solution for keeping them sustainable over the long term. I could never imagine living outside the city, but if someone asked me to run a farm or a hut that can host some 40 people, I think I could easily find myself co-running a few PIFcamp iterations per year.

Photo: Katja Goljat

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so much lost

but future

Ewen Chardronnet,
interviewed by Rob La Frenais

We have a long-term collaboration with symbiosis

The first ArtLabo Retreat was held on the island of Batz, off the coast of Brittany, France, in August 2020. Ewen Chardronnet, co-organizer, chief editor of Makery.info and coordinator of the Feral Labs Network, spoke with contemporary art curator Rob La Frenais.

How did you finally decide to host this camp in summer 2020, in the middle of a pandemic?

Cédric Carles from Atelier 21 and I had been planning the ArtLabo Retreat for quite a long time. The Feral Labs Network, which launched two years ago, finally gave us the opportunity to do it. It had always been our plan, but it was our first edition, so it was a bit of a risk. We decided to host it in a children's summer camp facility called Colonie du Phare. It's on Île de Batz, located just off the coast of Roscoff. The colony was built in 1945, just below the lighthouse at the tip of the island, so it's quite remote. It's also close to the beach and accommodates 40 to 50 people in very basic bunk-bed dormitories, but it does have a nice shared kitchen.

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We originally planned to conduct this camp in a format inspired by PIFcamp, Field_Notes and HackteriaLab[1], where you have 40 to 50 participants, not too many, working in groups of 4 to 5 people on a project for the week. So, there are small workshops with dedicated groups. Like PIFcamp, we originally wanted to invite some mentors, launch a call for

1 https://www.hackteria.org/wiki/Main_Page#HackteriaLabs.2C_Temporary_Labs_and_Collaborative_Production_Events

applications, then select the participants. The ArtLabo Retreat was initially planned for June, but because of the lockdown in France, we ended up postponing it to the third week of August. We were expecting August to be somewhat safer, and let's say that it was. At that point, masks were no longer mandatory outdoors, and it was relatively possible to travel. We also had to consider appropriate social distancing, so we downscaled to 20–25 people.

But there was still a risk, so instead of opening it up to applications, we turned it into a meeting of the informal ArtLabo network of arts and open source culture groups in Northern France, which included organizations such as Ping in Nantes, PIB in Tours, Antre-Peaux in Bourges, Labomedia in Orleans, Atelier 21 in Paris, etc. Makery is also part of it. This network meets every few months, also to share productions and works.

So, the ArtLabo Retreat was more like a summit for labs?

It was a network retreat for the ArtLabo people, under the Feral Labs umbrella. We had very few international participants: Miha Turšič from the Waag Society, who had come to the CNRS Marine Biology Station before, came to visit. We invited Roland Fischer from Symbiont.Space in Basel, where he curates art-science exhibitions, to reflect on the camp in an article, partly because we are working with him on symbiotic theory. But most people were from France: producers, artists, friends of the ArtLabo network. Some even came with their kids!

The difference between what the camp was and what it should have been, was not having so many young artists. We were all over 40, more like established artists or leaders of organizations, or producers or coordinators of projects. We also did online radio with P-Node, a Paris-based online radio (https://p-node.org). We

had a radio room, so we were doing interviews, playing sounds, doing field recordings.

Sound artist and musician Joachim Montessuis also came to present an impressive mind map on sound art in spirituality. He gave a workshop on dualism and non-dualism, where he suggested that from the Vedas (knowledge) to the Latin Scientia (knowledge), up to artificial intelligence through quantum science, we are led to experiment with our relationship with reality, either with a classic dualistic and objective approach, or with a subtler, very old and very current approach: the non-distinction between consciousness and matter.

Can you talk about your history of working with Xavier Bailly from the CNRS Marine Biology Station in Roscoff?

Yes, the ArtLabo Retreat also came about from that history. Makery and Ping in Nantes have been hosting art-science residencies at the CNRS with Xavier Bailly's lab, called Modèles Marins Multicellulaires (multi-cellular marine models). We've been working together for the past five years. In 2016, Špela Petrič, Robertina Šebjanič and Carole Thibaud came for a one-month residency. Then in 2018, Miha Turšič did a more informal residency, and together with Xavier Bailly we presented the *Roscosmoe* project at the Science Gallery Dublin during the 'Life at the Edges' exhibition. In 2019, Jean-Philippe Blanchard from Ping worked on an open source Clinostat (zero-gravity simulator for biological research) in partnership with the Open Space Makers initiative and the CNES (French space agency). In 2020, Olivier Morvan made super nice drawings, graphic design and animation films for *Roscosmoe*.

So, also in 2020, as part of the Feral Labs network, we hosted a one-week summer camp. One of the activities was a workshop

led by Bailly. We watched *Symbiotic Planet*, a feature documentary about Lynn Margulis and the symbiotic theory of evolution, and the *Spaceship Earth* documentary about the Theater of All Possibilities, John Allen and Biosphere 2. We had long discussions on these documentaries and theories afterward. Originally, we wanted to visit the Marine Biology Station in a smaller group, see the lab and observe some symbiotic species through the microscope, but it wasn't possible because of the COVID regulations.

Can you say more about the Marine Biology Station's research? Have they found any evidence of the current climate crisis?

Xavier Bailly is a specialist of *Symsagittifera roscoffensis*, a species of sea worm, a photosymbiotic flatworm. This species is often quoted by Lynn Margulis, in the first pages of her book *Symbiotic Planet* and in her other publications. In the prologue of *Symbiotic Planet*, there's a long paragraph on this animal-plant symbiosis, a worm that ingests but does not digest algae, that keeps the algae in its epidermis and feeds off the algae's photosynthesis. This phenomenon was first described in Roscoff, so that's why the species is called *Roscoffensis*, but you can find the worms around Brittany in general, on the west coast of France and on the beaches bordering the English Channel. Some people say you can find them as far south as Faro in Portugal. It's also a very interesting species because it is sensitive to ocean acidification. Like coral, the worm rejects its algal partner when the sea gets warmer, and without its symbiont, it dies. So, the worm is a bio-indicator, and Bailly developed an educational kit for high schools and DIYbio contexts, so that people can understand climate change through the impact it has on fragile symbiosis, as seen in the Roscoff worms or the coral reefs.

I remember there was initially a clash between Lynn Margulis and the Neo-Darwinists, Richard Dawkins and others, because she believed that the Neo-Darwinist idea of "survival of the fittest" evolution was not collaborative, and she challenged that.

Exactly. The *Symbiotic Planet* film also dedicates a few minutes to the Roscoff worm, as this worm has attracted quite a bit of attention and created a lot of interest, because it's an iconic species. Just before the camp, Frédérique Aït-Touati, who is currently collaborating with Bruno Latour on a theatre performance inspired by the theories of Lynn Margulis, visited us in Roscoff. So, the idea of the camp was to reconnect the ArtLabo participants to the history of the marine lab itself and to Margulis's actual theory, with Xavier explaining all these details from a scientific perspective.

What do you have planned in Batz for 2021?

This year we're hosting Maya Minder, from Switzerland and the Hackteria network. She will work on edible algae, basing her research on a famous science paper by associate researchers at the Marine Biology Station—Jan-Hendrik Hehemann, Gaëlle Correc and Mirjam Czjzek—who discovered how Japanese people's intestinal microflora had enabled them to digest seaweed. The team revealed a gene transfer between an ancestral marine bacterium and an intestinal bacterium specific to the Japanese. Once ingested, these marine bacteria associated with algae met Japanese people's intestinal bacteria and transferred their "tools" to them. This hypothesis is all the more plausible, as algae have been an important staple of Japanese nutrition and culinary culture for at least a thousand years. While this unique transfer event is relatively recent in the evolution of intestinal

bacteria, it is quite ancient from a human point of view (several hundred or thousand years). Would our own intestinal bacteria be able to acquire the same tools today as the intestinal bacteria of Japanese people if we also regularly ate raw seaweed-based foods? We plan to investigate the food industry of algae in Roscoff, as well as edible macro-algae and micro-algae research at the Marine Biology Station. So, you see, we have a long-term collaboration with Margulisian views and this symbiosis, or this lateral transfer of genes, or this horizontality in marine biology.

I heard that people living on Île de Batz are called 'Batziens'. Did you have contact with them?

I'm originally from Roscoff, so I know the island quite well! We were based at the Colonie du Phare and the director was there, our kids met their kids and the neighbours' kids, so we had quite a lot of contact with the locals. We were also trying to work with local food producers to cook with local food, potatoes, carrots, artichokes, onions from the island. Being more circular is our way of respecting the locals. We plan to do more of this, like organizing a workshop on ways to make bricks from oyster shells!

We also did a lot of team bonding through cooking. It's an interesting island for that, because the residents are quite autonomous in terms of food production. They still produce a lot of vegetables on the island, compared to other islands off the coast of Brittany. Both the mayor and the residents of Batz are also conscious of limiting the number of houses being built, of not selling land for vacation houses. We met some food producers and tried to cook local food together.

Back in the early 2000s, we both experienced Marko Peljhan's Makrolab in Scotland (which I organized with Arts Catalyst), Venice and in other places. In terms

of non-formal training, what are the resonances between that experience of Makrolab and ArtLabo Retreat, 20 years later?

The Feral Labs network is run by Projekt Atol, which instigated Makrolab, so they always built that context of being remote with non-formal training, learning from your peers. The cooking part to bond the group was also important at Makrolab, and ArtLabo Retreat was clearly inspired by that experience. Then when I saw PIFcamp launch five years ago with a less complex building structure, in a low-key summer camp type of venue, but still coming from that experience of bringing artists together, I was super interested in this way of doing speed workshopping, bonding and creating a network so that people can meet new people, be more focused, exchange and discuss more, and make new friends for the future.

Photo: Mary Maggic

ESSAY 4

Resilient Micro-systems and Experimental Territories

Xavier Fourt

Xavier Fourt is a designer and teacher. With Léonore Bonaccini he co-founded the artist/designer group Bureau d'études. He is a member of the collectives Laboratory Planet, Aliens in Green and Ferme de la Mhotte (Fr).

The present text is speculative. It starts off with an everyday object, relates it to the techno-social structures that enable it, and suggests a few leads to redesign a sustainable and continuous human social project on Earth.

Dennis Meadows co-authored *The Limits to Growth*, a report on economic and population growth with a finite supply of resources.[1] This report, which was commissioned by the Club of Rome and published in 1972, led to a spurt of sustainable development efforts in the 1980s. But about ten years ago, Meadows declared that it is now too late for sustainable development. He argued that, instead of continuing to believe that wide systemic regulations implemented by global institutions can solve the limits of growth, what we urgently need now is resilient micro-systems that can adapt to the rapid and catastrophic transformations of the Anthropocene.[2] But how can his observation influence our material conditions and capacity for resilience?

If we attempt to create a resilient territory based on Meadows's valid remark, we quickly stumble into British designer Thomas Thwaites's famous experiment "The Toaster

1 Dennis L. Meadows et al., *The Limits to Growth: A Report for The Club of Rome's Project on the Predicament of Mankind*, New York: Universe Book, 1972

2 Cited in: Agnès Sinaï, *Penser la décroissance: Politiques de l'Anthropocène*. Paris: Les. Presses de Sciences Po., 2013

Project."[3] In it, Thwaites builds a toaster entirely by his own means, without relying on any of the long production supply chains of global capitalism to source raw materials, components or assembly services. In reconstructing this toaster, Thwaites applies several different techniques, some dating back to the Bronze Age, while others were developed by the artisans of the late Middle Ages. So, it would appear, that the resilience of the contemporary toaster is proportional to the resilience of global capitalism itself—and would not qualify as a resilient micro-system according to Meadows's ideal.

In order to determine which of our objects, practices and applications are resilient, so that we can prepare our individual and collective existences for the shocks to come, let's investigate. Which of these objects, practices and applications would survive if global supply chains were slowed or halted? The results of our investigation would reveal the cracks in our current modes of existence and highlight what we will probably need to give up in order to gain a capacity for resilience. They would also point out what really matters to us, as well as the conditions that sustain our existence.

As a strictly instrumental exercise that ignores all metaphysical questions, we could easily determine a set of essential items to include in our survival kit. Here, what we treasure most would be our own lives and the basic conditions for them. We would choose objects that we can carry with us and that are independent of any infrastructure. This equipment would soon boil down to the four bare necessities—food, shelter, clothing, fuel—as cited in the well-known book by the anti-conformist philosopher Henry

3 Thomas Thwaites, *Toaster project: Or a heroic attempt to build a simple electric appliance from scratch*. New York: Princeton Architectural Press, 2011

David Thoreau *Walden; or, Life in the Woods* (1854),[4] which celebrates simple life away from society and presents an alternative, solitary lifestyle immersed in nature.

Walden, or how to experiment with another way of existing

Thoreau's *Walden* shows that the psychological notion of resilience is secondary to the pedagogical concept of self-teaching. Through independent learning, through our capacity to marvel, listen, apprehend and understand on our own, we can also maintain our capacity to live in an uncertain and mutating world.

But *Walden* is also limited by the absence of a possible social and spiritual community, even as it conditions the author's apparent solitude. Indeed, this utopic Walden, which we will call *Walden I* (Thoreau's *Walden*), cannot exist sustainably without a *Walden II*, a social Walden, that is also technological—the condition that makes it possible.

We can cite the example of *Walden II* (1948), where the behavioural psychology engineer Burrhus Frederic Skinner describes the establishment of an experimental community that is libertarian, utopian and egalitarian after the Second World War.[5]

The community is ruled by scientists and founded on a behavioural approach that challenges free will and considers that human beings are determined by environmental variables,[6] which must be altered in order to generate a

4 Henry David Thoreau, *Walden, ou la vie dans les bois.* trans. Louis Fabulet. Gallimard, coll. L'Imaginaire, 1984 [1990]

5 Burrhus Frederic Skinner, *Walden Two*. Hackett Publishing Company, 1948 [2005]

6 Burrhus Frederic Skinner, *The Behavior of Organisms: An Experimental Analysis.* Cambridge: B.F. Skinner Foundation, 1938

desirable sociocultural system.[7] It is therefore not enough to surmount the usual punitive methods and control techniques, if we are to create a resilient social micro-system that offers the social conditions for individual liberty and dignity. All social experimentation that is wedged into the greater social and ecological environment is limited, because the experiment is subject to the pressures of overpopulation, pollution, global warming, modified geochemical cycles, diminished natural resources and the massive extinction of species on a planetary scale.

In order to ensure its own resilience, this interdependence between territorial social experimentation and its broader environment requires extending the experiment to an entire country—as recommended by the Chilean author Ruben Ardila in his book *Walden III* (1979).[8] Yet in Ardila's fiction, the *Walden III* social experiment fails after the intervention of a foreign power ... The author implies that any territorial social experimentation should necessarily be supported by a social experiment that extends beyond national borders—a *Walden IV* that would encompass the whole Earth. Implementing this socio-ecological system would mark the beginning of a new phase in human civilization, which will have reached maturity.

If Thoreau's *Walden I* presented an alternative but solitary lifestyle outside of society, which today is still possible, but may be somewhat irrelevant in a world of 10 billion people that is scanned by satellites, engulfed in global electromagnetic fields and covered by a thin layer of plastic; if *Walden II* presented an experimental society contained in a community of a thousand people, itself constrained by the surrounding national territory and thus limited in its

7 Burrhus Frederic Skinner, *Beyond Freedom and Dignity*. Knopf, 1971

8 Ruben Ardila, *Walden Tres*. Ediciones CEAC, 1979

capacity to establish a new society; if Ardila's *Walden III* imagined an alternative society on a national scale but just as soon swept away by the conspiracies of neighbouring powers; it seems necessary to establish *Walden IV*, a socio-ecological system to mark the new phase of a new civilization on Earth. And in the context of depleting resources, we might even see *Walden V*, a solar ecosystem based on Earth's dependence on exhausted mineral resources or resources otherwise unavailable on Earth that extends its socio-technical organization to the Moon and the asteroids.

But if we accept Dennis Meadows's declaration that it is now too late for sustainable development and that we need to build resilient micro-systems, what form would such a global socio-ecological system take? The Global Scenario Group (GSG), created in 1995 by the Tellus Institute and the Stockholm Environment Institute (SEI), developed various simulated scenarios and separated them into two major categories: barbarian and transitional. Among the barbarian scenarios, the Fortress World ensures its resilience by installing walled enclaves where elites guard their privileges by locking themselves in golden prisons and exercising authoritarian control over the impoverished majority, while leveraging available natural resources and critical infrastructures.[9] This Fortress World is no doubt represented by the long supply chains required to manufacture the aforementioned toaster. But it's also a scenario that predicts their collapse—in which case we will need to imagine other planetary civilizations ...

9 Gilberto Gallopín et al., *Branch Points: Global Scenarios and Human Choice. A Resource Paper of the Global Scenario Group*. PoleStar Series Report no. 7. Stockholm Environment Institute, 1997

Technologies for experimental territories

Instead of choosing the Fortress World scenario, we will explore a transitional scenario. This is firmly in line with the 17th- to 18th-century Age of Enlightenment, rooted in individual reasoning as humanity comes of age—the German philosopher Immanuel Kant referred to the Enlightenment as the capacity to exercise one's own judgment without being directed by a tutor or director of conscience—and in the spirit of the Encyclopaedia, which recognizes the need for incomplete knowledge, thus avoiding a system with the arrogance of absolute control over reality.

We can imagine this scenario as a constellation of resilient micro-systems spreading over the entire planet, revoking nations, and the conglomerates of these nations, in order to radically replace them with confederations of communes—as was the case in *Democracy in America, 1835–1849* by the French politician Alexis de Tocqueville, and as was also recommended by the Russian anarchist human geographer Peter Kropotkin as a model for a future society. Such an image is an ideal model for imagining paths toward collective action—emancipated from the massive global chains of neo-feudalism, these paths reach out to perpetuity by projecting themselves into the cosmos and into planetary machines.

In this alternative world where entities cooperate, the size of resilient territorial entities can be scaled down to a thousand people, as per Skinner's *Walden II*. But other scales have also been recommended. Design theorist Christopher Alexander recommended units of around 7,000 people.[10] The Greek philosopher Plato imagined communist collectives

10 Christopher Alexander et al., *A Pattern Language: Towns, Buildings, Construction*. Oxford University Press, 1977.

of 5,040 cultivator and soldier heads of families[11]. The number 5,040 presents the advantage of having the most divisors, which allows for the composition of different groups. Here, the number 5,040 is understood as a ratio of proportions between human inhabitants, species and resources, which ensures the sustainability of the whole, as well as its capacity to be democratically governed.

Proportional relationships between the various components of this habitat are one of the great technologies that allow the transformation of a heterogeneous reality into a habitable cosmos. These proportional relationships can also be expressed in stories or myths. For example, the indigenous Kutano tribe of Colombia base their mythological structures, cosmological concepts and ritual behaviours on ecological principles, where social and economic rules are highly adaptable in view of maintaining a balance between environmental resources and the needs of the society.[12]

Here, "experimental territories" could refer to various attempts to establish such systems of rules, techniques, practices, rituals, myths and stories with the aim of ensuring a viable existence within mutating environments, among all participating human and non-human parties, both carbon and silicon, in the fields of health, technology, transportation and mobility, education, social affairs etc. In this sense, an experimental territory could incorporate human-centred (but not necessarily transhumanist) techniques that seek to expand the faculties of the mind, in order to develop forms of inter-species or inter-world communication or reproduction and modulate strength, intelligence, sexuality,

11 Plato, *Laws*, V, 738a

12 Gerardo Reichel-Dolmatoff, "Cosmology as Ecological Analysis: A View from the Rain Forest." *Man*, New Series, Vol. 11, No. 3 (Sep 1976).

emotions, perceptions or even the appearance of perceptions.

Establishing such experimental territories could be further supported by legal investigations to liberate these territories from the rules or laws that are enforced on a larger scale. For example, we could experiment, locally and continuously, on non-vaccinated territories by adopting the approach of "One Health," a global initiative representing collaborative efforts of multiple disciplines to attain an integrated, systemic and unified approach to public, animal and environmental health on local, national and planetary scales. These territories could welcome such a holistic approach, free from the constraints of centralized public policy that is homogeneously applied to territories whose heterogeneity is a necessary condition of their resilience.

This is not about building a heavily fortified Noah's Ark for the benefit of a happy few, nor is it about inventing new infrastructures to concentrate communities with no future. Rather, our focus is on diversifying territories and lifeforms by strategically standardizing components and protocols in order to create habitable territories. This is a particular challenge in the Anthropocene, where global warming, modified geochemical cycles etc. already threaten our 12,000-year-old agricultural civilization.

Is sustainability possible on an uncertain timeline?

In this critical era that anticipates the possible extinction of *Homo Sapiens*, sustainability must be reinvented. The term "sustainability" first emerged in the 1972 report *The Limits to Growth*. The United Nations World Commission on Environment and Development, presided by the Norwegian Gro Harlem Brundtland, defines sustainability as "development that meets the needs of the present without compromising the ability of future

generations to meet their own needs."[13] The work done by this commission led to the Brundtland Report, which served as a foundation for the Earth Summit in 1992.

Another definition of sustainability refers to the seven generations cited by Oren Lyons of the Onondaga Nation (one of the original five nations of the Iroquois Confederacy). According to Lyons, an action is said to be durable when it guarantees natural resources for the next seven generations (about 245 years)[14]

However, seven generations are no longer sufficient to establish sustainability, given the tens of thousands of years required for the natural decay of Uranium-235, or considering the hundreds of thousands of years of environmental transformations to come as a result of human-induced climate change.

Thus, we have two recommendations. The first is to imagine an entirely new scenario, as the term "sustainability" has become woefully inadequate. We propose a new term that would to qualify the permanence of a society going through a process of mutation that lasts several seconds in the life of Brahma—that is to say, several million years.

Cosmic time largely exceeds the common understanding we have of human timescales and cycles of civilization. This context calls for a vaster cosmology, which would not only place humans in their own history, but also ensure social connections beyond our own cultural

13 Brundtland Commission, *Report of the World Commission on Environment and Development: Our Common Future*, Oxford University Press, 1987. Also accessible: http://www.un-documents.net/wced-ocf.htm

14 Cited in: Christopher Vecsey and Robert W. Venables ed. (1980) *American Indian Environments: Ecological Issues in Native American History*. Syracuse University Press, New York, 1980, p173

timescales, situating us in the history of the Cosmos—just as metempsychosis and metensomatosis link us to the mental and biological history of all cosmic beings.

The second recommendation is to determine a "pattern language"[15] as the base for emerging micro-societies. These would be able to self-replicate, recognize and resonate with each other without being overseen by a general administration or tangled in a transversal control system. Pattern languages also appear in the models or templates that were used to organize the collective construction work of 17th-century cathedrals without referring to a blueprint or the authority of an architect,[16] among many more examples.

This notion of pattern language could extend to several different parts of society where resilience would result from the similarity in patterns used to organize micro-societies. The primary subject of research would be the interdependence between objects (social, material, biological, moral, symbolic, technical): as we identify the fundamental structures they form, we discover how they hold their properties within structures that are increasingly complex.

In other words, apprehending the modularity of a few fundamental relationships would enable us to understand how all the parts organize themselves and how those with affinities combine to form groups. So even if one part were to disappear, evolve or modulate, populations (human or non-human, carbon or silicon) could still find their way through the whole, as the patterns would be multi-scale, integrating dynamic changes that are common throughout

15 Christopher Alexander et al., *A Pattern Language: Towns, Buildings, Construction.* Oxford University Press, 1977

16 David Turnbull, *Masons, Tricksters and Cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge.* Taylor & Francis, 2000

the space, from local to regional to global, and on timescales ranging from a month to a millennium, or even longer.

In recent years, emphasis has often been placed on the need to imagine new scenarios of climate change or the Anthropocene. But to implement these scenarios, they must be translated into methods. What kind of method can be applied to experiments that are driven by an uncertain future? What are the necessary conditions for their practical implementation from a social, but also administrative, legal, technical, economic and cultural perspective?

Today, our future remains short-sighted, largely conditioned by past or present conceptual, legal and imaginary frameworks; we do not truly reflect upon the scale of transformations and how they could affect the economy, techniques, administration, laws and culture. A few years ago, anthropologists studied how they might plant signs to indicate the locations of radioactive waste—signs that could be understood by societies radically different from ours in millennia to come. This same approach should be extended to redesigning sustainable societies that—despite radical ongoing transformations and the questionable concept of sustainability itself—will ensure social continuity with generations of the distant future.

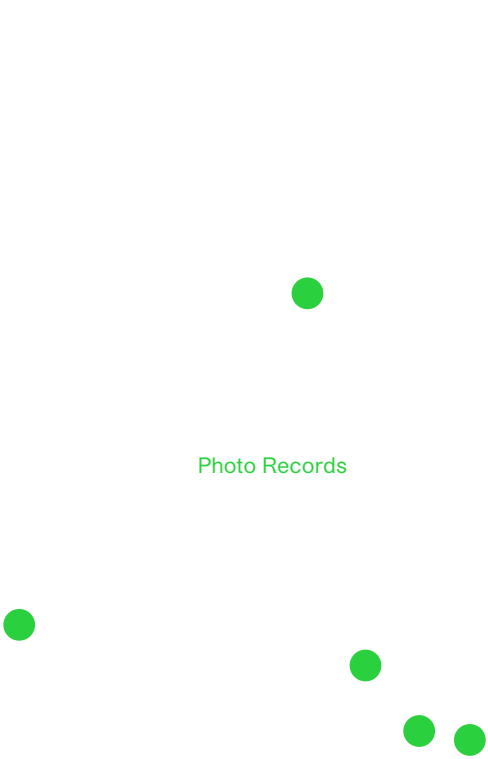


Photo Records

The Heavens, Field_Notes 2019

Field_Notes is an art and science field laboratory at the Kilpisjärvi Biological Station in Lapland, Finland, organized by SOLU, the Bioart Society. During *Field_Notes 2019—The Heavens*, five working groups spent one week in and around the Station, developing, testing and evaluating specific interdisciplinary approaches on questions located above the ground. Photo: Johanna Salmela

Microscoping, Field_Notes 2019

Strange Weather group member Špela Petrič helps prepare samples and observe them through a microscope. The samples were collected during the field day visiting the reindeer fences. The group collected various plants, lichen, algae and slime molds. It triggers a discussion about colonial gazes, or "colonial modes of looking," that we bring to this traditional Sámi land with our instruments of inquiry. Photo: Marja Helander

← **Ancient reindeer corrals**, Field_Notes 2019

The Strange Weather group is on a field trip with reindeer herder Oula A. Valkeapää to visit an ancient reindeer round-up site ("gárdi", "kaarre") made of stones. More than a thousand reindeer were often rounded up there at a time in the olden days. It is a beautiful and special place, part of the Sámi cultural landscape—not part of an untouched nature, as a stranger who is not able to read the landscape might assume. Photo: Marja Hel

HAB group preparing for the launch, Field_Notes 2019

The **H**igh **A**ltitude **B**ioprospecting group is preparing their Helikite for a sampling flight, searching for microbial life in the atmosphere. Fundamental questions about life surviving or thriving in extreme environments, organisms known as extremophiles, are at the heart of HAB exploration. Windsocks attached to the Helikite are used to capture potential microbes. Photo: Till Bovermann

Visiting EISCAT, Field_Notes 2019

For the AIR group, air is inherently multiple. Mingling and mixing, air carries particulate matter, allergens, pollution, viruses, messages and signals. Connecting bodies, places and things at interscalar levels, air couples humans and other-than-humans to geospace. Here it is all about signals as the AIR group visits the EISCAT incoherent scatter radar system in Tromsø, Norway. Photo: Nicolas Maigret

Into darkness, Field_Notes 2019

Mid-week the Space-Earth-Space group hikes through the darkness to a remote hut at Saanajärvi in search of absolute darkness. Weighed down with cameras, tripods and radios, their head torches bob through the dusky landscape. Reaching the kota, they quickly build a fire inside to fend off the rapidly falling temperature, as snow streams past horizontally outside the door. Photo: Andy Gracie

Between scientific, indigenous and poetic understandings, Field_Notes 2019

The mission of the Second Order group is to do research on the other groups, and to act as discursive agents introducing critical perspectives and alternative tools. On a visit to a different field site, that of Skibotn, Norway, the Second Order group is collecting behind-the-scenes footage for the Strange Weather group, which is making a video work based on an ancient sea Sámi mermaid myth. A variety of care practices are needed, too, to ensure that nobody succumbs to hypothermia, as the Arctic Ocean water is freezing. Photo: Johanna Salmela

Exploring landscape, Field_Notes 2019

During her Feral Labs Ars Bioarctica residency at the Kilpisjärvi Biological Station, visual artist and photographer Noora Sandgren explored questions such as: What does immersion mean? In what ways is the landscape absorbed through the body of the traveler? This photo is part of an ongoing process, which also includes making camera-less pictures. Photo: Noora Sandgren

Artist-in-residency Guima San, Electric Wonderland 2019

The AIR program at Electric Wonderland 2019 focused on sound and neuro-hacks. Inventor of musical instruments Yuri Landman was selected to deal with the sound part, while Brazilian hacker and researcher Guima San took over the neuro-hacking. Radiona's community has been following Guima's work for years, and we were all excited when he reluctantly accepted the invitation. He entitled his residency ZEN—Zone of Neural Experiments. To top it all off, his luggage was lost on his way to Zagreb and back to Madrid, so it was a truly challenging residency! Photo: Radiona (CC BY-SA)

← **Scout Centre Crab Streak**, Electric Wonderland 2019

The Scout Centre Crab Streak in the small city of Fužine was founded in 1960, when the Scout Club "Split" bought the terrain and a small house by Bajer Lake in Fužine (Gorski Kotar, Croatia). Since then, the center is fully active each year from April to October hosting numerous international, regional and domestic scout groups of all ages, as well as travelers and campers. The local climate is alpine, although it is located just a 30-minute drive away from the Adriatic coast. Photo: Radiona (CC BY-SA)

Paper Craft—Electro Diorama Workshop by Paula Bučar, Electric Wonderland 2019

Workshops at Electric Wonderland merge high and low technologies, combining electronics with simple materials such as paper, which encourages participants to use their hands more frequently, in order to develop their motor skills. Workshops promote minimal usage of tools and foster various techniques for tinkering, brainstorming and reflection. This civic lab includes a very diverse intergenerational and interdisciplinary community, whose members act as workshop educators, facilitators and creatives. Photo: Radiona (CC BY-SA)

Hacking Reality by Gasper Sopi, Electric Wonderland 2019

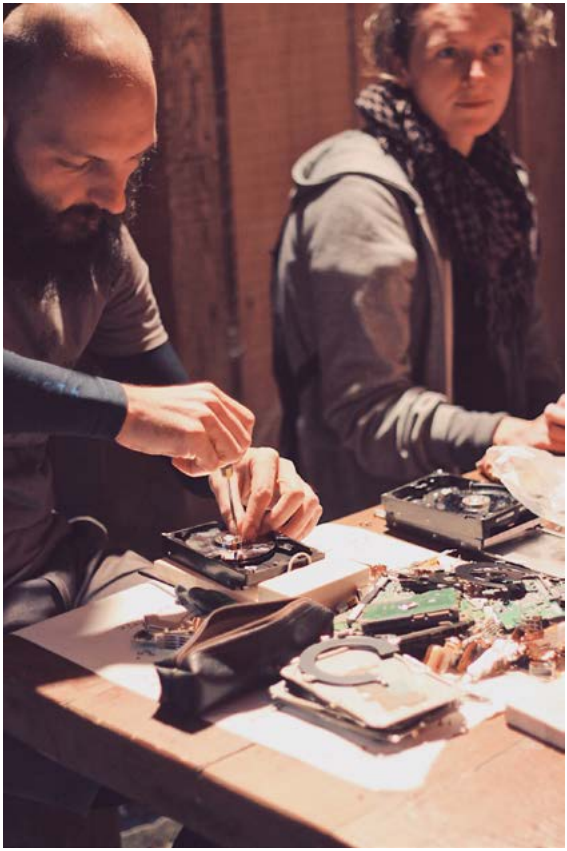
Gasper came to Electric Wonderland by sheer chance (he submitted his application just a day before the camp started) and on his motorcycle. He is an interaction designer traveling across the globe for the past two years, searching for the meaning of life. He was so inspired by the camp and the community that he proposed to host an experimental DIY workshop on exploring unfamiliar visual peripherals. Photo: Radiona (CC BY-SA)

Smart City Technology by Goran Mahovlić, Electric Wonderland 2019

Having a tech camp in nature is a dream of every hacker and maker. Just imagine having an exclusive portion of time dedicated to hacking, learning and sharing, while being in nature. Radiona nurtures projects that connect technology, citizen science, fauna and flora. So we connected with Goran, who is exploring the possibilities of smart city technology in diverse areas and with different elements: water, soil, temperature, air and atmosphere. The possibilities of open data are endless. Photo: Radiona (CC BY-SA)

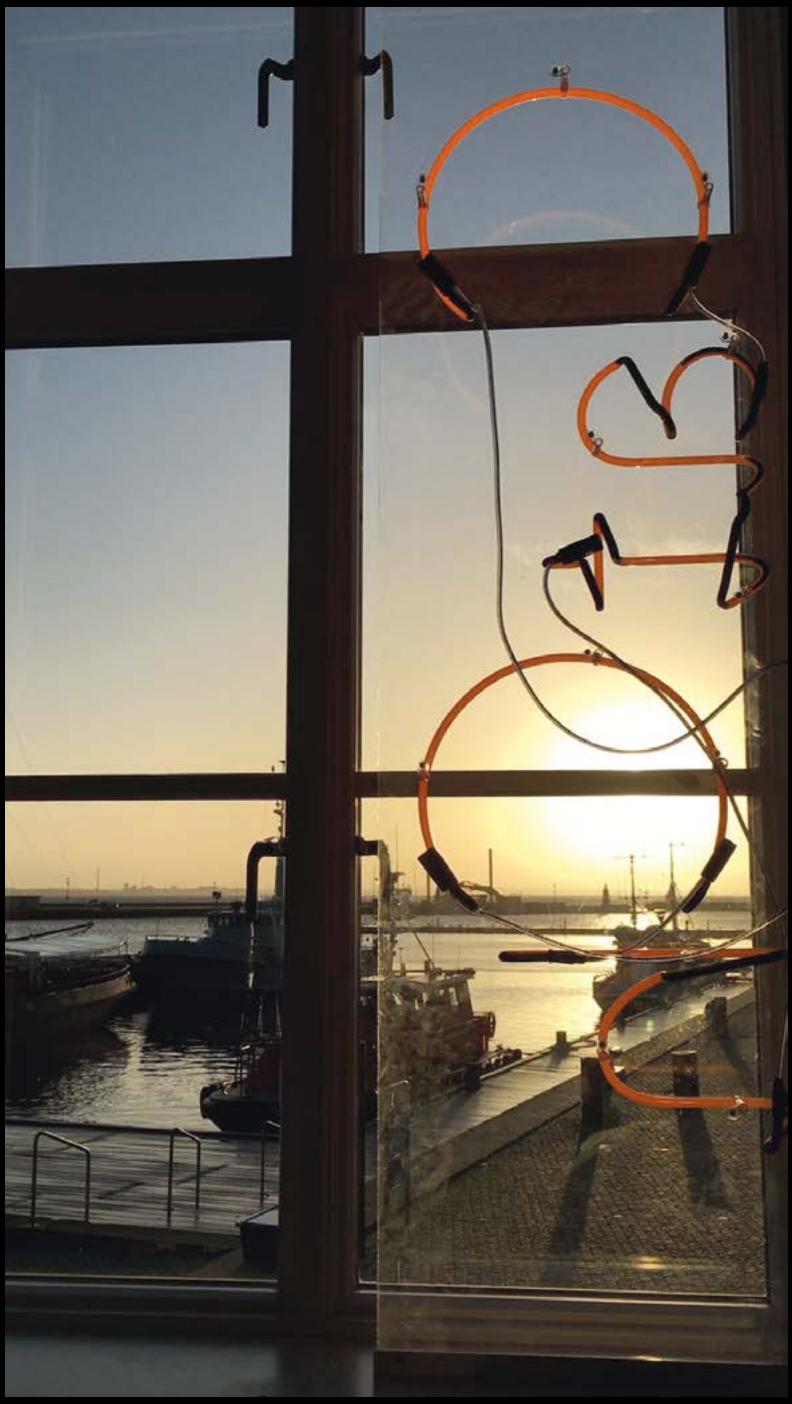
Artist-in-residency Yuri Landman, Electric Wonderland 2019

The reason we invited Dutch inventor of musical instruments and musician Yuri Landman to the first edition of Electric Wonderland was his humorous, down-to-earth approach to building, creating and making. During his residency he hosted several DIY instrument-building workshops (such as the 6-tone kalimba in the photo) and built a collection of musical instruments. Yuri creates a very special hands-on vibe during his workshops and combines electronics and wood as a material for expression. Photo: Radiona (CC BY-SA)



Night workshopping, Electric Wonderland 2019

One of the greatest things about having workshops in the countryside is the possibility for people to do something they like for 24 hours and in DITO mode. The workshops created a great bond between people and encouraged those who were shy to express themselves in their own way, without social judgment. Electric Wonderland aims for those moments when you get out of your comfort zone, doing-by-learning and learning through mistakes. Photo: Radiona (CC BY-SA)



Contemplation and creation, Soft Circuits at Catch 2020

The main focus of the Catch Summer Camp in 2020 evolved around imagining how the world would be if hardware was a little more soft. Participants explored the exciting, rapidly developing world of soft circuits and creative computing, including a look at conductive embroidery and e-textiles. No previous coding, electronics or microcontroller experience was required, so the first thing the participants did was an intro workshop on how to work with microcontrollers, sound, LEDs, sensors and actuators. Photo: Catch

← **Catch—at the tip of Denmark**

Catch, Center for art, design and technology, is located at Helsingør Cultural Harbour about one hour north of Copenhagen. Founded in 2016 with the support of the Elsinore Municipality, Catch takes a practice-based and open-door approach to learning, offering year-round workshops, institutional and independent collaborations, a makerspace, a co-working space, public exhibitions, and on-site and off-site programming. From the windows, there is a view of the ocean and the old ships in the historic harbour. Photo: Catch

Sharing practices at Soft Circuits, Catch 2020

The Summer Camp attracts artists, designers, technologists and creatives who wish to get inspiration on how to approach physical computing in an artistic way by using wearable technology, conductive embroidery and e-textiles; and wish for guidance on where to start when exploring the vast world of technology projects. Because the camp is hands-on and focused on learning through practice, and because everyone has the potential to be both teacher and learner, the participants are encouraged to share their own practices each day. Photo: Catch

Digital Alchemy, Catch 2020

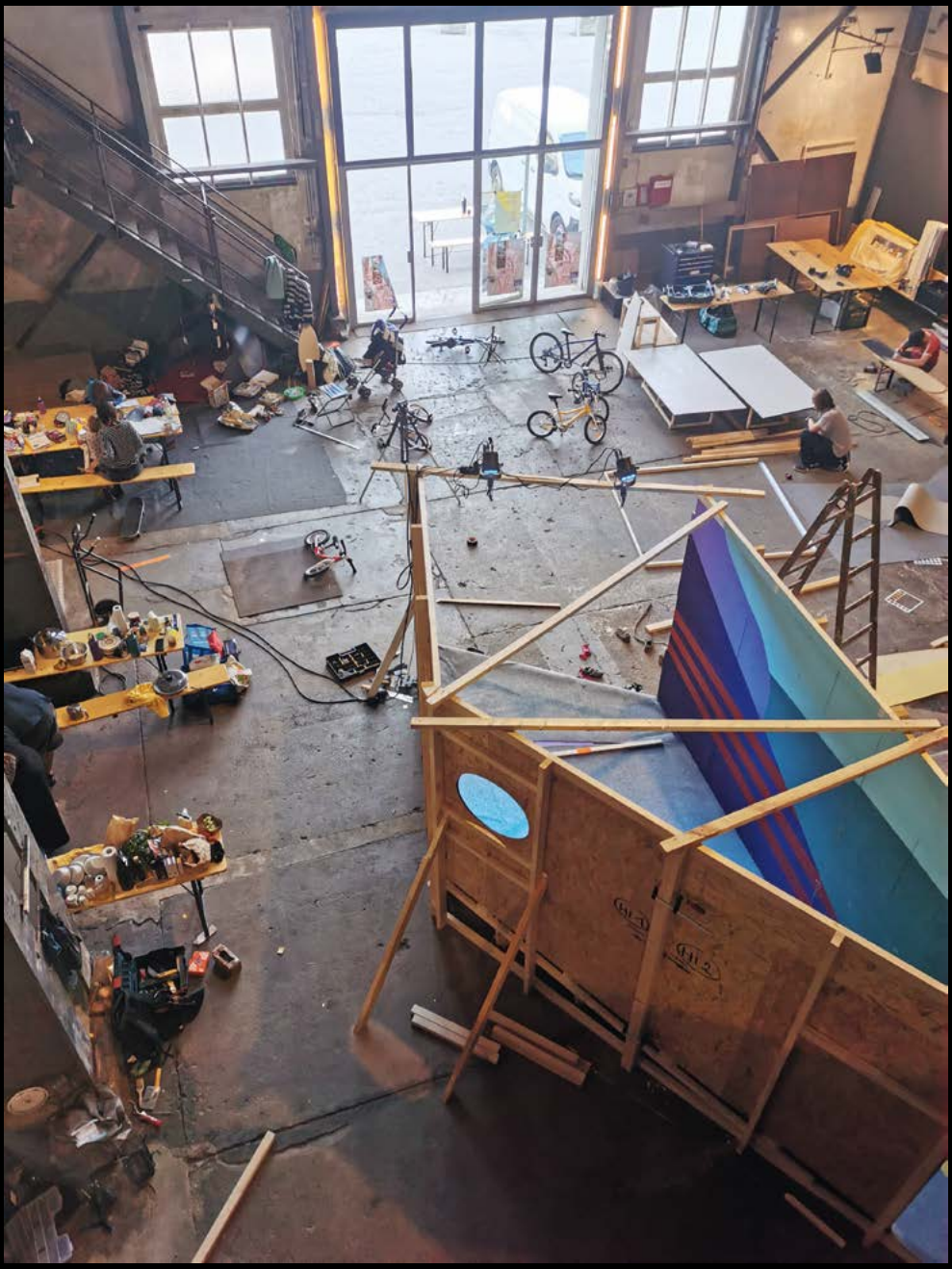
Catch hosted two Feral residencies with the artists Mirabelle Jones and Helen Leigh. Leigh developed a series of sonically enchanting instruments that enable a music to be experienced outside of a linear form, while Jones worked on product development inspired by diverse voices in science fiction. One of the many results of their residency is displayed on the photo: a prototype of *e-Protea*, a biological computer processing unit that evolved over thousands of years from mountains of electronic waste, fusing biological, chemical, and man-made structures to produce a Frankenstein of the natural and unnaturally intelligent. Photo: Catch

→ **Paper circuit discussion at Soft Circuits**, Catch 2020

Over the course of the week, participants have joint discussions and developments. In addition to creating a space to explore the world of creative electronics, this Summer Camp is an opportunity to expand one's artistic network and meet new people, who work with art and technology from a variety of specialties and backgrounds. Throughout the week, the participants develop new prototypes, either together or individually, with guidance from the group. Photo: Catch

Artistic and curatorial practices in the age of Technogenesis, Catch 2019

The 2019 camp was developed in close collaboration with Aalborg University and the IT University of Copenhagen, and hosted inspiring participants from all over the world, from South Korea and Japan to Mexico and the U.S. During the week, the participants were asked to finish a prototype of an artwork or curatorial concept, which would explore and contextualize the main topic of Technogenesis, according to their own practices. The prototypes and artworks are showcased in an exhibition open to the public after the Summer Camp ends. Photo: Catch



Testing the weather balloon, Schmiede 2020

Schmiede facilitates Smiths' creative process and takes care of the essentials: communication, infrastructure, tools, community kitchen and the renowned beer tap. It's up to the participants to fill up the space with their multitude of ideas and projects. Schmiede's purpose is to enhance what the Smiths want to do, hence its claim: playground of ideas. Actually, sky's the limit: Ewen Chardronnet is testing the weather balloon that traveled peacefully from Finland over France to Hallein, only to be viciously attacked minutes before this photo was taken, by the Saline, hence its slightly deflated top. Photo: Schmiede

← **Just another day at the office**, adhoc lab at Schmiede 2020
Since 2003, Schmiede has been a world created by and for Smiths (its participants) in late September, on an Island in the Alps. Once a year, around 300 international participants, artists, experts and students, peers, from various professions and spheres of interest, come together in an old salt refinery (Saline) in the city of Hallein, Austria. During the 10-day long event they experiment, network and present to their peers for feedback, and on the closing day, they present to the general public. Photo: Schmiede

Stefan testing, Schmiede 2020

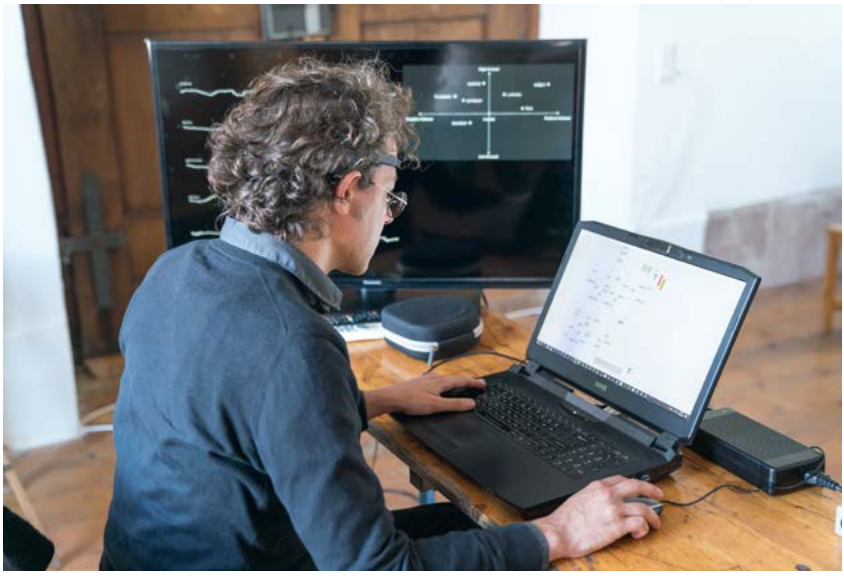
Sound artist Stefan Tiefengraber extends the function of objects in his work. He modifies e.g. light sources for the output of sounds and vice versa. He uses analog and digital mixing consoles and misuses them: the video mixer outputs sound, the audio mixer provides the abstract images. During Schmiede 2020 he used Electro, the power room of the salt factory, as his studio and as a venue for his final installation *01V96 01V96*. Photo: Matthias Gruber

feralAIR: Bernhard Hollinger and his audio set up, Schmiede 2020

Schmiede is also a place for experimentation and (im)possible collaborations. In their project *Fields*, Fara Peluso and Bernhard Hollinger explore the possibilities of bioplastic as an alternative material for vinyl records, while merging their interests in bioart and DIY sound practice. Bio artist and designer Fara Peluso experimented with blending bioplastics and worked on a biodegradable alternative for vinyl, while musician Bernhard Hollinger explored and recorded sound samples for (and from) the new material. Photo: François Robin

feralAIR: Stefanie Wurschitz setting up, Schmiede 2020

Equality and representation is at the core of Schmiede, as well as the project *"The Women * Who Made It—Interactive Portraits,"*, which made the artist and researcher Stefanie Wurschitz a very valuable part of both feralAIR and Schmiede20. The project focuses on the intersection of feminism, open source technologies and peer production, while capturing the "equitable magic" that resides in Schmiede by creating individual interactive portraits of the women of Schmiede. Photo: Matthias Gruber



feralAIR: Chun Shao in her studio, Schmiede 2019

Multimedia artist Chun Shao prototyped an emotive-textile watch kit, which explores the relationship between feelings and tactile sensing. Chun Shao declined to move to Salzburg into her dedicated work space at the Center for Human Computer Interaction, spearheading the feralAIR format in Hallein. She preferred her little room on the Island instead, even after Schmiede came to an end. Photo: Matthias Gruber

feralAIR: Antoni Rayzhekov bored out, Schmiede 2019

BOREOUT is a brain-controlled participatory visual installation, in which the visitor is invited to unveil a secret image only when a high level of disengagement is detected in his/her brain activity by a computer system. Antoni has been a Smith for years now, which enabled him to fully utilize its context. Unlike Chun Shao, he arrived early in order to work with the infrastructure at Center for HCI in Salzburg, and used Schmiede as a finalizing and testing platform. So far, Schmiede is by no means bored of Antoni and is anticipating more. Photo: Matthias Gruber

Island of Batz, Brittany, ArtLabo Retreat 2020

The ArtLabo Retreat was held on the Island of Batz off the coast of Roscoff, in northwestern Brittany, France. A short boat trip brings visitors to the car-free island. Because of the pandemic, the ArtLabo Retreat was hosted as a non-public event. Photo: Ewen Chardronnet

← **Aerocene Community France**, ArtLabo Retreat 2020

The ArtLabo Retreat was a pilot camp co-organized by Ewen Chardronnet (Makery) and Cédric Carles (Atelier 21), who are also leading the Aerocene community in France. The global Aerocene community was initiated by the Argentinian artist Tomás Saraceno to promote zero-carbon air transport and aerosolar ballooning. At the camp, Atelier 21 led a workshop on the history of utopian air machines, and the team flew the Aerosolar Backpack on the beach near the camp. Photo: Charlotte Bartissol

ArtLabo network at the Colonie du Phare, 2020

The ArtLabo Retreat was held at the Colonie du Phare, built in 1945 to accommodate children from inland Brittany. ArtLabo is an informal network of art production associations in northwestern France. The network meets twice a year to share ideas and hands-on activities, with a strong focus on finding ways to support art projects and training in non-formal contexts. Photo: Ewen Chardronnet

∏**Node radio**, ArtLabo Retreat 2020

An important focus of the ArtLabo network meeting was broadcasting discussions and sound art works on p-node.org, a hybrid radio and online platform. Various topics were discussed: from the purposes of Feral Labs activities to hard science, from low-tech solutions to open source software and micro-FM, from philosophy to sound art. It was also a good opportunity to discuss and plan future training programs in non-formal contexts. Photo: Ewen Chardronnet

→ **Hiking on the island coas**t, ArtLabo Retreat 2020

Not a day passed without exploring the 3.2km2 island, walking or cycling around its coasts. The northern coast is rocky and windy, while the southern coast is more calm, overlooking Roscoff Bay. Participants also collected coastal pollution debris, including a heavy shipwrecked computer. Upcycling empty shells, such as oysters and scallops, is planned for next year. Photo: Makery

Symbiosis and Lynn Margulis teachings, ArtLabo Retreat 2020

Xavier Bailly, researcher at the Modèles Marins Multicellulaires lab of the Roscoff Marine Station, gave a workshop on marine symbiosis. The participants discussed Symbiotic Earth, a documentary on the life and work of Lynn Margulis, a key 20th century evolutionary biologist. In many of her works, she referred to the unique S. Roscoffensis species, Roscoff's famous flatworm, which feeds on the photosynthesis of the microalgae it ingests (but not digests) and stores in its epidermis. Photo: Ewen Chardronnet

Cooking as social bonding, ArtLabo Retreat 2020

The Colonie du Phare can host 40 to 50 people and is equipped with a professional kitchen. Consequently, the team took collective cooking as an important way to socialize, bond and get to know each other. Participants relied largely on locally produced vegetables and fish, as the Island of Batz is still quite autonomous in vegetable agriculture and fishing. There are plans to scale and develop this aspect by foraging edible algae and experimenting with Breton-Asian cooking. Photo: Makery

Outdoor workspaces, PIFcamp 2019

Greek architect, designer and maker OIivia Kotsifa started working on the idea of developing outdoor workspaces during her residency at Ljudmila in February 2019. She was invited to PIFcamp as a node holder and to test her furniture in its natural environment. Together with participants, she built several options for mobile wooden workspaces, which were tested, applied and moved on several occasions. It was also a big inspiration for the first PIFnic (picnic in the woods). Photo: Katja Goljat

← **PIFcamp Kick-off**, 2019

Every summer since 2015, PIFcamp brings artists and geeks to the idyllic alpine setting of the Upper Soča Valley in Slovenia. The focus is mostly on DIY and DIWO approaches in developing art projects, with an emphasis on sharing skills and knowledge. The unique week-long platform for international artistic exchange and creative exploration of technologies was brought into existence by Projekt Atol, Ljudmila and Kersnikova. Photo: Katja Goljat

Mika Satomi & Magdalena Ågren: MAGtronics, PIFcamp 2019

Most of the concepts on how to develop the DIY e-textile costume for MAG's noisy trombone performances were initiated at PIFcamp 2019. The name of the project—MAGtronics—actually came about a year later, when sound artist Mag and e-textile designer Mika worked together in 2020 at their PIFresidency in Swelovenia: a meta-space between Ljubljana, Slovenia, where the AIR should have happened, and Övre, Sweden where it actually did. Photo: Katja Goljat

← **PIFhikes with Dario Cortese**, PIFcamp 2019

Since the very first PIFcamp, there has always been one node that does not use gadgets and the internet. It is also one that many PIFcampers love the most: The Wild Edible Plants and Hikes with PIF's "wild man" Dario. Not to say that the nature surrounding the PIFcamp venue isn't rejuvenating as it is, but longer, sometimes even off-road hikes deeper into the Julian alps really take the load off one's mind during an intensive week. [A signature PIF experience!] Photo: Matjaž Rušt

Synths, synths everywhere, PIFcamp 2019

There is no PIFcamp without synths! It's not just about the modulars in the evening jams—there are opportunities to solder your own, enhance your existing synth collection, etch your first PCB or learn about modular synthesis. In 2019, PIF's Synth Node master was John Richards a.k.a. Dirty Electronics, who hosted two synth-building workshops, and inspired Staš Vrenko and Klemens Kohlweis to develop a Dirty Module, their own Eurorack module. Photo: Katja Goljat

Wearable Interactive Ant-Farms by Andrew Quitmeyer, PIFcamp 2020

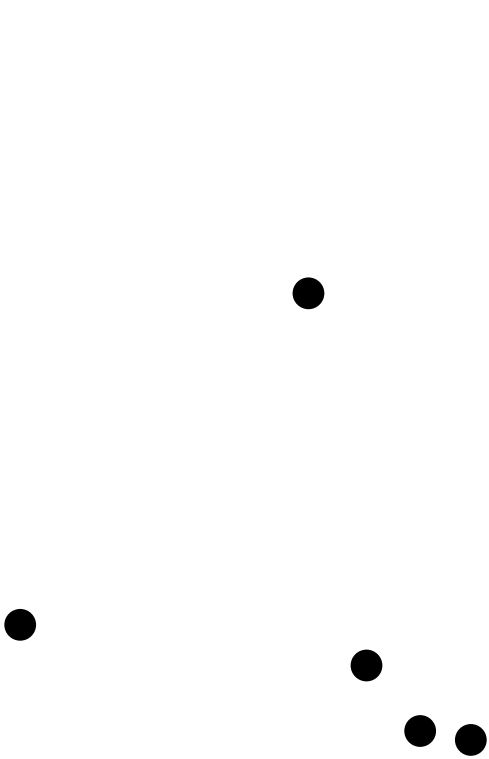
2020 was a challenging year, and it had a great impact on PIFcamp's 6th edition. Unable to bring as many people as usual to the location, PIFcamp moved some workshops online. It was also a good opportunity to reconnect with Dinacon's Andrew "Awesome" Quitmeyer. His Wearable Interactive Ant-Farms node was a first attempt at inviting people who could attend in person to still actively participate. Photo: K. Goljat & M. Rušt

Tips and tricks, PIFcamp 2020

Most of the educational content at PIFcamp is brought to light quite spontaneously and is only lightly coordinated. For instance, a surprise lecture by Bernhard Rasinger on the use of oscilloscopes in modular synthesis got covered by a group comparing notes on various streaming techniques. The latter thus streamed and shared some of PIFcamp's content and spirit to those who could not attend due to the COVID-19 prevention measures. Photo: K. Goljat & M. Rušt

PIFcamp at night, 2020

After the sun goes down, the work does not necessarily stop. For a lot of PIFcampers, night only brings a new energy and a different focus. While one group enjoys an extended evening, socializing and debating by the bonfire, Blaž Pavlica demonstrates 360° sound features to a bunch of curious listeners who join him inside Luka Frelih's geodesic dome. Photo: K. Goljat & M. Rušt



Feral Artists in Residence

In 2019 and 2020, we held five different Feral Labs per season. What helped us shape them in critical ways was also the structure of Artist-In-Residence (AIR) programmes. These were implemented in various ways, with different strategies, but were an important complementary measure that helped address the needs and adapt the goals to the specifics of each Feral Lab.

Residencies were often closely entangled within individual events. Some partners perhaps invited the artists to their residence to thoroughly develop crucial content for their respective Feral Lab. Others used their AIRs to give the artists an opportunity to realize an artwork that might have been partially developed at one of the Feral Labs, while some also used the AIRs for extra pollination as well as educational and outreach activities, such as close cooperation with local peers, technologists and communities.

Makery as our media partner reworked the standard AIR model and developed the Chronicler-in-Residence. Makery's journalists did not only cover the Feral Labs of this project, but they visited and reported from many other similar formats.

1.4.–31.10.2019
Makery's Chronicler-in-Residency

Jean-Jacques Valette is a journalist in search of solutions who is interested in innovations that change the world—from direct democracy to the maker movement, through the collaborative economy and renewable energies, he looks for signals that announce the transition to a sustainable and united world. He reported extensively on the Feral Labs, artlabs and Creative Hubs he visited all over the world.

15.7.–10.8.2019
PIFresidency_19

Scott Kildall is a new media artist who examines the interplay between territory and technology, which he sees as a dynamic relationship that changes as the dissemination of new inventions shifts and then resettles the structures of power. He worked on Unnatural Language, a project (in a collaboration with Michael Ang) that focuses on auditory improvisations in the natural environment through geographically scattered sculptures that act as autonomous creatures.

1.8.–30.9.2019
Catch's AIR

Helen Leigh is a creative who specialises in music technologies, craft-based electronics and education. She is known for her playful, creative approach to technologies. During her residency she developed a new series of sonic creatures which empowers people to investigate electronics and physical computing as tools for musical creativity.

1.–7.9.2019
Radiona's AIR

Yuri Landman, a musician and inventor of musical instruments, was part of the first edition of the Electric Wonderland summer camp. Landman hosted several DIY instrument building workshops and worked on the Electric Spiderweb installation that is based on sonification experiments with motors, strings and motion.

1.–17.9.2019
Radiona's AIR

Guima Sam, a Brazilian researcher, hacker and gambiologist from GypsyLab8, was artist-in-residency during Electric Wonderland camp. During his *OM (OpenMatrix)* residence he worked on an open physical computing experience where audio-visual effects and small electroacoustic objects in the environment were controlled with a brainwave, heart and neuromuscular signal sensor. His residence also extended to Zagreb, where he led an *OM* workshop.

1.–29.9.2019
Ars Bioarctica AIR

Till Bovermann is an artist and scientist working with the sensation of sound and interaction. The main topic of his *Ars Bioarctica* residency at the Kilpisjärvi Biology Station was listening to its vast soundscape and exploring the biophony of Kilpisjärvi's surroundings, which is a host to many "microworlds"—relatively small places like rocks, small ponds, or streams that are home to a big variety of plants, mushrooms and animals.

1.–30.9.2019
Schmiede's FeralAIR

Chun Shao is a multimedia artist interested in experimenting with the paradox of intimacy and loneliness in the digital world, especially in terms of communication. She developed a prototype of an emotive-textile watch kit which explores the relationship between feelings and tactile sensations. Electronic textiles interpreted and archived a series of tangible emotions.

1.–30.9.2019
Schmiede's FeralAIR

Claudia Rohrmoser and **APNOA** worked on a project called Leuchtturm. During their residency they built an immersive space in one of the Schmiede venues, the Tower. Claudia Rohrmoser is an Austrian video designer and APNOA (Sebastian Drack & Tobias Feldmeier) are an audio-visual collective.

1.–30.9.2019
Schmiede's FeralAIR

Antoni Rayzhekov is an interdisciplinary artist working in the field of music, theatre and digital arts. As a FeralAIR fellow, he developed a project called BOREOUT—a brain-controlled participatory visual installation in which the visitors are invited to unveil a secret image only when a high level of disengagement is detected in their brain. In other words, if a visitor is bored enough, the machine assembles the secret image and display it for the visitor to see.

15.–26.9.2019
Ars Bioarctica AIR

Noora Sandgren is a visual artist and art educator. She often uses residue as a material and her own body as a medium. She is interested in the fluidity of embodied experience and the transformation of hierarchical social structures. During her AIR at Kilpisjärvi, she explored the ways of collaborating with non-human actors like the weather, insects and plants, tested related ideas and staged experiments in the field.

15.–29.9.2019
Ars Bioarctica AIR

Kati Roover is a multidisciplinary artist living and working in Helsinki. She works with moving image, sound, photography, text and installations. In her works she approaches environmental changes through poetic imagination. As part of her AIR project *H2O—Creatures* she explored and listened to different waters and gathered recordings for her sound piece. This ongoing project focuses on massive cultural changes and how water's cyclical time relates to it.

10.3.–30.11.2020
Makery's Chronicler-in-Residency

Cherise Fong is a writer, translator and journalist seeking out invisible ecosystems in remote locations, uncanny interactions among living things, untold stories and hidden hero(in)es of future possible ecologies. As Makery's 2020 chronicler-in-residency, she reported remotely on feral activities in Europe and on wild island labs in Okinawa and Taiwan.

16.–22.8.2020
Radiona's AIR

Sara Ercegović is a versatile musician and equality and ecology activist from Croatia. At the 2nd edition of Electric Wonderland, Sara combined her interests and passion for music, nature and recycling into one functional whole called *The Forest Orchestra*—an inclusive, site-specific musical installation built from recycled materials.

16.–22.8.2020
Radiona's AIR

Bojan Mucko is a Croatian new media artist, anthropologist and skater with a focus on socially engaged art. In the last few years he has been exploring urban-anthropological issues and reviewing the disciplinary boundaries between contemporary art practices and cultural anthropology through interdisciplinary projects. During his residency Mucko built a DIY eyesight toolkit for exercises in a public space, focusing more on the device art approach and less on the performativity of the exercises.

1.–30.9.2020
Schmiede's FeralAIR

Fara Peluso and **Bernhard Hollinger** worked on a project called Fields—Vibrant unseen synergies. The project explored possibilities of using bioplastic as an alternative support material for vinyl records and at the same time experimented with the idea of how some practices and gestures can be explored and reshaped into a new invisible matter, the sound. Fara Peluso is an artist and

designer with a strong interest in biological processes and other living organisms. Bernhard Hollinger is a musician, visual artist, curator, educator and filmmaker.

1.–30.9.2020 & 18.–25.1.2021
Schmiede's FeralAIR & Radiona's remote AIR

Stefanie Wuschitz is an artist, researcher and critical maker working at the intersection of research, art and technology. Her foci are feminist hackerspaces, open source technology and peer production. Wuschitz was a Feral artist in residence twice. At Schmiede she worked on a series of interactive portraits called *The Women* Who Made It—Capturing the Equitable Magic of Schmiede*, and during her remote AIR with Radiona she explored the topics of ethical hacking in the context of women*/ trans hackerspaces around the globe, community building, open source technology and peer production. She also wrote an online diary: https://radiona.org/diary/.

1.–30.9.2020
Schmiede's FeralAIR

Daniel Aschwanden and **Lucie Strecker** worked on *DOG_man.2180—a biofiction,* a bio-art performance. The collaborating duo dedicated themselves to the idea of a posthuman world which includes not only humans and dogs, but also about human-animal hybrids. During the residency they developed various contexts and performances. Daniel Aschwanden is a performer, choreographer, director and curator who lives and works in Vienna. Lucie Strecker works as an artist and researcher in the fields of performance art and bio-art.

10.9.—31.10.2020
Catch's AIR

Mirabelle Jones is a queer, non-binary creative technologist, interdisciplinary artist and researcher investigating critical, creative practices in technology. During their AIR, Jones worked on the project *Digital Alchemy: Future Technology Products Inspired by Diverse Voices in Science Fiction*. The project explored works of science fiction written by a diverse body of authors including women, LGBQTQAI* folx and people of colour to realize diverse futures through the creation of fictional technologies.

7.—28.12.2020
Remote PIFresidency_20

Mika Satomi and **Magdalena Ågren** developed an experimental e-textile costume and a body gesture music controller for a new sound performance. Due to COVID measures, their AIR took place in the Swedish countryside, or, to be more precise, in Swelovenia—a fictional place between Slovenia and Sweden. Mika Satomi is an e-textile costume maker who has been working with electronics and textiles for over 10 years. Magdalena Ågren aka MAG is an experimental musician who has been performing since the 1990s. The MAGTRONICS project they developed during their residency was also thoroughly documented in their online diary at http://nerding.at/magtronics/.

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nobody is waiting

Notes on the Editorial Team

Erich Berger is an artist, curator and cultural worker based in Helsinki, Finland. Recognizing science and technology as fundamental transformative powers of our life-world, he moves between visual arts and science in an area which he also investigates and develops as director of the Bioart Society in Helsinki.

Ewen Chardronnet is an artist, writer, curator, producer and organizer of numerous intermedia productions, exhibitions and event designs for international festivals and cultural institutions. He is currently chief editor of the bilingual fr/en magazine and medialab Makery.info and coordinator for the Feral Labs Network.

Tina Dolinšek is a Ljubljana-based new-media art producer, education curator and cultural facilitator who in the past has worked with several Slovenian art organisations. In 2015 she co-initiated an art-tech-research platform PIFcamp and has been running it since then.

Deborah Hustić is a media artist, educator, curator and creative director of Radiona—Zagreb Makerspace. Always working at the intersections of arts, technology, culture and science, she is fascinated by the art of

workshopology. She works in the areas of community building and managing diverse ecosystems in hybrid arts and hacker/maker culture.

Kerstin Klimmer is a cultural worker and curator based in Salzburg. Her main interests are contemporary art, multimedia art and interdisciplinary cultural projects realised in rural areas.

Majken Overgaard focuses on the synergies between technology and contemporary art. She explores the interdisciplinary universe where art, science and technology cross-fertilize and form a creative environment for the development of new ideas, experiments and inventions.

Marko Peljhan is an artist and researcher working in and between art, technology and science. His projects, initiatives and collaborations span a vast area ranging from ecology and social reflection to tactical media, technology, space exploration and geopolitics. He serves as a professor and director of the MAT Systemics Lab at the University of California Santa Barbara. He is the chair of the Media Arts and Technology program at UCSB.

Tjaša Pogačar is a freelance curator, editor and writer in the field of contemporary visual and intermedia art. She co-established ŠUM, a journal focused on art, philosophy and theory-fiction, which she has been running since 2013. She is one of the curators of Iskra Delta—34th Ljubljana Biennale of Graphic Arts in 2021.

Uroš Veber develops projects and programmes that transcend the boundaries between art and science. Most of his work involves international productions in contemporary art and informal education. He is also an active advocate for NGOs and the self-employed in culture.

Rüdiger Wassibauer is in between. He works with and supports enthusiasts at the intersection of art, science and maker movement. His focus is to make things happen and let ideas come to play. Untapped resources, recontextualization and co-creation are his tools of choice. Rüdiger is the initiator of Schmiede Hallein.

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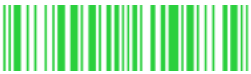

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