

New forms of collaboration between science and the arts

# Seven Prototypes for Eco-social Renewal

A new scientific and artistic collaboration project aims to develop and produce seven tangible prototypes responding to complex contemporary scenarios. The project fosters transdisciplinary collaborations and new encounters between sciences and the arts.

By Vera Sacchetti

From 2020 to 2023, the scientific and artistic collaboration *Driving the Human* develops seven prototypes that envision new, more sustainable ways of inhabiting the planet. The project is supported by the German Federal Ministry for the Environment, and led by four partner institutions with diverse, complementary profiles. *Forecast*, the project initiator, has honed a methodology of transdisciplinary collaboration. The German National Academy of Science and Engineering, *acatech*, brings a connection to the sciences and a large knowledge network. The same can be said of ZKM | Center for Art and Media Karlsruhe, a renowned institution with significant global impact on the arts. Lastly, the Karlsruhe University of Arts and Design brings specific expertise with their Bio Design Lab – a design laboratory focusing on local resources, production, and biomaterials – while offering an educational component. In its goal to develop answers to complex contemporary scenarios, *Driving the Human* relies on the knowledge and skills of the partners' combined networks, which immensely enrich its developments and outcomes.

Following its first public presentation in November 2020, *Driving the Human* launched an open call, inviting designers, artists, scientists, and other multidisciplinary agents to engage with these knowledge networks and multidisciplinary know-how, in order to develop future-proof concepts and test them as prototypes. The seven final prototypes can materialize in different ways: From walk-in room installations to designed objects, architectural mock-ups to interactive games, video works to performances, among others.

Throughout the duration of the project, the community of participants, experts, and the larger audience that *Driving the Human* brings together will explore diverse phenomena such as the social impact of global warming, energy cycles and technology-driven disruptions, the impact of collective decision making, and contemporary processes of exchanging values and objects. The results of these explorations have been shared and com-

municated in several events along the way. The ultimate goal of the initiative is, through the seven prototypes, to create tools that enable new ways of envisioning and inhabiting the world.

## Blueprints for collaboration between science and the arts

At the core of the project is what *Forecast's* artistic director Freo Majer has described in 2021 as “the question of how innovation processes can be successfully shaped.” “We no longer need to discuss the fact that silo thinking is a hindrance to this. Everyone knows this and has taken up the cause of what we call non-disciplinary work,” he pointed out at the time, in conversation with Martina Schraudner of *CeRRI/Fraunhofer Institute*. “But it is surprisingly difficult to implement it. Particularly when it comes to existential threats such as climate change or the extinction of species, polemics, truisms, and enemy stereotypes tend to be a hindrance.” (Majer/Schraudner 2021)

Majer and Schraudner noted how real collaborations between the sciences and the arts have hardly existed up to this point. Nevertheless, they display real potential to “develop common tools for the innovation process”. Schraudner expanded how “art and science ‘know’ each other, they talk to each other, they use each other from time to time, but the relationship has not yet developed to its full potential.” “When it comes to discussing how we want to live, the arts pursue a different approach,” she pointed out, noting this is precisely the kind of knowledge needed for the sciences. As for *Driving the Human*, she declared to “hope for new impulses in science and business, new topics that are worth thinking about, and new methods that can be used to break down silos; methods that force us to talk about topics in an explanatory way, to no longer take anything for granted.”

## Launching an idea and inviting contributions

In its ambitious three-year timeline, *Driving the Human* was structured in several stages. Firstly, the project had an official kick-off in November 2020, framing its ambitions around the urgencies of our present moment time. Hosted by ZKM | Center for Art and Media Karlsruhe and Karlsruhe University of Arts and Design, the event took place at the heart of the second wave of the COVID-19 pandemic and thus manifested as a fully digital event, broadcast from Karlsruhe to the world.

The host institutions invited scholars, artists, designers, and other multidisciplinary participants to launch a debate on the

themes currently defining our existence – from the human to non-human, from existence to co-existence, from digital to analogue. The program brought inspiring speakers and visionary voices to the fore, in search of the constructive frictions that define our contemporary moment. Participants included scholars Bogna Konior and Sarat Maharaj, journalist Guillaume Pitron, artists Jenna Sutela and Jeremy Shaw, philosopher John Thackara and economist Richard D. Wolff, among many others.

The choice of host institution was also purposeful, as ZKM and Karlsruhe University of Arts and Design were then hosting programs that strongly aligned with the intentions of *Driving the Human*. Notably on display at ZKM was the exhibition *Critical Zones: Observatories for Earthly Politics*, conceived by noted scholar Bruno Latour and ZKM director Peter Weibel. “The critical situation of the Earth leads to the necessity to find different ways to deal with it constructively,” the exhibition posulated, noting how it aimed to “discuss the current ecological and socio-political challenges of our time and to explore new forms of coexistence of all forms of life.” (Critical Zones 2020)

This fertile basis for the official launch of the project allowed *Driving the Human* to better define the framework for its following stage: An international open call that ran from February 10 until April 9, 2021. The call welcomed visions to shape sustainable and collective futures that combined science, technology, and the arts in a transdisciplinary and collaborative approach. It received 1013 applications from 99 countries. Following this large expression of interest, the project’s jury was tasked with selecting 21 ideas that could advance to the next stage of the project.

### From 21 visions to 7 prototypes

The 21 selected concepts presented a diverse, multi-geographic understanding of our contemporary moment. Ranging from a variety of geographic and cultural backgrounds, they engaged with entanglements between technology and nature, artificial intelligence, circular economy, new modes of production and exchange of knowledge, indigenous knowledge, and more-than-human perspectives from the bacterial to the interplanetary. The jury aimed to include “diverse geographies and perspectives, in constellations that represent a multidisciplinary attitude and a willingness to collaborate and exchange knowledge.” Overall, the selected concepts reinforced perspectives where collaboration and interdependency become essential, determining factors for life and survival on our planet.

The 21 concepts were invited to display their visions as part of a three-day festival. Hosted by *Forecast*, *Driving the Human: 21 Visions for Eco-social Renewal* took place in Berlin from October 15–17, 2021 as a hybrid event combining a physical, on-site dimension and an online broadcast. Through immersive experiences and interactive installations, readings, screenings, performances and conversations, the festival opened up many ways to explore the different ideas at its core. Visitors could meet the authors of the 21 concepts. A cohort of international

experts – Susanne Kadner, Vera Meyer, Anne-Catherine Robert-Hauglustaine and Biao Xiang, among others – offered unexpected, enriching perspectives on the festival’s themes, which ranged from AI to biomaterials, and from circular economy to social anthropology.

The spatial experience, and the testing of each concept with a live audience are an important part of the *Driving the Human* methodology, allowing visitors to grasp their potential and potential future impact. Following the event, the *Driving the Human* jury selected seven concepts to proceed to the last stage. These are: Do AIs Dream of Climate Chaos (Xiaoyu (Iris) Qu 曲晓宇); Human-Bacteria Interfaces (Anne-Sofie Belling, Bea Delgado Corrales, Romy Kaiser and Paula Nerlich); Monsters and Ghosts of the Far North: Towards An Inclusive Cartography (Andra Pop-Jurj and Lena Geerts Danau); Sedekah Benih (Vincent Rumahloine and Mang Dian); The Backpack of Wings: Modern Mythology (Hyeseon Jeong and Seongmin Yuk); TRONS ‘R’ US (Akwas Bediako Afrane); and Virtual Sanctuary for Fertilizing Mourning (Eliana Otta).

### Nourishing the projects: Research, guidance, mentorship and exchange

Since the selection, *Driving the Human* has continued to nourish the progress of the seven prototypes, creating connections and offering guidance, mentorship, and knowledge exchange. In this sense, *acatech* hosted two important mentoring events, in December 2021 and April 2022, in order to further advance the development of each prototype. At the core of the mentoring events was the encounter between artists, scientists and various experts, in workshop sessions or one-on-one conversations. These sessions were crucial to enrich and chart each projects’ development, which continued throughout 2022. On November 25–27, 2022, the seven projects will unveil their development to the general public, materializing as prototypes for new ways to co-inhabit on the planet. This upcoming event will take place in Berlin and will mark the climax of *Driving the Human*. The project will then conclude in spring 2023 with the launch of a publication.

### Looking closer: Human-Bacteria Interfaces

One of the transdisciplinary project teams at the core of *Driving the Human* is behind the project *Human-Bacteria Interfaces*. The team of designers, technologists and an environmental microbiologist – Anne-Sofie Belling, Bea Delgado Corrales, Romy Kaiser and Paula Nerlich – are researchers from the *Hub for Biotechnology in the Built Environment (HBBE)*, Newcastle, UK. “Human-Bacteria Interfaces introduces the novel concept of human-bacteria interfaces within the context of the built environment, examining how multimodal interactions between humans and microbes can elicit novel ways for humans to ‘meaningfully’ collaborate and coexist with the nonhuman within the built environment,” the team advances. “Specifically,

HBI are tangible, living interfaces consisting of microbial consortia that interact or respond to stimuli from their surroundings by emitting signals accessible to humans through touch, smell and sight,” they explain. “These living interfaces are envisioned as part of an ‘ambient living intelligence’ as they respond and interact with the rhythm of its human inhabitants and surroundings.” (Human-Bacteria Interfaces 2021)

Throughout the course of the last year, the team has been working both in the lab and in the workshop, preparing a large-scale installation that can showcase the potential of this innovative way of perceiving and conceiving our built environment, to be displayed at the upcoming *Driving the Human* festival. Simultaneously, they have been in contact with experts from diverse backgrounds, and hosted a recent summer workshop at the Bio Design Lab in Karlsruhe. There, they explored the microbial world that is within and around us, and engaged with new understandings of the value for not only human health but the health of all ecosystems and species, living and non-living.

### Looking closer: The Backpack of Wings: Modern Mythology

The artists Hyeseon Jeong and Seongmin Yuk, studying at the *Academy of Media Arts Cologne*, are the authors of *The Backpack of Wings: Modern Mythology*, a speculative exploration of the intersections and overlaps between bio-geo tracking technology for wild animals in scientific fields and animism in seismic disaster myths in East Asia. “Since ancient times, whenever a natural disaster strikes, people report that ‘animals knew it beforehand,’ a belief related to animals as spiritual beings,” Jeong and Yuk point out. “As telemetry systems evolve, this animistic belief is transformed into data by calculating, analyzing with biologging on the animal body; moreover, the animal-behavior data enables forecasting upcoming nature events.” (The Backpack of Wings 2021)

Jeong and Yuk explain how “this current transformation allows us to question the redefinition of relationships between human beings and animals: How far is the intervention of human beings into nature acceptable? Will the animals be perceived as essential members of human society?” These questions were the starting point of their project, which proposed a sci-fi film dealing with these issues. Since then, Jeong and Yuk have deepened their interest on the scientific aspects of bird migration, working closely with researchers at the *Max Planck Institute of Animal Behavior*. Simultaneously, they have been conducting a variety of workshops on the idea of Sensory Networks at cultural institutions in Germany and abroad, allowing these different experiences to impact the results of what they will bring to the upcoming *Driving the Human* festival. Their project is born out of a hybrid approach; and their initial fascination with limits, implications and future usage of animal tracking data, gives way to a sci-fi lens to unfold new worlds in relation to the present moment, speculating on the inner worlds of the tracked birds.

### How can the arts and sciences collaborate?

These two projects showcase different ways in which sciences and the arts can collaborate. They are, however, only two of seven different prototypes, each one with their own approach to transdisciplinarity, themes that define the present, and ways to engage with them. As *Driving the Human* enters its final stage, it is still early to draw conclusions, but it is clear there are no single solutions to the complex issues faced presently. Throughout the development of *Driving the Human*, the project has embraced openness in ways of collaborating and of welcoming transdisciplinarity in its many forms.

As we seek to overcome an understanding of the world that is based on binaries and (subjective) objectivity, it is clear it is important to be open to the methods used by all disciplines, and embrace them whole-heartedly. As Vera Meyer (1), one of the invited experts of *Driving the Human*, has stated, “the more open we are, the better we get.” (acatech 2021) The ambition, as the project draws to a close, is to have a clearer picture of the world we would like to live in – bringing together the different visions of artists, scientists, engineers through exchange, collaborative world-building, and implementation.

#### Annotation

[1] Vera Meyer has also co-authored a paper on the collaboration between scientists and artists. See Rillig, M./Bonneval, K./Lutz, C./Lehmann, J./Mansour, I./Rapp, R./Spačal, S./Meyer, V. (2021): Ten simple rules for hosting artists in a scientific lab. PLOS Computational Biology. doi: 17.e1008675.10.1371/journal.pcbi.1008675.

#### References

Majer, F./Schraudner, M. (2021): Driving the Human Open Call: Ideas and concepts for shaping the future. <https://en.acatech.de/allgemein/driving-the-human-open-call/>  
 Critical Zones (2020): Observatories for Earthly Politics. <https://zkm.de/en/exhibition/2020/05/critical-zones>  
 Human-Bacteria Interfaces: <https://drivingthehuman.com/prototype/human-bacteria-interfaces/>  
 The Backpack of Wings: Modern Mythology. <https://drivingthehuman.com/prototype/the-backpack-of-wings-modern-mythology/>  
 Acatech (2021): How openness creates new ideas. <https://en.acatech.de/allgemein/art-and-science-how-openness-creates-new-ideas/>

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