

**Iris Long**

**Memos for  
A Speculative  
Project**

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Poster for the exhibition *Blue Cables in Venetian Watercourse*.

## Behind the Schematic

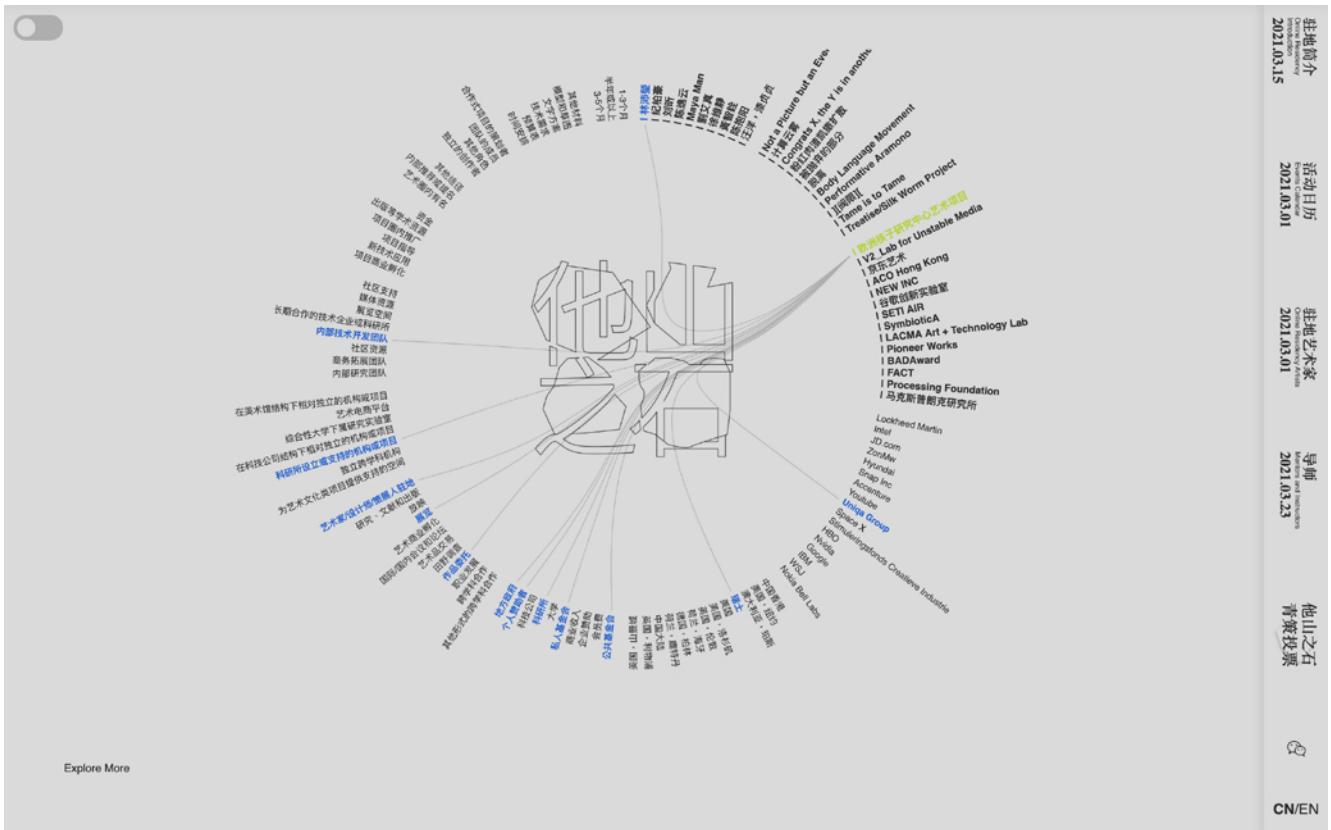
Eleven projects were invited to participate in the case study process titled *Blue Cables in Venetian Watercourse*.

The art world has familiarized itself with inter/cross/transdisciplinary practices. While various other—and Othered—disciplines (such as socio-technical theory [STS], engineering, programming, design thinking, filmmaking, or even traces of anthropological research methodology) take part in artistic and cultural knowledge production, we find that artists have a keen interest in inter/cross/transdisciplinary collaborations, and are therefore facing new challenges in their practices and within the overall art ecosystem.

We set out to analyze each project across different categories: the *relations* among artist, institutions, and companies; the *distribution* of technologies (or *lively materials*, as described by Ben Vickers in *Future Art Ecosystems*<sup>1</sup>), resources, and copyright; the *roles* of initializers, researchers, mediators, suppliers, and promoters; and all types of behind-the-scenes *materials*: documents, communication records, financial budgets, prototypes, on-site photos, and so on. The collected data was then fed into visualization algorithms to generate a map linking each project with its data profile.

Subsequently, we scanned the selected projects, ranging from art and science residencies to art and tech incubators, and navigated among matrices of “inter/transdisciplinaryness,” a term still trendy, fuzzy, and unstable today—and, at worst, in

1 See Ben Vickers et al., *Future Art Ecosystems 1: Art x Advanced Technologies* (Serpentine Galleries, 2020), [https://d37zoqglehb9o7.cloudfront.net/uploads/2020/07/Future-Art-Ecosystems-1-Art-and-Advanced-Technologies\\_July\\_2020.pdf](https://d37zoqglehb9o7.cloudfront.net/uploads/2020/07/Future-Art-Ecosystems-1-Art-and-Advanced-Technologies_July_2020.pdf).



Visualization for art, science and technology collaborations, part of *Blue Cables in Venetian Watercourse*.

W. Patrick McCray’s terms, “a cliché over used by academic administrators and business leaders.”<sup>2</sup> Nevertheless, this circular map illustrates certain evaluative aspects: Most of the surveyed projects were required to be finished within a time-frame of six months; in terms of support received from institutions, solid technical support turned out to be the least accessible compared to financial, archival, or promotional support (there was even the case that an artist recalled not receiving the tech support granted through the program); open discussions were conducted whether *an artwork* was to be treated as the sole output of a project; in addition, the question of instrumentalization emerged from time to time—one artist described her concern about the invisible technicians

and scientists, raising caution that this invisibility might diminish their passion for collaboration as their contribution is turned into underrecognized labor. Meanwhile, some other artists interrogated the issue of art being utilized as sheer communication tools for designated technological products or scientific research.

As intricate as such a digital visualization may appear, it is strangely unsettling—with all the data processed and flattened onto one or more analytical planes, the diagrams seem to camouflage more than they reveal. The explanatory power of diagrams was already detectable when Gordon Pask juxtaposed engineering maps with his cybernetic installations in the 1970s, and has become increasingly graspable with the rise of mind-mapping tools, graph lists, and programs for “networked thought.” The unsettling feeling, however, emerges from this kind of infrastructurally explanatory *look*. Binary branches, single-choice questions,

2 W. Patrick McCray, *Making Art Work: How Cold War Engineers and Artists Forged a New Creative Culture* (Cambridge, MA: MIT Press, 2020), 3.

quantitative methods, categorization, and metadata fevers... What's really unsettling isn't the schematic pattern itself, but the inertia of our schematic way of seeing and our reductionist way of analyzing. To peek in between the fine lines connecting data points isn't a demolition of the entire structure, but a switch of perspective—from the total to the partial, from overview to close-up, from the manifest to the hidden.

Why behind the schematic?

To support, to commission, to innovate, or to “incubate” is also to develop respective logistics, to define a start and an end, to framework, to coarse grain. At Max Planck Institute, where residencies take place once or twice per year and during which the artist is often self-driven within the scholarly environment, the aspect of logistics seems less urgent compared to for instance, New Inc, where 8,000 square feet of dedicated office, workshop, social, and presentation space are dedicated to a cohort of nearly 100 people. On the operational level, to look at a inter/transdisciplinary project is also to confront all kinds of logistical challenges: how much time and resources are devoted (and distributed); how to shape/evaluate the outcome; and how to construct interoperability across institutions. (One still wonders how 8,500 person-hours of the 30 Bell Labs engineers were devoted to the *9 Evenings* performance series.—Were Stafford Beer's “management cybernetics” of the late 1950s diffused into the in-between areas of art and technology?<sup>3</sup>) A proposal of

*behind the schematic*, however, is to envisage an alternative way of looking at logistics.—A mode or a model is not an operational menu, but a series of questions in itself. Hence, instead of asking how to shape the outcome, the question would be: What is an outcome? Instead of thinking about the allocation of resources and time (as in a typical supply chain or OA system), the question becomes: Would there be a flexible method so that resources and time are not fixed/allocated in advance? How do we de-aestheticize them and unlearn unnecessary “rules”?

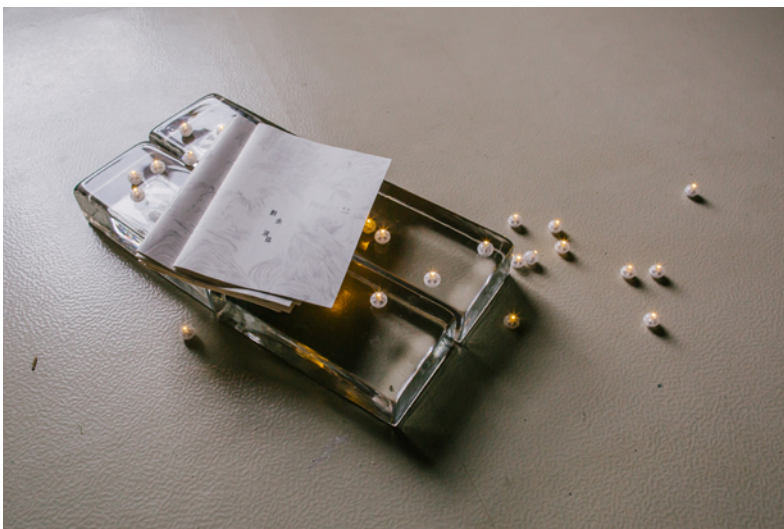
*Draw schematics, but be sensible to institutionally built pathways. Traverse among them. Schematics are questions, instead of answers. Pay attention to the “knots” (Ronald D. Laing), complications, and even confusions [which] can guide processes of finding—and not the strict, straightforward ‘search’ (search, research, recherche) by means of a system or models which have been otherwise legitimated.”<sup>4</sup>*

## Eccentric Needs

During the online residency of the *Blue Cables* project, we received a request from artist-in-residence Long Pan in regards to a tricky experiment: She wanted to pursue “plant metallurgy” as part of her long-term, multipart project *Wind Bell* in order to investigate the circulation of heavy metals in natural environments. She had a particular interest in copper—as a highly versatile base metal, copper is found throughout contemporary communications

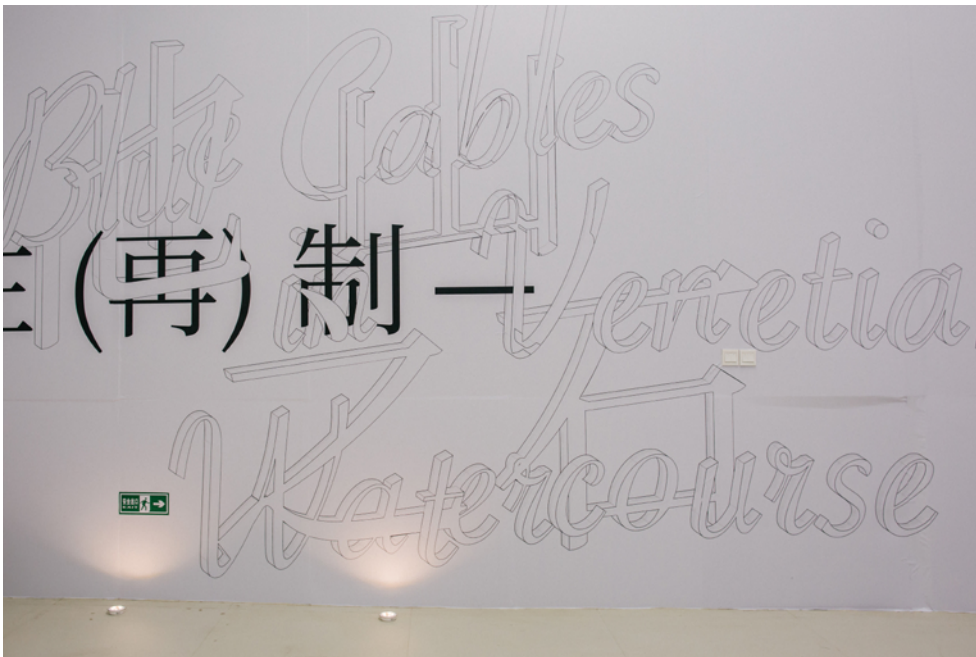
3 See Ned Rossiter Ned, *Software, Infrastructure, Labor: A Media Theory of Logistical Nightmares* (New York: Routledge, 2016).

4 Silvia Henke, et al., *Manifesto of Artistic Research: A Defense Against Its Advocates*, (Zurich: Diaphanes, 2019), 18.



*Blue Cables in Venetian Watercourse, installation views.*





*Blue Cables in Venetian Watercourse, installation views.*

circuit architectures and power transmission systems and in virtually all contemporary digital media. If we were to magnify the “cloud,” we may discover its extremely high copper content.

The artist’s focus was the lifecycle of copper. Having first been isolated from the raw ore through purification, stabilized high-purity copper elements will eventually undergo another, similar isolation from another kind of mine: it will be recovered from electric toothbrushes, smartphones, TVs, refrigerators, and tablets, i.e., extracted from the mountains of “e-waste mines.” These being her field research sites, the artist traced copper elements that had “escaped” from the processing plant, entered the river, and saturated the fields of Guiyu, a small town in Southeast China, the notorious hometown of e-waste.

She then wanted to “mine” heavy metal particles from crops: a dozen grams of copper would be extracted from hundreds of kilograms of rice plants and subsequently crafted into a wind chime. Although the reed roots of the Chishui River contain 257 times more copper than average, it was still hard for the artist to extract the metal; and the infeasibility was not due to technical complexity but discrepancies between different modes of conducting lab experiments. “An awkward volume I’m working with,” recalled the artist in a case study interview with the memo author: too much for a delicate lab incinerator, yet not enough to be treated as a mass production order permitting the use of different equipment.



Screenshot of an online meeting for the online residency project, part of *Blue Cables in Venetian Watercourse*.



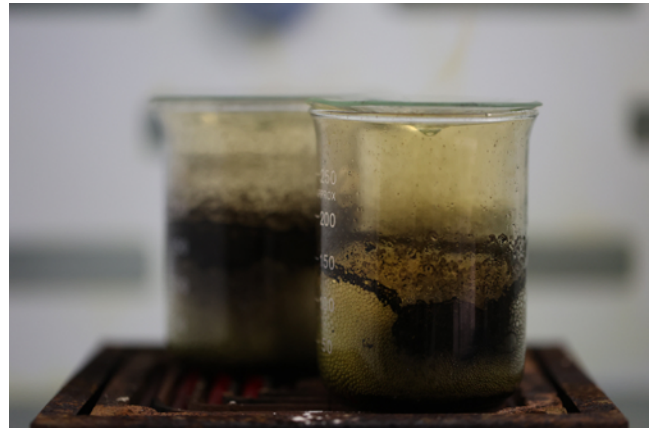
Long Pan, documentation for *Wind Bell*, 2021, work-in-progress.

A few visits to the Academy of Life and Environmental Sciences brought no luck: “They told me that the laboratory incinerator can only burn 100 grams at a time, meaning that it will take till the end of time to burn my pounds of plants.” Not to mention that the precision culture in a lab would require sealed weighing for every 100 grams of plant ash, making it more time- and labor- consuming. In a word, this plant metallurgy request was too eccentric, too non-standard, and too low in cost performance for the lab scientists; and the artist had to conduct the experiment at home.—Aquatic specimens were processed at high temperatures until they uniformly turned to ash (a few electric ovens caught fire during the process), yet sulfuric acid, the crucial material in electrolysis, wasn’t easy to acquire.

If we assume that the laborization of knowledge has taken shape within the “science-military-entertainment-university-complex,”<sup>5</sup> the eccentric needs of transdisciplinary projects often demonstrate disruptive energy by interrogating what cannot be laborized—at least not in the conventional sense. As for the plant metallurgy project, almost all scientists refused to acknowledge its “scientific value”—not only because the procedures seemed too fuzzy, but also because the project couldn’t be economically justified within the lab system (in terms of knowledge and economic “value”). In „The Lab Imaginary: Speculative Practices In Situ,” Jussi Parikka describes the standardization of laboratories as a core feature

5 Jussi Parikka, “The Lab Imaginary: Speculative Practices In Situ,” *transmediale journal*, June 5, 2017, <https://archive.transmediale.de/content/the-lab-imaginary-speculative-practices-in-situ>.





of not only chemical and physical science activity but also engineering work: the lab has become a site of “invention,”<sup>6</sup> the undertone of which may also point to efficiency and cost performance. With laboratories becoming a societal engineering site drawing together, in Peter Galison’s words, “a Borgesian miscellany”<sup>7</sup> (meteorology, nuclear weapons, chemistry, volcanology along with business strategy as well as other fields, practices, and materials): Where would an artist’s “eccentric needs” fit? Furthermore, could something off the engineerable track sneak into a laboratory and create more of a sensual knowledge?

6 See Parikka, “The Lab Imaginary.”

7 Peter Galison, *Image and Logic: A Material Culture of Microphysics* (Chicago: University of Chicago Press, 1997), 51.

To observe eccentric needs is also to interrogate what constitutes “value” and “norms.” It is also an agent to perturbate the economic structures of the lab as a societal site. Long Pan eventually found a lab willing to collaborate, namely, offering idle productivity and experiment capacity to her undertaking. “They thought it’s an interesting idea and allowed me to use the facilities, although they were really confused: ‘With this micro volume of copper extracted, you can’t generate any commercial value.’” The whole thing was too trivial and maybe uneventful for the scientist working in the lab everyday (but who helped the artist in the end)—except for a few moments, when he quietly listened to the sounds of a wind chime made from the plant-sourced metal and put back into the field, its seemingly heterogeneous metallic shell echoing the same rhythm as the reeds and the grass in the humid southern wind.

An artist's experiment may not aim for replicability, precision, or scaling-up. "New hybrid forms demand new, expanded categories, if," as Natalie Loveless states in reference to Rosalind Krauss's "Sculpture in the Expanded Field," "they are to be accountably dealt with." Perhaps to some extent, the expanded comes from the eccentric.<sup>8</sup>

## Besides the Tangible

It is quite common for an artist to prepare a package of application materials: concept, models, sketches, budget breakdowns, technical details, and a timeline. Scientists sometimes share a similar workflow when they submit a paper or a poster to a conference—where clarity of content and of form are considered the basic modules of effective communication. Meanwhile, it is not just the materials that need to be prepared for a transdisciplinary project.

The first day Yiyun Chen, a participant of the case study part of the *Blue Cables* project, arrived at the BAD program, an annual award which aims to encourage emerging designers and artists to delve into the world of bio art and design and to produce new multidisciplinary work, she wasn't yet sure what kind of people she would meet and communicate with during the coming months, even though her project was quintessentially about being by oneself.

The project was located in Eindhoven, where she hoped to remodel a bedroom originally intended for a person "living vertically" to accommodate a person "living

horizontally," i.e., in bed, thus emulating the living conditions of bedridden persons and investigating metabolic processes to see the impact of horizontal living in a restricted area on health and mind. She would then spend more than a month alone in that room, or more precisely, in a mobile bed she designed and constructed herself, which allowed her to carry out various daily tasks. During this period of seclusion, the artist used wearable and invasive instruments to monitor all physiological data; a team of scientists would conduct comprehensive monitoring and medical examinations of her body.

Executed in extreme solitude, while requiring intimate and continuous input and care from a biometric/physiological data monitoring system (and the operators behind it), *Horizontal Living – Long Live the Bedridden* did not only explore how people collaborate but also the intangible feelings accompanying the collaborative process. Unlike in Long Pan's case where the lab scientist only offered minimal participation ("idle resource"), the BAD project employs a mutual selection procedure, meaning that the scientists involved in the project have fewer cognitive barriers understanding the significance of transdisciplinary practices. When a project is conducted on a day-to-day basis, the variations of one's feelings could come into play. Thus, much of the coordinating and negotiating required in a collaboration turns out to be not merely technical but emotional labor.

Prior to BAD, Yiyun was involved in an artist-in-residence program at SymbioticA, where she gained some experiences in genetic modification and cell cultivation through a project that employed cold condensation extraction of essential oils to refine the human scent from clothing. Each time she stepped into a lab, she would

<sup>8</sup> Natalie Loveless, *How to Make Art at the End of the World: A Manifesto for Research-Creation*, (New York: Duke University Press, 2019), 1.



Yiyun Chen, documentation for *Horizontal Living – Long Live the Bedridden*, 2018, work-in-progress.

feel like a freshman who was “privileged to be ignorant,” as the artist recalled during a case study interview with the memo author. Yet she also felt hesitant and cautious about “asking for too much” or disrupting the research atmosphere. This feeling lingered when she started on the BAD project—she found herself in an unfamiliar city with a project to complete in a few months of time. “I always try not to bother others too much, and hope everyone in the collaboration will feel comfortable and respected,” she said. “During the *Horizontal Living – Long Live the Bedridden* project, a guy from the science lab happened to have some experience in videography, and he then became the cameraman for the project.” Going by the visual aesthetics, the quality of the footage was not comparable to that of a professional videographer; however, having him as the camera man, a decision driven less by a professional



Yiyun Chen, documentation for *Horizontal Living – Long Live the Bedridden*, 2018, work-in-progress.

approach to the division of labor than by necessity, seemed to enhance personal resonance among the collaborators.

What became apparent here was an intangible layer consisting of probing, doubting, self-motivating, non-machinic, improvisational and all sorts of intricate feelings oscillating within the various layers of a collaborative project. In nature, there is a social or societal fabric embedded in almost every group project—even the grammar of a science or technology conference/summit includes hidden lines of chitchat, exchanges, and even potential collaborative intentions converging during coffee breaks or an impromptu get-together at unexpected spots in a conference hall. How would these subtle, intangible, even ephemeral elements (which cannot be packaged into application materials or pipelined during a collaborative process) be taken into account when we observe a transdisciplinary project? Would those internalized experiences ferment in the long run?

Having worked with scientists from the Department of Nutrition and Movement Sciences at Maastricht University for the BAD project on a day-to-day basis, Yiyun's feelings towards the scientist community gently transformed. Prior to this collaboration, she had a certain feeling of inferiority being an artist: "I thought that scientists are equipped with more knowledge and contribute more to society; I saw them as 'great figures.' By the end of the *Horizontal Living – Long Live the Bedridden* project, I would say that I'd developed a more balanced understanding of the relationship between the artist and the scientist." During the execution of the project, she was essentially isolated, but, very subtly, she felt accompanied.

## Affinity and Ripples

In a workshop organized by Iris Qu and Chao Hui Tu at the artist-run Cybernetics Library in New York City, participants were invited to "become" hedgehogs, monarch butterflies, English oaks, milkweeds, mycorrhizal fungi, and, more interestingly, a weather forecast AI. This speculative and imaginative interplay created confrontation amongst all kinds of species. Later on, the conversations and patterns of interrelationships observed during this session were to be simulated in Iris's long-term project *Do AIs Dream of Climate Chaos*, which was presented as one of the seven prototypes featured in the *Driving the Human* project, an undertaking aiming to catalyze scientific and artistic collaboration and to produce tangible prototypes responding to complex contemporary scenarios.

In computers, "driver" often refers to a set of files that allow the operating system to interface with certain pieces of hardware or devices. This metonym provides an alternative way of looking at how multiple transdisciplinary agents are engaged and incorporated in a wider process. With the "driver" not operating as a steerer in control of the entire mechanism and its direction but as a team of translators passing instructions between agents (a metaphor often used to describe a computer driver), a singular direction can manifest in plural terms.

On the *Driving the Human* website, the forces at work in the mud are marked with arrows. In fact, the autopoiesis and autonomy of each participant's research would have the potential to form contact zones (or, as Peter Galison puts it, "trading zones"<sup>9</sup>) for discursive dialogue, knowledge

9 See Galison, *Image and Logic*, 1997.

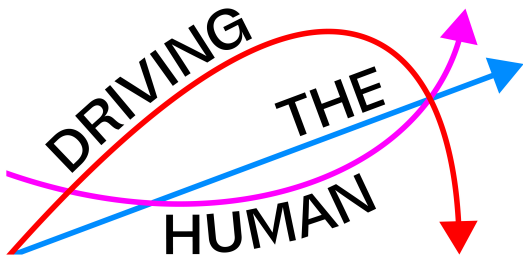
regeneration, as well as the push-and-pull among various disciplines and fields. The “driver,” in this case, drives the push-and-pull in various directions.

Looking back at Iris Qu’s workshop, we may notice a similar constellation of multi-directional forces and standpoints among the participants (or species). In her speculation, AI may request data from the past 500 years from an oak tree or hyperlocal data from fungi. The local knowledge provided by the species offers AI a touching point to counter the tendency to generalize, which is often seen in contemporary big data-driven algorithms. The species, meanwhile, may selectively offer answers based on their position on the egoistic/altruistic spectrum. Perhaps this project can be seen as a miniature of what *Driving the Human* offers to a time of increasing complexities: allowing players to maneuver or stroll with their respective agencies and to negotiate/translate among them (“drive” on a micro level) to achieve nuanced solutions.

It was also at the offline event of *Driving the Human* that Iris Qu met Swiss artist/creative technologist Mark Lee as well as sociologist Xiang Biao, both of whom carried on conversations with her. Every week,

Mark would meet with Iris to develop a project, discussing concepts of a speculative fish farm for the new future (YANTO) where artificial intelligence is used to create and optimize synthetic species to withstand the increasingly hostile ocean environment (again, from the viewpoint of an AI simulator as in her workshop at the Cybernetics Library), and reading Elizabeth Kolbert’s *Under a White Sky* together. Xiang Biao also invited Iris to join a casual discussion group of his PhD students for a broader exchange about technology and society.

Going back to the image of mud, we may notice not just arrows that indicate forces but also subtle ripples. Despite the limited time (and spatial) frame of all these gatherings, some ripples take form as shown by Iris’s experience: various spaces for discussion and collaboration disperse and create their own spheres of exchange, which, throughout long threads of conversation, may become less hierarchical and more versatile. Similar to Iris’s experience, people who are involved in *Driving the Human* may as well anticipate a lingering connection and lasting fermentation—not merely in the form of a collaboration, but, to use the most ancient description there is, a friendship.



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