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What does a 'good' river look like? Sustainability and aesthetics in river restoration

Abstract

Today, keywords such as sustainability are at the core of societal debates and political conflicts about pressing global water-related environmental issues. These and other terms are brought into play as (e)valuating, explanatory or legitimizing categories or as desirable goals when it comes to questions about how humans do or should relate to watery environments. I examine these valuation and negotiation processes by looking at river restoration in Switzerland and Europe and ask how sustainability is 'made' in practices, e.g., how it is enacted and how, thereby, this omnipresent but often un-reflected value is actually imbued with meaning. My focus in this paper lies on media discourses and representations within river restoration and the aesthetics with which sustainability is evoked: How is sustainability, how is a 'good' river supposed to look like in these water-related utopias and how are they represented (visually and otherwise)? After giving an overview of my theoretical approach and presenting my general research interest regarding the field of river restoration, I investigate these questions by analysing three case studies.

Keywords: River restauration, Sustainability, Aesthetics, Anthropology of water

Introduction

In the Anthropocene, keywords such as sustainability are at the core of societal debates and political conflicts about pressing global water-related environmental issues. These and other terms are brought into play as (e)valuating, explanatory or legitimizing categories or as desirable goals when it comes to questions about how humans do or should relate to watery environments. In such debates, descriptive categories become normatively charged and socially negotiated values. Claims about natural environments rely on rational and scientific evaluations and quantifications as much as they are always valuated culturally, socially, politically, ethically, emotionally and aesthetically. Together with connectivity, diversity and security – all terms that can equally be understood in ecological and social dimensions – sustainability acts as a reference point that enables actors to refer to positively framed future developments of both natural environments and hu-

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man communities. Taking the case of river restoration projects' media presence, in this paper I look at the question of how sustainability is visually and aesthetically represented, e.g., what it is made to look like in practices. This, then, can give us a hint at how this omnipresent but often un-reflected value is enacted and how, thereby, it is actually given a form and imbued with meaning.

My broader research interest for human-water relations and the values, spaces and socialities that derive from hydro-social entanglements arose after finishing my doctoral thesis on the return of wolves in Switzerland when applying for different Postdoc funding schemes a few years ago. This is why this paper, which emerged from a quite early stage of my research, has a somewhat more overview- and outlook-like character. Thus far, the focus of my research lies on media discourses and representations within river restoration and the aesthetics with which sustainability is evoked. Critically analysing digital and analogue media such as websites, videos, photographs and physical publications, I ask how sustainability, how a 'good' river is supposed to look like in these water-related utopias and how they are represented (visually and otherwise). In this paper I investigate these questions by analysing three case studies. Before doing so, I will give an overview of my theoretical approach and present my general research interest regarding the field of river restoration.

Overview of (my) Anthropology of Water

From a cultural anthropological point of view, water is always embedded in social and cultural networks of practices and meaning (Hastrup 2013; Strang 2004; Wagner 2015), but must also be considered in its materiality and constructive agency (Strang 2014). Anthropologists Franz Krause and Veronica Strang note: 'Rather than treating water as an *object* of social and cultural production – something produced through social relationships and imbued with meaning through cultural schemes – we consider water as a generative and agentive *co-constituent* of relationships and meanings in society.' (Krause/Strang 2016: 633, highlighting in the original) I adopt this approach for myself in the sense that, on the one hand, I understand water as a symbolically charged cultural construct, but at the same time I also focus on what water does to us humans and in what way it helps shape society.

Another principal anthropological notion is that waters are always plural, meaning that they vary not only in their physical appearance, but also in the meanings and values that are co-constituting, as well as in the social and political contexts they are valuated in. A river that is economically used to produce electrical power is not the same river when it is framed as home to an endangered animal species and therefore restored or a river experienced as the site of daily human recreational activities. Speaking with Heraclitus, one cannot enter the same river twice, neither physically nor epistemologically. Πάντα ῥεῖ.

Waters are spatially relevant and agentive entities. With their ever-shifting shapes, edges and meanings, water bodies both divide and unite spaces and people (Haines 2013, 2017; Roth 1997; Krause 2016). Water bodies can be understood as sites that bring people together on ocean beaches, lakeshores and riverbanks, in coastal holiday locations and city centres (Whyte 2019; Bowles/Kaaristo/Caf 2019; Roberts 2019). Political anthropological perspectives on damming projects focus on how labour, capital and energy are generated through water and how, concurrently, communities are displaced and social injustice is deepened (Hidalgo-Bastidas/Jellema/Cremers/Narváez 2017). Against this general backdrop there are two strands of anthropological engagements with waters that I connect with more closely: more-than-human anthropology and valuation studies.

Waters and more-than-human anthropology

From a more-than-human anthropological perspective, water bodies are 'multi-species landscapes' (Tsing 2012), trans-species 'contact zones' (Haraway 2008) where humans, other living beings and physical entities mingle and get entangled. Not only do humans imagine, channel and use water, but rivers and other water bodies also touch and influence humans. And they do so in numerous and such profound ways that it is impossible to conceptualise or understand neither humans nor waters without paying close attention to these interrelations (Haraway 2003, 2008; Kirksey/Helmreich 2010; van Dooren/Kirksey/Münster 2016). In this aspect I follow Anna Tsing who famously noted that '[h]uman nature is an interspecies relationship.' (Tsing 2012: 144) Drawing and expanding on Eduardo Kohn's 'anthropology beyond the human' (Kohn 2013: 7), I understand water bodies, comprised of and peopled by a multitude of living beings, as

entities with which this kind of interspecies relations are lived and become thinkable (see also Ingold 2013). Thus, in a prospective, more ethnographically focused research phase, I may take on a praxeological multispecies perspective that focusses on human inter- and intra-actions (Barad 2012) with waters and their other-than-human inhabitants and on the entanglements that coin their relational becomings.

Waters and valuation studies

A particular research interest relates to values and valorisation practices in the context of water bodies. Value is, of course, a central object of economy, but the meaning of this word extends far beyond economic contexts and contents: what we value has often nothing to do with money. Different attempts have been made in anthropology to grasp value in a strictly economic sense in its cultural situatedness (Graeber 2001; Angosto-Ferrández/Presterudstuen 2016), yet these are not the guidelines for my own research. Economy does play a part in the negotiations of water-related values in my project, but my perspective on these negotiations is not an economic anthropological one. I look at different facets of values, focussing precisely on non-economic practices of valuing. To do this, I turn towards the interdisciplinary research field of valuation studies.

Valuation studies denote valuation as 'any social practice where the value or values of something are established, assessed, negotiated, provoked, maintained, constructed and/or contested.' (Doganova 2014: 87) The understanding of valuation as a social practice allows and calls for a praxeological approach that analyses situated practices of valuing, valuating or evaluating. As an example: Frank Heuts and Annemarie Mol broach the question what a good tomato is by looking at how different groups of actors deal with tomatoes in different ways. With Heuts and Mol we thereby 'learn about valuing tomatoes *in practice*.' (Heuts/Mol 2013: 128) Valuation studies also consider the sociomaterial settings in which valuation practices take place, as Claes-Fredrik Helgesson and Fabian Muniesa note: 'These valuations are, moreover, often performed by highly complex socio-technical orderings involving several actors and instruments.' (Helgesson/Muniesa 2013: 3) This is something which can be applied for learning about various ways people (e)valuate waters in river restoration practices. Thus, with this focus on situated enactments, valuation studies serve

as a promising theoretical background for studying the various ways, modes and practices in which water-related values come into being.

River Restoration as a Research Field

In the last centuries, especially during the industrialization in the 19th century, watercourses were increasingly channelised, straightened and made navigable. This related to the idea of progressiveness and the euphoric belief in the possibilities of technology to tame wild nature and make it usable for man. During the second half of the 20th century, however, a turnaround slowly took place as ecological discourses gained strength. The goal of water engineering was seen less and less in the rigid and tight control of rivers, but increasingly focused – almost ironically – on the return to so-called 'near-natural' conditions of watercourses. Today's dominant water engineering paradigm consists in the idea that rivers should be able to change their course according to water levels, dynamically distribute their bedload and have sections with more and less flow. To ensure this, wide riverbeds, non-concrete river channels and banks, and flood zones are being built. These measures are supposed to contribute to flood protection as well as provide more diverse and structured habitats for aquatic life, but also attractive recreational areas for local residents. Today's river restoration, revitalization or regulation projects – as they are differently called according to their varying delineations – thus aim to reverse some of the anthropogenic influences (which are now negatively assessed), to restore water bodies to a supposedly more 'natural' state and thus to make them safer in terms of flood protection as well as ecologically and socially sustainable, connecting, liveable and diverse.

In this paper I will briefly discuss three river restoration projects in Switzerland and other European countries (AMBER: Europe; Rhesi: Switzerland and Austria; Aire restoration: Switzerland) and the ways they depict and promote their respective visions of water bodies. The projects are differently organised and have varying goals, scales and scopes, but share common features. Thus, with their spectrum they allow me to demarcate and substantiate my research field, all the while providing me with a variety of different aspects to examine. With this I hope to very roughly sketch out some promising lines of investigation.

Before I zoom into the empirical material, I would like to sum up my more general research questions: How are values such as sustainability, (bio)diversity, (bio)security and connectivity enacted within the different river restoration projects? How do the involved people actually create, design and bestow meaning on these values while interacting with the various waterbodies? And how are the waters themselves involved in the shaping of these values?

Simply put, I want to find out what the afore-mentioned values, and especially sustainability, exactly mean in the respective projects. On a more specific level, there are several questions that I pursue in this field: What do people do when they restore rivers? This question aims at the practices of (e)valuating and restoring rivers. Then: Why do people restore rivers? Here I want to find out about perceptions of a problematic status quo and other motivations for acting. Furthermore, I will address the question of how to restore rivers, so ask about knowledge, skills and techniques. Another related set of questions is: Which functions does/should a restored river fulfil and for whom? Who benefits from restoration and who doesn't? Here, I am also interested in identifying which more-than-human actors are included in these considerations and which aren't. Very important questions have to do with the aesthetics and the multisensory experience of river restoration: What does/should a restored river look like? And what does/should it sound, smell and feel like? And finally, on a more abstract level, I want to ask what kinds of landscapes, places and communities are (re-)created, strengthened or changed in river restoration processes. In this context, it will be interesting to know in which other (political) discourses river restoration is embedded. In this paper I concentrate on the question of aesthetics and (visual) representations of sustainability and other water-related values.

With regard to the four mentioned values of sustainability, (bio)diversity, (bio)security and connectivity, a first observation is that most river restoration projects tend to combine ecological, social, economic and other dimensions of these: The widely used term sustainability always seems to refer to the future of rivers and wildlife on the one hand and of humans on the other; many projects try to enhance ecological biodiversity, but also to bring together diverse people; security concerns reach from the protection of endangered species to flood risk mitigation; and lastly, most projects try to enhance both ecological connectivity for water inhabitants, such as fish, and social connectiv-

ity for people by strengthening local communities, bringing citizens in dialogues with each other and with scientists, as well as connecting locals more strongly with their natural environment.

Case study I: AMBER. Integrated Rhetorics and a Multifaceted Sustainability

This tendency to combine different facets regarding sustainability becomes quite clear in the first case study. AMBER stands for 'Adaptive Management of Barriers in European Rivers' and is an international, multi-institutional consortium including actors such as large hydropower businesses, rivers authorities, non-governmental organisations, universities and the European Joint Research Centre. The consortium's main objective is to manage European river barriers in the most effective way possible. Part of the project is a citizen science program where lay people can document barriers with a barrier tracking app and send the information to the project so that the barriers may be potentially removed or improved. As the project website states,

> AMBER seeks to apply adaptive management to the operation of barriers in European rivers to achieve a more effective and efficient restoration of stream connectivity. To do this, we are developing tools, models, and toolkits that will allow hydropower companies and river managers to maximize benefits and minimize ecological impacts. This will improve energy security, help protect jobs, and boost European competitiveness, particularly in rural economies.
> This project will also help protect global biodiversity in rivers by decreasing fragmentation, promoting habitat connectivity, and evaluating the merits of different restoration actions through developed tools.[1]

The barriers take a central – and ambivalent – role in the project's self-description. Barriers are seen to be fragmenting rivers and their aquatic habitats by blocking or cutting the water flow and the ecological connectivity and diversity that go with it. Nonetheless, there is no talk of taking all barriers away. Rather, as will become clear below, barriers are acknowledged as productive sites and the aim is not to eliminate them altogether, but to optimise their use. Through the barrier, some of the afore-mentioned water related categories, such

1 AMBER. 2020a. *About*, https://amber.international/about/.

as connectivity, security or biodiversity are addressed and it becomes quite clear, that the AMBER project wants to integrate and reconcile ecological and economical goals.

To analyse the project's rhetoric and the aesthetical means by which the project's objectives are being communicated more closely, I suggest having a look at the trailer for the AMBER campaign 'Let it Flow'[2]. I will present a sort of transcript of the two-minute-long video, following the written text that leads through the trailer. In the square brackets I describe the pictures that go along with the narration. The score consists of a repetitive, optimistic, happy soundtrack with electric guitar arpeggios, catchy piano chords and upbeat electronic drums. The video footage is mostly held in rather natural colours with the text in white letters and occasional white hand-drawn animations laid on top of it.

> Rivers are important to the world. [*a drone view on a broad blue river with green trees on both sides; in the background apartment blocks look out from behind the forest line; animated moving lines in the river accentuate the water's flow*]
> For nature [*close-up of a decaying leaf in a stream*],
> fish(ing) [*a fly-fisher fishing in a mountain creek*],
> ecosystems [*drone view on a small brook with bright green bushes around it*],
> and much more [*thick vegetation, partially reflected in shady water*].
> But many rivers are blocked by barriers. [*air view on a big river with sandbanks, forests, fields and human settlements around it; after a moment, symbolical barriers are drawn on the river*]
> More than 1 million [*drone view on a smaller creek with single trees, meadows and an offroad car beside it; an elliptic line is drawn around the words and radial lines extend like sun rays*]
> barriers are blocking European rivers [*drone flying over a big concrete dam with huge metal tubes and an industrial building*].
> Many are undocumented [*close-up of water running down a stone weir*],
> abandoned, old [*pictures of a smaller stone and concrete dam with rusty metal gearwheels*].
> But… barriers also provide [*drone flying over the outlet of a dam from which water is spraying downstream*]
> industry [*close-up of steam shooting out of a chimney, electrical wires in the background*],
> water [*close-up inside a drinking glass filled with water*],
> irrigation [*drone view on an agricultural vehicle on a huge, tawny field*],

2 AMBER. 2020b. *Let it flow*, https://amber.international/let-it-flow/.

energy production [*close-up of colourful lightbulbs*],
and flood protection [*drone view on a half-submerged blue rowing boat*].
Barriers need to be managed in a smart way. We need Adaptive Management of Barriers in European Rivers: [*drone flying over a huge dam, showing deep calm water above and effervescent water below the dam*]
to map all European barriers [*air view of a big stream and a dam system that divides the stream into a channel and a more natural river; three hand-drawn arrows point at the dam system*],
to remove old barriers [*the picture of the small stone and concrete dam shown before; the dam is crossed out with animated hand-drawn lines*],
and to improve existing barriers [*drone flying over a massive concrete dam with a very complex shape; some of the dam's contours are accentuated by animated lines*].
A project for everybody [*underwater footage of people swimming, filmed from the ground towards the surface, the last person shows a peace sign with their right hand*].
Rivers [*drone flying over a brook flowing within a ragged rock formation*],
ecosystems [*a heron stalking in shallow water*],
barriers [*another drone view of the big concrete dam with metal pipes*].
Reconnecting European rivers, the smart way: Let it Flow [*close-up slow-motion of bubbling, foaming blue water; a green filter is laid over the closing image, slowly turning the blue water into a greenish colour, before the image slowly fades out*].[3]

Many of the questions and issues raised in this paper are easily detected in this small piece of data. Firstly, the trailer refers to diverse interest groups, actors and entities, combining the ecological, the economical and the social. Secondly, and more importantly: By promoting the possibility of restoring ecosystems and at the same time providing energy, the video addresses the question of sustainability. Restoring rivers supposedly leads to the preservation and increment of biodiversity in fluvial ecosystems whilst hydropower represents a source of energy that is by many considered ecologically sustainable and, incidentally, generates income. The 'adaptive' and 'effective' management of barriers presented in this video thus promises sustainability on various levels. What is more: Not only does the project trailer claim to increase security from floods and thereby to protect human lives and infrastructure, but it also suggests to be 'for everybody', bringing together lay people with professionals from within economy, ecology and science

3 AMBER. 2020b.

through its citizen science programme. The connectivity evoked herein is, therefore, an ecological one (connecting aquatic wildlife and ecosystems) and a social one (connecting citizens with experts and the rivers).

Ambivalent concrete grey and generic blue-green aesthetics

What about the aesthetics of this assertation of sustainability? The trailer's optimistic, technophile and overall invigorating message is phrased verbally, but also transported through the emotionalizing soundtrack and the visual design of the video. The trailer shows many – and very heterogeneous – images of dams and weirs. Indeed, concrete buildings and materialities appear in a very ambivalent light: On one hand there are the old unwanted barriers, framed as rusty and rotting industrial ruins (Illustration 1). On the other we have impressive images of huge modern hydraulic engineering infrastructure artfully controlling incredibly large masses of water (Illustration 2). These latter constructions are depicted in a quite eco-modernist way as the solution for ecological and economic problems and, thus, as a hope for a better and more sustainable future. The frequently used camera view from above has the result of subliming the rivers but also the water infrastructure. Interestingly enough, the outdated, obsolete dams are mostly shown in relatively static images while the modern weirs are always flown over by drones or airplanes and therefore appear much more dynamic.

Illustration 1: Video still from AMBER (2020b. *Let it flow*, https://amber.international/let-it-flow/, Min 0:40.

Illustration 2: Video still from AMBER. 2020b. *Let it flow*, https://amber.international/let-it-flow/, Min 1:35.

Illustration 3: Video still from AMBER. 2020b. *Let it flow*, https://amber.international/let-it-flow/, Min 1:47.

The technophile aesthetics of the video find their counterpart in the somewhat naïve, 'human' aesthetics of the hand-drawn animations. And they are additionally balanced out by the showing of softly flowing water and bubbling foam, of plants, animals and swimming people and by the predominance of the colours blue and green. Blue water bodies and green vegetation around them are, next to the grey concrete dams, the dominant visual topoi. The last picture of the blue water slowly turning green (Illustration 3) stands exemplary for something I would like to call blue-green aesthetics, something that can be observed as omnipresent in the field of water restoration. Be it in project logos and typography, in pictures, videos and other visualisations – the colours blue and green are almost always to be found. As my colleague Chris-

tine Hämmerling has rightly suggested, waters are, in many places, really neither blue nor green but brown, grey or of undefinable colour. Notwithstanding the fact that many European waters are polluted and do not physically reflect the chromatic imaginary attributed to them, the symbolic blue for water and green for nature, ecology or sustainability seem to be indispensable to visually communicate certain water-related values. Thus, these blue-green aesthetics are also applied in this trailer to transport the message that a both economically and ecologically sustainable use of rivers can be achieved.

Case study II: Rhesi. Regulating a River and Engineering Sustainability

The aim of bringing together ecological, safety and social goals is also pursued by the Rhesi project, an acronym that stands for 'Rhein, Erholung, Sicherheit' ('Rhine, Recreation, Safety'), which is supported by the International Rhine Regulation. As part of the large-scale, long-term Austrian-Swiss project, the course of the Rhine in the Rhine Valley, roughly between Feldkirch and Lake Constance, will be regulated over a large area of about 25 km and brought into a more natural state. First and foremost, the riverbed is to be de-channelised and widened in order to increase the discharge capacity of the Alpine Rhine. Flood protection is clearly in the foreground and the protection of human lives and the prevention of economic damage are also very prominently argued in the project's self-representation (Rhesi 2023a). In addition, however, ecological enhancement of the river section, improved use as a local recreational area, drinking water supply and improvement of agricultural land are also cited as important project goals. Again, we see that very different fields of interest and reference variables are brought into play and how, of course, an attempt is made to address and combine as many positive values and objectives as possible.

This alone is interesting, but not specific to the Rhesi project – a similar rhetoric can be observed in the AMBER project. What particularly interests me in this case study is the overall very technocratic approach that underlies the entire project. The term and notion of 'regulation' alone, which is used here, is an indication of this. Other projects tend to talk about and centre on renaturation or revitalization. Within Rhesi, there is a striking amount of argumentation with

figures, technical explanations, hydraulic and engineering studies as well as physical and digital modelling. In addition, the two academic research sites in Zurich and Vienna as well as a model test hall in Dornbirn, which are part of the project, are repeatedly emphasised and staged as important components of the problem-solving process (Rhesi 2023b). This distinguishes this project from others, as the next case study will show.

Modeling futures

Before moving on, however, it is worth taking a look at the various types of modelling carried out in the context of the Rhesi project. This allows me to briefly hint at some analytical perspectives on this empirical material. For one, there is the Dornbirn model test hall in which two critical river sections have been recreated at a scale of 1:50. In this technically highly complex physical model, the behaviour of the Rhine, also in case of flooding, is simulated and thus 'the hydraulic calculations and assumptions of the general project are checked' in order to 'technically and economically optimise' the project, as the Rhesi website states (Rhesi 2023b, translated from German by the author with the help of DeepL). In addition to this, we have a series of digital images and animations that illustrate the course of the river, but also flood cases and their consequences before and after river regulation. Interactive computer-rendered visualisations depict the future river moving freely in a gravel bed instead of in the concrete channel (Illustration 4). Short video animations illustrate in which regions and how fast the water would rise in case of a dam break (Illustration 5).

Models and animations predict possible futures and at the same time have the purpose of shaping and forming those futures in a positive way, thus creating utopian scenarios. In this water engineering project, on the one hand, a certain natural dynamic of the river is strived for, but on the other hand, by means of technology, an attempt is made to prepare for imponderables and unpredictable events as well as possible. With Limor Samiam-Darash's and Paul Rabinow's concept of Modes of Uncertainty (Samiam-Darash/Rabinow 2015) or with Stephen Colliers' and Andrew Lakoff's approach of Preparedness (Collier/Lakoff 2008), one can thus detect exemplary governmentality techniques in the social handling of risks and uncertainties within the Rhesi project.

Illustration 4: Screenshots from Rhesi. 2023c. *Projektziele/Visualisierungen*, https://rhesi.org/projektziele/visualisierungen

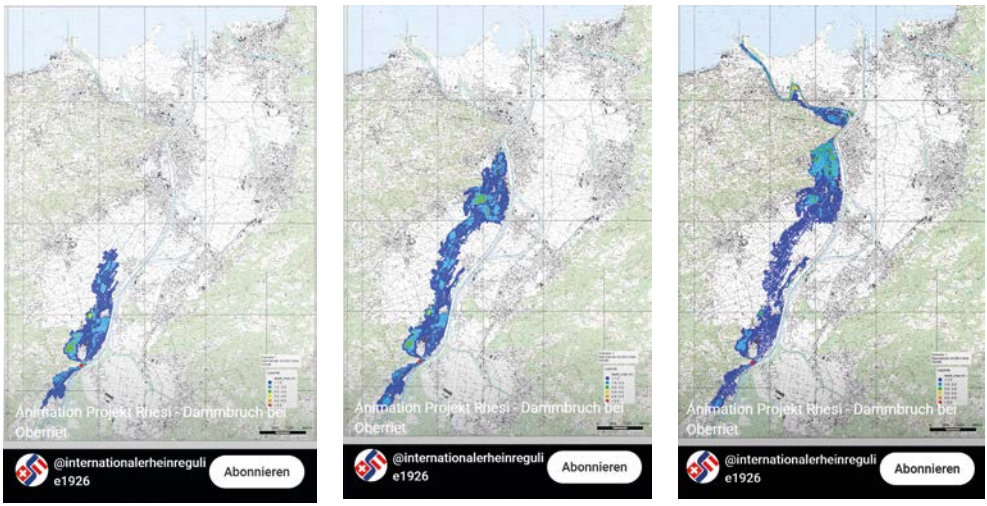

Illustration 5: Video stills from Rhesi. 2023d. *Projektziele/Mehr Hochwasserschutz*, https://rhesi.org/projektziele/mehr-hochwasserschutz, Min 0:10, Min 0:18, Min 0:49.

To conclude this case study, let me return to the question of sustainability. Even though, similarly to the previous case, ecological dimensions and 'near-natural' aesthetics of a 'good' river do appear within Rhesi, what decidedly distinguishes this project is the fact that the social, economic and ecological utopia of sustainability it proposes is an engineered and modelled one.

Case study III: Aire restoration. Between Natural Autonomy and Transparent Anthropogenicity

The specificity of this rather technocratic approach to sustainability within Rhesi becomes even clearer if one compares the Rhine regulation project with another project: the restoration of a short section of the Aire. The Aire is a small river course which runs into the Arve near Geneva, which then flows into the Rhône shortly afterwards. The project has been completed in 2016 and won the Council of Europe Landscape Award in 2019. A formerly channelised section of the river was restored in a special way by excavating a new riverbed next to the concrete channel. While leaving the old concrete channel in its original form, the soil of the new riverbed was shaped into a diamond-like pattern (Illustration 6). The geometric pattern, which at first glance seems very unnatural, subsequently allowed the water to take its own organic course and, above all, to change it constantly over the years, thus creating a very 'natural' looking riverbed.

Illustration 6: Hornung. 2017, https://www.saiten.ch/architektur-gesellschaftlich-relevant/
Picture: Fabio Chironi

In fact, the project also specifically plays with this apparent contradiction of nature and culture in one of its accompanying publications entitled 'Laisser faire la rivière' ('Let the river do it') (Superpositions 2021). In it, referring to Deleuze and Guattari, Bachelard and other philosophers, the makers explicitly state that, on the one hand, they

aimed for the greatest possible autonomy of the river – the title of the publication says it all. Even during the project phase, they decidedly granted the river an agentative and co-constituting power:

> Comment ne pas être séduit par des modèles d'explication du réel qui mettent en avant une non-fixité des éléments, la prise en charge d'un flux généralisé de la matière. N'est-ce pas l'expérience faite dans la pratique de la construction de notre projet, dans le renoncement voulu à tout dessin définitif du nouveau cours de l'Aire, dans la recherche d'éléments déclencheurs de processus autonomes?[4] (Superpositions 2021: 50)

On the other hand, they deliberately did not conceal the anthropogenic character of the river, but made the human influence transparent by leaving the historic channel standing as a kind of monument of former water engineering and choosing an inorganic pattern for the design of the riverbed.

This project indeed represents a playful approach not only to nature and culture, by creatively resolving their apparent contradiction, but also to the notion of sustainability. Among other things, it shows us how closely intertwined nature and culture, rivers and people, autonomous waterflows and hydro-engineering are when enacting what we think of as and call sustainability.

Conclusion and Outlook: Filling the Black Box of Sustainability

As I have tried to show in this paper, within the context of river restoration, sustainability is always thought of and referred to in a multilayered way: it has ecological, economic and social facets and more often than not, various of these dimensions are brought into play and integrated with each other. As the case studies exemplify, sustainability is ambivalent on another level, too. While a certain movement – or return – towards a 'near-natural' status of water bodies is at the core of river restoration efforts, this move is always a distinctly anthropogenic

4 How can we not be seduced by models for explaining reality that emphasise the non-fixity of elements, the taking charge by a generalised flow of matter? Isn't this what we've experienced in the construction of our project, in the deliberate renunciation of any definitive design for the new course of the Aire, in the search for elements that trigger autonomous processes? (Translated by the author with the help of DeepL)

one, meaning that it is always accompanied and conducted by means of technology, engineering and design. Sustainability within river restoration tightly entangles utopias of natural autonomy and technologically engineered future scenarios, thereby fusing nature and culture together. Lastly, sustainability is an object of aesthetic representation. The emphasis possibly lying on the ecological and 'natural' aspects of sustainability, I feel that the range of aesthetics used in the cases discussed above is quite broad. Sustainability often takes the form of blue, freely floating waterbodies and lush green vegetation on the banks, of humans and animals moving in, through and by the water, of sunlight reflecting in the surface of a brighter future. On the other hand, the use of more sterile and technophile engineering aesthetics of sustainability has also become apparent. Sustainability, therefore, can look either organic or anthropogenic – or both at the same time. While this finding doesn't sound surprising, it does reinforce and underline the importance of the question as to when and in which situations specific aesthetics are being resorted to within river restoration and as to why this might be the case in each specific context.

In the days of the Anthropocene and of growing global awareness of environmental crisis (Crate/Nuttall 2016), ethnographic investigations into the fluid relations between people, other-than-humans and water bodies are of significant academic and societal relevance. By further following river restoration practices and looking closer at how 'sustainable', e.g., 'diverse', 'secure' and 'connected/connecting' waters are enacted, I hope to both give insights into the situated, everyday negotiations of these major processes and work out possible generalising thoughts on our use of values such as sustainability. Public debates on how to define a good and healthy 'natural environment' and on how to meaningfully relate to it as a society today are more than ever highly political and therefore need to be addressed by anthropological research that is sensitive to such value negotiations. If we learn more about actor-specific, heterogeneously situated enactments of water-related values in the river restoration context, we can fill the black boxes of sustainability, (bio)diversity, (bio)security or connectivity with tangible contents and ascertain where and why different positions clash and conflicts emerge, but also where potentials for constructive communication, cooperation and common goals can be found in the future.

References

AMBER. 2020a. *About*, https://amber.international/about/.

AMBER. 2020b. *Let it flow*, https://amber.international/let-it-flow/.

Angosto-Ferrández, Luis Fernando, and Geir Henning Presterudstuen, eds. 2016. *Anthropologies of Value. Cultures of Accumulation Across the Global North and South*. London: Pluto Press.

Barad, Karen. 2012. 'Intra-actions. Interview of Karen Barad by Adam Kleinmann.' *Mousse Magazine* 34: 76–81.

Bowles, Benjamin O. L., Maarja Kaaristo, and Nataša Rogelja Caf. 2019. 'Dwelling on and with Water – Materialities, (Im)Mobilities and Meanings. Introduction to the Special Issue.' *Anthropological Notebooks* 25 (2): 5–12.

Collier, Stephen J., Andrew Lakoff. 2008. 'Distributed Preparedness. The Spatial Logic of Domestic Security in the United States.' *Environment and Planning D: Society and Space* 26 (1): 7–28.

Crate, Susan A., Mark Nuttall. Eds. 2016. *Anthropology and Climate Change. From Actions to Transformations*. London, New York: Routledge.

Doganova, Liliana. 2014. 'Editorial note. Valuation Studies and the Critique of Valuation.' *Valuation Studies* 2 (2): 87–96.

Graeber, David. 2001. *Toward an Anthropological Theory of Value. The False Coin of Our Own Dreams*. New York: Palgrave Macmillan.

Haines, Daniel. 2017. *Rivers Divided. Indus Basin Waters in the Making of India and Pakistan*. Oxford: Oxford University Press.

Haines, Daniel. 2013. *Building the Empire, Building the Nation. Development, Legitimacy, and Hydro-Politics in Sind, 1919–1969*. Oxford: Oxford University Press.

Haraway, Donna. 2008. *When Species Meet*. Minneapolis: University of Minnesota Press.

Haraway, Donna. 2003. *The Companion Species Manifesto. Dogs, People, and Significant Others*. Chicago: Prickly Paradigm Press.

Hastrup, Kirsten. 2013. 'Water and the Configuration of Social Worlds. An Anthropological Perspective.' *Journal of Water Resource and Protection* 5 (4): 59–66.

Helgesson, Claes-Fredrik, and Fabian Muniesa. 2013. 'For What It's Worth. An Introduction to Valuation Studies.' *Valuation Studies* 1 (1): 1–10.

Heuts, Frank, and Annemarie Mol. 2013. 'What Is a Good Tomato? A Case of Valuing in Practice.' *Valuation Studies* 1 (2): 125–146.

Hidalgo-Bastidas, Juan Pablo, Sytske Susie Jellema, Leontien Cremers, and Félix Narváez. 2017. Above Water – Documentary-in-the-making. In *Social Water. Voices from around the world*, Krause, Franz, Tijo Salverda, Sinah Kloß, Andrea Hollington, Nina Schneider, Oliver Tappe, eds., Issue 03/2017.

Ingold, Tim. 2013. 'Anthropology beyond Humanity, Suomen Antropologi.' *Journal of the Finnish Anthropological Society* 38 (3): 5–23.

Kirksey, S. Eben, and Stefan Helmreich. 2010. 'The Emergence of Multispecies Ethnography.' *Cultural Anthropology* 25 (4): 545–576.

Kohn, Eduardo. 2013. *How Forests Think. Toward an Anthropology beyond the Human.* Berkeley, Los Angeles: University of California Press.

Krause, Franz. 2016. Rivers, Borders, and the Flows of the Landscape. In *The Dynamics of Cultural Borders*, Kannike, Anu, Monika Tasa, eds., 24–45. Tartu: University of Tartu Press.

Krause, Franz, and Veronica Strang. 2016. 'Thinking Relationships Through Water.' *Society & Natural Resources* 29 (6): 633–638.

Rhesi. 2023a. *Home*, https://rhesi.org/.

Rhesi. 2023b. *Modellversuche*, https://rhesi.org/modellversuche.

Rhesi. 2023c. *Projektziele/Visualisierungen*, https://rhesi.org/projektziele/visualisierungen.

Rhesi. 2023d. *Projektziele/Mehr Hochwasserschutz*, https://rhesi.org/projektziele/mehr-hochwasserschutz.

Roberts, Laura. 2019. 'Taking up space. Community, Belonging and Gender among Itinerant Boatdwellers on London's Waterways.' *Anthropological Notebooks* 25 (2): 57–69.

Roth, Klaus. 1997. 'Rivers as Bridges – Rivers as Boundaries. Some Reflections on Intercultural Exchange on the Danube.' *Ethnologia Balkanica* 1: 20–28.

Samimian-Darash, Limor, and Paul Rabinow. Eds. 2015. Modes of Uncertainty. Anthropological Cases. Chicago: University of Chicago Press.

Strang, Veronica. 2014. 'Fluid Consistencies. Meaning and Materiality in Human Engagements with Water.' *Archaeological Dialogues* 21 (2): 133–150.

Strang, Veronica. 2004. The Meaning of Water. London, New York: Routledge.

Superpositions. eds. 2021. *Laisser faire la rivière*. Geneva: Infolio.

Tsing, Anna. 2012. 'Unruly Edges. Mushrooms as Companion Species. For Donna Haraway.' *Environmental Humanities* 1 (1): 141–154.

van Dooren, Thom, Eben Kirksey, and Ursula Münster. 2016. 'Multispecies Studies. Cultivating Arts of Attentiveness.' *Environmental Humanities* 8 (1): 1–23.

Wagner, John R. 2015. *The Social Life of Water*. New York, Oxford: Berghahn Books.

Whyte, David. 2019. 'Belonging in the Ocean. Surfing, Ocean Power, and Saltwater Citizenship in Ireland.' *Anthropological Notebooks* 25 (2): 13–33.

Illustrations

AMBER. 2020b. *Let it flow*, https://amber.international/let-it-flow/.

Hornung, René. 2017. *Architektur, gesellschaftlich relevant*, https://www.saiten.ch/architektur-gesellschaftlich-relevant/.

Rhesi. 2023c. *Projektziele/Visualisierungen*, https://rhesi.org/projektziele/visualisierungen.