6 How would animals and architects co-design if we built the right contract?

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Design in crisis?

In the last decades, mounting evidence has put the harsh prospects of multifaceted environmental crises of anthropogenic origins on various activist and public agendas. In the fields of architecture and urbanism, cities and practitioners have responded to this challenge by searching for more sustainable materials, more effective technologies, and more sustainable business models. Yet, recent conversations in the field of architecture and urbanism, such as the ones around the "Critical Care" exhibition at the *Architekturzentrum Wien* (Fitz & Krasny, 2019), suggest a displacement of the conventional focus on mitigation and adaptation measures towards the question of "how architecture and urbanism can help to care for and repair a broken planet." The language of care and repair, as an alternative to that of adaptation and mitigation, has many important consequences for how design and architecture position themselves today.

One important lesson is that global climate or the planetary crisis might not be the right scales for care and repair practices. There is no universal unit of commensurability for ecological care, as the trading of CO_2 emissions demonstrates. There is not "one" planetary crisis, but a superposition of situated crises, each unfolding at different scales and speeds, affecting specific human and non-human bodies, and requiring different, often contradicting forms of care and repair. Another consequence is the need to ask about the role architecture or design itself has played in the production of a catastrophic present. This is not a matter of pure self-flagellation or public derision, but it entails asking how to readdress the practices of architecture.

Similarly, our starting point is that what needs to be put in crisis is the very practice of design. The key question designers and architects have to address is not simply how to design more sustainably or more ecologically or in a more participatory way, but how to imagine other ways of undertaking architecture and urbanism to take care of the entangled lives of many species they necessarily have an effect on. This goes well beyond Latour's 2011 dictum that design is always redesign – that is, critically engaging with previous orderings and arrangements and creatively developing new ones better

attuned to the present and the future. What seems to be at stake is not the redesign of architectural forms and urban landscapes, but the redesign of urban design and architectural practice themselves.

Accordingly, we approach this volume's exploration of "design for a more-than-human future" from the side, presenting a collective speculation about "futures enabled by more-than-human design." The more-than-human, we reckon, needs to be more than the content of a design brief. It is rather an opening to other-than-human capacities in co-design processes and, with that, to the unpredictabilities resulting from terrestrial and multispecies interdependencies. Yet, the task of "multispecies" care, repair, and maintenance of extremely fragile ecological dynamics is not devoid of ambivalences and problems. As Schroer, van Dooren, Münster and Reinert (2021) discuss, a "multispecies" approach to such care cannot fall back to a do-gooder attitude but needs to "interrogate the broader dynamics of power, understanding, and resource use that shape which modes of life and being are fostered, are rendered worthy of and legible to dominant regimes of care, and which are abandoned or disavowed." Such a concern also needs to include a decisive component of trust in and knowledge about non-human animals' own regimes of and abilities to care (Remter, 2021).

How to care, then, in architectural practice for terrestrial and multispecies entanglements? In this chapter, we provide no guidelines or general principles of practice to do so. Our offer is a story of collective experimenting and learning based on a question: what if we sought to relearn how to practise architecture from animals? By exploring this question and by telling this story, we aimed at circumventing two more conventional gestures: helping out animals survive in our contemporary urban environments – like advocates of *Animal-Aided Design* propose (Hauck & Weisser, 2015); or treating animals as "food for thought" about architectural practice, as Juhanni Pallasmaa (2002) has done in his groundbreaking *Animal Architecture*. Following STS and environmental humanities multispecies concerns, we pursued a different avenue: approaching urban animals as epistemic partners for rethinking architectural practice, thus engaging their capacities in attempts at *designing with* (rather than "for" or "from") them.

Beavering architecture?

In the winter of 2017–2018, we taught in the master's program in architecture at the Technical University of Munich the third installment of a series of studio courses called "Design in Crisis." Our main idea was creating conditions for "suspending" the practice of architectural design and pushing students to explore other ways of relating architecturally to issues, such as disasters and humanitarian crises, as well as bodily diversity and accessible infrastructures (Farías & Criado, 2018). The course "Design in Crisis 3: Sensing like an Animal" aimed to imagine a multispecies practice of transforming

urban landscapes. We were greatly inspired by Despret's question "What would animals say if we asked the right questions?" (2016), as well as by the answers she provides: stories of animal agency in a wide variety of situations, including experimental settings, thus disputing the machinic concepts with which they are treated in ecological and ethological thought.

The course began with four weeks of intense sensory experiments aimed at apprehending and interacting with the urban landscape "like an animal." The aim was not to simulate animal perception in order to substitute the experience of the architect – as though that would be possible – but rather to invent practices and artefacts that would challenge conventional sensory practices of architects, as well as better understand the speculative challenge of sensing like an animal. We took as our guides three animals – ants, dogs, and beavers – and we asked our students to thoroughly document their experiences (many times difficult to understand in the heat of the moment) through memos, videos, models, and other devices.[1]

In the case of ants, the sensory challenge was how they relate to space without visual perspective. For a whole rainy day in Munich's Maßmannpark, blindfolded students had to learn to act and survive as an ant colony of sorts: launching expeditions and learning to orient themselves without getting lost, finding items in the landscape they required to build a shelter, moving collectively, and learning to build a safe shelter under a playground's slide. All with the sole help of their bodies, their voices, and some umbrellas (bodily extensions and building material at once), we had placed them randomly in their surroundings. Their subsequent task was to create a how-to guide for exploring space and building like an ant so that other architects could also experiment how to move beyond the ocularcentrism of architectural knowledge and practice.

Another day we sought to learn how dogs practise and know urban space by means of two exercises. Firstly, we walked and were walked by two of them in a stroll in Munich's Hirschgarten. After this, we used a furniture roller (aptly called in German *Hundt*, a homophone of the word for dog), in order to move around urban space in quick abrupt movements, sniffing and observing the city from a dog's point of view. After a long day of moving around with and like dogs, we asked students to build a model or a device that would document and translate how dogs experience space.

After four weeks, we developed the brief that would guide the rest of the course. For this, we took as a starting point the third animal we also had been investigating: the beaver. We undertook a day-long site visit to a hotspot area of conflicts with beavers in the North of Munich. There we met the *Biberbeauftragter* (literally, the beaver representative) of Bavaria, who explained that beavers had historically lived in the basin of the river Isar before they had been hunted down to the last in the 1860s. Later, the river was thoroughly channeled in a series of landmark modernist infrastructural interventions at the turn of the 20th century. Beavers were reintroduced in Bavaria in the 1960s, hailed as "biodiversity experts" capable of

intervening landscapes and creating ecological niches for large numbers of species. However, their return to Munich had not been devoid of conflicts with urban dwellers and those in charge of planning and maintaining the urban green infrastructure of Munich.

These frictions became stronger after the municipality engaged in a series of endeavors to "renaturalise" the Isar river basin. Ever since, the frictional encounters of humans and beavers have routinely featured in local media, displaying a wide variety of modernist approaches to said "renaturalisation": for instance, "conservationist" attitudes to beaver population management (Bayerisches Landesamt für Umwelt, 2009) but also enraged reactions in which beavers taking ornamentally placed trees or causing floods are conventionally framed as "destructive behavior" or as a problem, leading urban authorities to protect trees with mesh wire or other lasting infrastructure.

This latter development was at the core of the brief: students should develop a "late entry" for the public competition that took place in 2003 for the renaturation of the Isar river basin in the city of Munich. However, and this was the only obstruction we put on their way, they needed to do it "like a beaver's contractor." With this brief, accompanied with a set of readings on more-than-human approaches to design and environmental humanities (Ingold, 2000; Rice, 2018; van Dooren and Rose, 2012), we wanted to push the students towards questioning the anthropocentric premises of their design practices. This seemed to us a relevant problem, because if the challenge is to undo the anthropocentric logic that has led us to the Anthropocene, and if architecture has had its part in it, then the question is: what elements of architectural and urban practice should be put on hold or in crisis – and what opportunities, visions, or inventions can emerge with such a crisis?

Yet, the first project ideas that emerged were not what we were expecting. After conducting a fairly detailed analysis of beaver presence in the river basin, as well as the forms of conflict and cohabitation associated with it, students had identified two sites that they intended to renaturalise, in order to ensure a peaceful co-existence between beavers and humans. After our criticism that such a proposal involved designing *for* the beavers, but not *with* them or even *authorised by* them, we reached a major moment of crisis:

> "If you don't like our solution, tell us how you would respond!"
> "The brief is an oxymoron: it is not possible to design like a beaver!"
> "What's the point of doing a design studio course, in which we can't design? What will I put into my portfolio?"

The crisis led to a potential solution:

> Since you have concluded that it is not possible to design like a beaver, perhaps one option to evaluate is to think about the beavers as your client. But if you opt for this option, what we will ask you is to first design a contract that authorizes you to design on behalf of the beaver.

But how to think of a contract by which the beavers would transfer to architects the right to speak and design on their behalf? The problem was just as complex, if not more so, than the initial one – and it was a problem we were all in: students and instructors.

The French philosopher Michel Serres came to our aid, and we devoted a session to a discussion of his premonitory book *The Natural Contract*: one of the first to address the philosophical–political implications of the ecological-planetary crisis. In it, Serres poses the question of how to establish a contract that would put an end to the relations of violence between a humanity turned into a geological force and the planet, that is, between humans and non-humans. In a crucial passage, Serres (1995: 51–55) explores the origins of contracts and the binding effects associated with them, by paying attention to the Egyptian figure of the *harpedonaptai*: the royal official who after the ascents of the Nile visited the flooded lands and, with some ropes of cord, marked the territory and re-established the relations of property. In its origin, Serres observes, the social contract was not a written document but a bond that binds: a material device that unites and separates, marking a territory in more permanent ways than words, capable of establishing more or less univocal relations between the land and humans, between territories and its owners. It was then clear for us that the contract we needed could well be an object or an artefact that establishes a material, physical, or bodily connection between the parties involved – the humans and the non-humans or, in our case, the students, the beavers, and the inner-city Isar.

To incite a conversation about how to create a physical bond with a non-human partner, we invited the designer Thomas Thwaites to give a public lecture and talk with us and our students in class. Thwaites (2016) had recently published an interesting speculative project called *Goat Man*: in an attempt at "taking a holiday from being human," he took a whole year to learn how goats move and eat; to that end, he designed an intricate exoskeleton with the help of natural scientists and engineers and, later, tested it for a week trying – and failing – to live among goats in the Swiss Alps.

The project sparked very relevant discussions with our students: rather than thinking of it as a "design solution" mimicking how to approach living like a goat, we foregrounded how it had helped Thwaites materialise an interesting design research question, learning about these animals' physiology and functionality through his own practice. Up to that moment, students had been learning about non-intrusive approaches to human–beaver communication commonly used in land management: electronic speakers or tubes creating sounds of water flows are used to incite beavers to build at particular locations, pipes that do not produce any noises are used to drain beaver dams, and scents emulating *Castoreum* are used to signal territories already occupied by other beavers. Thwaites' practice was critical for developing a more embodied approach to the contract with the beavers. The question now was not how to engage in a more embodied co-design practice.
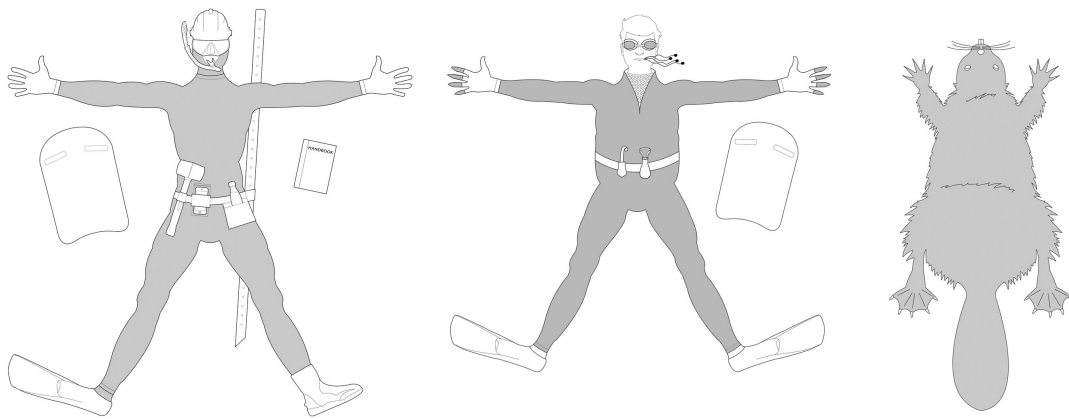
Figure 6.1 Co-worker suit (left) and beaver experience suit (right). CC BY 2017 Katharina Meenenga, Laura Krohn, Marie Van Tricht, Pedro Racha-Pacheco, Seppe Verhaegen, and Victoria Schulz. Used with permission.

Source: https://thedesignincrisis.wixsite.com/designincrisis/submission.

The proposal developed by the students entailed equipping architects to create conditions for encountering and negotiating with beavers in a shared environment. The proposal consisted in two suits (Figure 6.1):

a A *beaver "experience" suit* (including gloves with claws, scissors and cutters instead of teeth, and dark glasses to simulate beavers' poor vision and stimulate the use of our other senses), designed for architects to de-learn the anthropocentric and ocularcentric approaches to design in experiencing other ways of relating to the environment;

b A *co-worker suit* (including a bottle with odors to negotiate in situ which trees not to cut, tubes that amplify the sound of the water and "ask" the beavers to intervene in a certain place, and other tools), designed to collaborate with beavers in the renaturalisation of the basin of the river Isar.

The suits-as-contracts made emerge manifold doubts and conversations: did this proposal imply that whoever wore these devices could – finally – feel authorised to start redesigning the Isar river basin on behalf of the beavers? Could it eventually lead to a renaturalisation project without the beavers' own expertise and knowledge in rewilding and fostering river biodiversity? The more we got involved in thinking about these suits, the more evident it became that for any design contract enabling beavers and architects to co-design, what had to be worked on were also the devices enabling those negotiations. So, what if such a co-design enabling suit and the material processes of *contracting* were turned into the very proposal for the "late entry" for the renaturalisation of the Isar river?

Understanding that the contracting process was the renaturalisation project led to a proposal that used the river basin as a space where to create a bond or, better, a binding co-design commitment between humans and beavers. Once this was established, students devoted themselves to prototyping the procedures and the institutional setting for such a project to continue developing in the future. This included a series of protocols on how to use each of the suits and tools (see Figure 6.2); protocols that were integrated in a *Plan of Diurnal and Nocturnal Action and Reaction* (see Figure 6.3); as well as the blueprint for a River Biodiversity Union, a river management institution created to ensure the implementation of the plan. These institutions were critical for how students imagined "the society of the future, in which different species work together and co-design in the city."[2]

Towards a multispecies architectural practice?

In closing, we would like to point out some lines of tension for a multispecies architectural practice that this experience helped us delineate. These involve three aspects that might need to be contrasted and further developed in the future.

1 *From design solutions to contracts as negotiation devices for joint problem-making*: Architects tend to express their expertise in designing objects proposed as solutions to well-articulated needs, wishes, or demands. This premise has no currency for more-than-human design: animals (and most humans too) are not capable of articulating problems in the language of architects. What is needed are modes of continuous joint problem-making. In this chapter, we introduced the notion of the contract to redefine the space in which architects might need to learn to correspond *in the present* with other human and non-human beings. What needs to be designed then is the very process of contractual negotiation: that is, the appropriateness and capability of designing with someone or in someone's name.
2 *From users to clients and co-designers:* Although approaches like Animal-Aided Design have considered animals as "end users" of architectural practice, what if this figure was not helpful to open up design to the non-human? In this chapter, we explore what it entails thinking of non-humans as "clients" and "co-designers." The client is a figure mostly invisibilised in architectural literature, even though it often acts as a full-blown co-designer intervening in all phases of design (see, e.g., Cuff, 1992). We think that by conceiving animals as powerful clients or as expert co-designers, rather than as subaltern users, a different architectural practice can be invented, engaging the beavers' abilities to make environments and hence develop more-than-human modes of co-design.
3 *From impartial arbiters to designers as committed partners*: Designers are often imagined as having to arbiter between (too) many incompossible requirements and demands, developing compromises between the
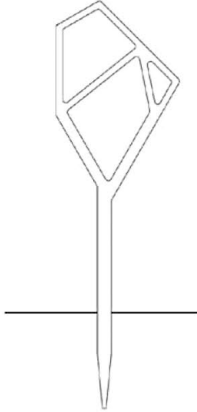
PROTOCOL N°6
ARTIFICIAL TREES

This document comprises the funtions, design and terms of use of Artificial Trees and becomes effective if signed by the River Biodiversity Union and approved by the beavers over a period of three months.

§1 Function
1) Providing sustainable dam material
2) Avoiding deforestation of a beaver active area

§2 Design
1) Sticks of 1-5 m length
2) Material: reused/recycled timber or organic, compostable material
3) All components need to be robust and ment to last over and under water for a minimum period of one year
4) No sharp or hard materials such as glass or metal
5) Max. weigth of one object: 10 kg

§3 Terms of Use
1) Distributed and fixed by employees of the River Biodiversity Union
3) Location:
    a) In areas with beaver action or possible future beaver action
3) Instructions:
    a) Use Co-Worker-Suit according to PROTOCOL N°3
    b) Implant objects in a maximum distance of 10 m to the river
    c) Work during the day and remove all signs of a building site (f.e. trucks, not yet implanted trees or tools) before dawn

Agreed and accepted:
River Biodiversity Union

By: _____
    An Authorized Signer

Federal I.D.
Number: _____

Date: _____

Beavers **agree** legally by:

Integrating at least 30% of the Artificial Trees in their territory into the dam or lodge within three months

stamp here

Beavers **disagree** legally by:

Integrating less than 30% of the Artificial Trees in their territory into the dam or lodge over a period of three months

stamp here

Figure 6.2 The last protocol.[3] CC BY 2017 Katharina Meenenga, Laura Krohn, Marie Van Tricht, Pedro Racha-Pacheco, Seppe Verhaegen, and Victoria Schulz. Used with permission.

Source: https://thedesignincrisis.wixsite.com/designincrisis/5-weeks.
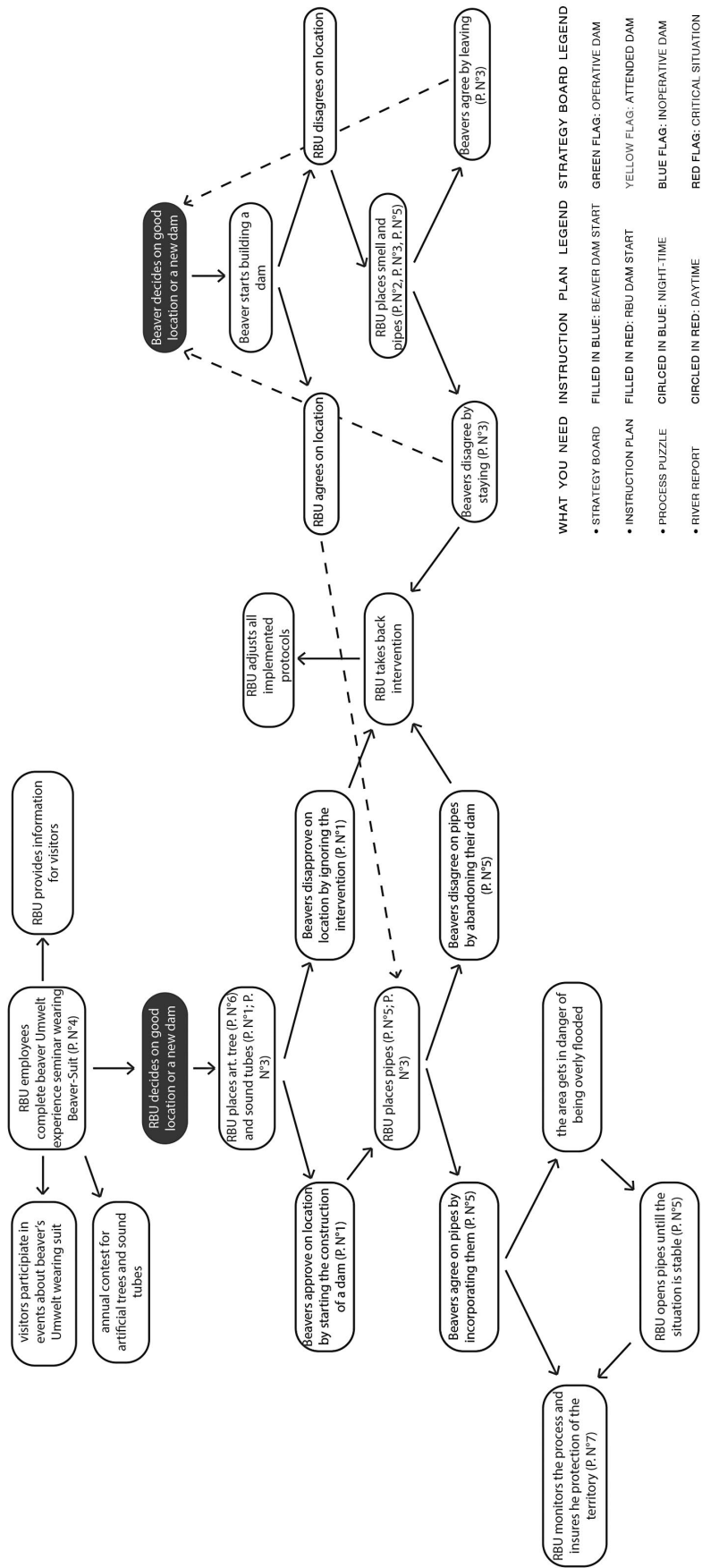
Figure 6.3 Action and reaction plan. CC BY 2017 Katharina Meenenga, Laura Krohn, Marie Van Tricht, Pedro Racha-Pacheco, Seppe Verhaegen, and Victoria Schulz. Used with permission.

Source: https://thedesignincrisis.wixsite.com/designincrisis/5-weeks.

technical and the political, the social and the economic, and the ecological and the aesthetic dimensions of a project. A multispecies architectural practice requires radically overcoming that figure: no longer an impartial arbiter but a partner committed to creating conditions for more-than-human co-design. Indeed, if the great challenge that the Anthropocene imposes on architecture is precisely the need to incorporate non-human animals, their capabilities, expertise, and perspectives, this entails transforming architectural practice: becoming sensitive to the practices and perspectives of other-than-human life and non-human animals, in particular, exploring how to engage with their issues and, more importantly, learning to take their side.

Notes

1 As a result, students Katharina Meenenga, Laura Krohn, Marie Van Tricht, Pedro Racha-Pacheco, Seppe Verhaegen, and Victoria Schulz created this blog: https://thedesignincrisis.wixsite.com/designincrisis.
2 For which they created a corporate identity and a website of its own: https://riverbiodiversity.wixsite.com/union.
3 A complete guide including all protocols and designs can be found here: https://45d6c820-55c0-421b-8a7f-2b58f56d5dac.filesusr.com/ugd/091edb_876526354dbd4f4faa38b7eac2e02129.pdf.

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