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Content

Foreword

How can we succeed in shaping a social-ecological future if this requires joint action in the present? In the discussion about the necessity of social-ecological transformation processes, questions like these are not new, yet more topical than ever. For this discussion, we would like to propose in the following text the principles according to which we believe transformation processes can be successfully shaped. In this way, we are following up on earlier contributions to the discussion. In our ISOE Discussion Paper "Sustainable Science in the Anthropocene" from 2016, we pointed out that the designation "Anthropocene" for our era is profoundly changing the relationship between the natural and social sciences, and between society and science. We argued for strengthening science as a critical authority and, to this end, for a more comprehensive transdisciplinary approach to science, and for expanding forms of societal participation in the scientific knowledge process. In a previous publication we had already shown in 2013 why and how science itself must change its structures and working methods in order to produce knowledge for society and politics that is as reliable as it is useful for sustainable developments. An English translation is available under the title "Science for Sustainable Development Requires a Critical Orientation" (Jahn 2016). Now that the call for this useful knowledge is growing louder and louder, it is once again clear that there is a lack of knowledge about how to create a common understanding of how to shape the future in the present. We consider this common understanding to be a basic prerequisite for social-ecological transformation processes to succeed. In the following we present our understanding of social-ecological shaping in the Anthropocene.

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Introduction

Social-ecological transformations can only succeed if we understand them as a joint task of shaping the future. But how can joint action be fostered when ideas of the "good life" differ so much? The principles of shaping presented here aim to provide orientation for transdisciplinary sustainability research in order to find answers to complex questions, such as the sustainable use of water or the protection of biodiversity.

"What kind of world do we want to live in and can live in?" Those who ask this question hope that an answer is not just a creative pastime, but can also become relevant in practice. So when we talk about "shaping social-ecological transformations" in the following, we are expressing a fundamental optimism. However, optimists are having a hard time at the moment: Unchecked climate change and species extinction could collapse entire societies and ecosystems. It is largely undisputed that this scenario is no longer a dystopian exaggeration, but rather a fact weighing heavily on the negotiating tables of world society.[1]

Reactions in society to such crisis scenarios are quite different, even antagonistic. We could even speak of a struggle over the correct interpretation for framing the right way to deal with the global crisis of societal relations to nature and its already noticeable consequences – a struggle that is accompanied by an erosion of a basic democratic consensus. This is not really surprising. After all, the diversity of crisis perspectives reflects the range of ideas about the "good life". When it is exclusively a question of what is desirable, humanity rapidly disintegrates into factions. The divide is not only between the Global South and the Global North, between continents or countries. It also runs through individual societies: between socio-economic milieus, societal divisions of labour, political and ideological orientations or gender and ethnic identities. Last but not least, beliefs around the climate crisis also divide the generations, as the discourse revolving around the Fridays For Future movement has shown (von Wehrden et al. 2019).

The diversity of the desirable and the planetary possible

There is no global "we" when it comes to the question of what kind of world we want to live in. It seems pointless to stress this, and yet this idea permeates all areas of international crisis policy. A prominent example is the Sustainable Development Goals, internationally the most ambitious attempt to date to find a global response to the crises of our time. This attempt assumes a global "we" with a uniform desire for ecological modernisation. But there is no consensus on this concept of social development,

[1] The article was submitted before the outbreak of Covid 19. The need of applying the understanding of shaping social-ecological transformations presented below to the corona crisis is clear. However, this must be the subject of a separate article.

whose engine remains infinite economic growth and for whose shortcomings convincing arguments are put forward (Schleicher et al. 2018).

We are thus dealing with a crisis situation that requires rapid and consistent action. If things go well, world society can still agree on appropriate measures in good time to combat the most dramatic symptoms of the crisis. The urgency of the crisis therefore implies that the problems will have to be tackled with the same means employed by the economic and political system that gave rise to the crisis situation to begin with. However, whether these means are sufficient or even suitable is far from certain (Brand and Wissen 2013). Nonetheless, we too believe that action consistent with the means known and available today is imperative, especially to avert the climate crisis. However, in our view this is not enough. For no answer can be found here to the question of what a fundamentally different, better life looks like, one that not only tackles the causes of current crises but also helps to prevent future ones. As mentioned before, notions of the "good life" will vary. But we are convinced that this diversity, which will always contain incompatibilities, is something that must be endured and whose potential for global learning from one another must be exploited (Ellis 2018). The tension that needs to be resolved, however, is how local social-ecological transformations can be related to the global crisis or, in other words, how the diversity of what is desirable can be reconciled with what is possible on a planetary scale. In our view, this requires a new understanding of what it means to shape social-ecological transformations in the Anthropocene. In the following we would like to discuss what such an understanding might look like. It has emerged from our transdisciplinary research program, a central element of Frankfurt Social Ecology (Becker and Jahn 2006, Hummel et al. 2017)[2]. We translate the question of the "good life" into the question of a reasonable arrangement of societal relations to nature – here Adorno's idea of a possible reconciliation of reality and reason is alluded to (Adorno 1958).

Shaping as a collective, experimental activity

We have already argued in GAIA that critical sustainability research needs a new understanding of shaping, which embraces the fact "that development is an open-ended process with only limited controllability" and that such a process has to be governed by an "appreciation of one's own possibilities and limitations" (Jahn et al. 2015, 95). Here we start with our understanding of what "shaping" means. The corresponding German term "Gestaltung" refers to a specifically German-language history of ideas which cannot be recapitulated here. Just this much: in this history "Gestalt" stands for what is formed during the transition from the world of perceptions to the world of

[2] This contribution is based on discussions at ISOE – Institute for Social-Ecological Research – and is part of the preparation for and follow-up to the conference "Aufbruch in die Gegenwart. Die sozial-ökologische Zukunft heute gestalten" (Departure to the Present: Shaping the Social-Ecological Future Today) in November 2019. The documentation of the conference is available at www.isoe.de/veranstaltungen/isoe-tagung.

ideas (Metzger 1974). Accordingly, "Gestalt" can mean linking inner worlds of imagination with externally perceptible realities. Whether in research or in social practice, we understand "Gestaltung" or "shaping" first of all as a conscious intervention in existing contexts – an intervention, which is carried by collective ideas about how these contexts should be changed.

Modern societies always live in the future. The promise of progress is that tomorrow there will be more of everything for everyone. There is a commitment to progress, it is claimed, and reference is made to achievements already made (Pinker 2018). However, to put it bluntly, one could rather say that modern societies have condemned themselves to progress. This includes a growth-driven idea of development, which points forward somehow without being able to say where it will actually lead. Shaping, as we want to understand it, reverses the perspective: it is a collective, cooperative, and experimental activity for a different today. By shaping transformations in this way, we break out of modernity's fixation on the future and move into the present.

It is repeatedly lamented that there is a striking lack of major social utopias (von Randow 2019). We share this diagnosis, but not the regret; at least not when "utopia" stands for an enticing image of a better future, which, however, will never come about because it is an unattainable idealization. What we need, in contrast, are concrete utopias, namely those that rely on the capabilities, concepts, practices, and techniques that already exist (Welzer 2019). For us, shaping then means carving out such utopias in a democratic process from the experiences, the wishes, and the contradictions of the present. Such a process can only succeed by recovering what is being lost under the constraints of the crisis: creative, social imagination combined with critical reflection on power, its limits and possibilities – including the power of science.

Social-ecological principles of shaping

Our proposal for a new understanding of shaping social-ecological transformations in the Anthropocene is intended as a discourse intervention, which we address first and foremost to the actors of transdisciplinary sustainability research. To illustrate what this understanding could mean practically, we have developed six principles of shaping. We understand these as concrete guidelines for transformative processes: They are intended to create a balance between the recognition of planetary boundaries and the enabling of social development alternatives. In essence, our approach is not to specify in advance *what* is to be done, but rather *how* something is to be done.

Our central hypothesis is that there cannot and will not be a global understanding of what constitutes a "good life" or a grand social utopia[3]. From our point of view it is

[3] In addition to talk about the good life in the cultural pages of newspapers there are also some very concrete conceptualizations such as, for instance, the capability approach (Amartya Sen, Martha Nussbaum) or the concept of buen vivir originating from the indigenous tradition of Latin America, which already enjoys constitutional rank in Ecuador and Bolivia.

indispensable and also possible for the many "we-communities" or "collectives of shaping" to reach an understanding on how to relate their own ideas of a "good life" to what is possible on a finite planet – an understanding, which will always be confrontational in nature. We assume that justice as a fundamental value in this process of understanding represents an indispensable, normative basic orientation.[4]

This understanding of shaping transformative processes, and especially the following principles of shaping, point to the deeper causes of social-ecological crises – although, we admit it, at a high level of abstraction. Nevertheless, it remains to be shown that planetary boundaries are, so to speak, "automatically" respected when social-ecological transformations are shaped based on the principles proposed here. However, this cannot be the intention of our intervention either. Our aim is rather to initiate the – in our view – overdue discussion of a new understanding of shaping social-ecological transformations in the Anthropocene with a concrete proposal. Which principles of shaping are really suitable in the end has to be the subject of a scientifically informed, but essentially societal process.

1. Focusing on relations between society and nature

Climate change and the extinction of species are expressions of a crisis in societal relations to nature. One cause of this crisis is the underlying fundamental idea of modernity which regards nature as an object that derives its value solely from its contribution to securing human living conditions and not as an independent counterpart. Therefore, shaping must first and foremost focus on placing society and nature in relation, and it must be guided by the idea of a relation between human and non-human subjects. Depending on the purpose of the shaping process, this can mean perceiving, maintaining, restoring or completely creating such relations in the first place. The degree to which this succeeds must be central to the evaluation of options for action.

2. Enabling coexistence

The present crises are expressed in processes of displacement and subordination as they result from the motive of the domination and economic exploitation of nature. Shaping, in contrast, must enable the preservation or creation of conditions of coexistence. Coexistence initially refers to different social groups, but also includes human and non-human subjects. These conditions include in particular the disclosure and mitigation of claims to power, control, and legitimacy vis-à-vis others, as well as the recognition of difference and conflict, with a mind-set open and willing to learn.

3. Defining and reflecting on limits

An essential characteristic of the Anthropocene is the progressive processes of dissolution of spatial, temporal, and social boundaries. Shaping must therefore adopt a per-

[4] In this context, we understand justice, especially social justice, North-South justice, gender justice and generational justice, first of all in terms of a regulative idea, thus acknowledging that its concrete implementation can always be highly controversial in individual cases.

spective of delimitation, without determining in advance which physical, social, political, or cultural spaces will be defined by it. Accordingly, shaping must reflect on its own boundaries. Its goals must be derived from the needs of the actors involved and their ideas for a better life within the particular concrete borders. At the same time, shaping must take into account social-ecological contexts of function and meaning, which transcend the set limits. This includes above all recognising the consequences of one's own way of life for others.

4. Dealing with complexity

The Anthropocene stands for an unprecedented degree of complexity in the societal relations to nature. Shaping must therefore understand every intended development as a process that can only be controlled to a limited extent. This includes a reflective and transparent approach to uncertainty, ignorance, and divergent descriptions of problems, the ability to cope with surprises as well as openness towards alternative goals and their implementation. Shaping must also take into account the global scope of local actions and the consequences of the reduction in complexity that is always necessary for decision-making.

5. Strengthening resilience

Societies worldwide are already confronted with devastating anthropogenic changes in their natural environment. Even under optimal conditions, these changes will continue to increase in the coming decades. Therefore, in processes of change, shaping must aim to strengthen the structural and functional resilience of social-ecological systems in the face of the consequences of those environmental changes that are already foreseeable today. At the same time, shaping must take into account the function-preserving transformability of these new systems. This preserves the capacity to act if the extent of the expected consequences or possible future, currently unknown environmental changes exceed the resilience of these systems. Moreover, this keeps options open for any desirable system change.

6. Ensuring participation of all actors

Forms of exclusion, especially of marginalized actors, and the unequal distribution of shaping power are further characteristics of the global crisis of societal relations to nature – a crisis, which is characterized by social and political antagonisms. For this reason, shaping must be conceived as a (grassroots) democratic process and geared towards the practically effective participation of all actors in a context of action. A prerequisite is the translation and mutual recognition of different interests and capabilities for action. In this context, it is particularly important to ensure methodologically sound, and thus transparent, transdisciplinary cooperation between science and society in order to use situated, case-specific knowledge for the definition and processing of transformative endeavours.

Application examples from research practice

Initial experience with the principles of shaping shows that they can serve as effective research guidelines in various fields of action. We would like to illustrate this with the following two examples: water and biodiversity.

Water

"Water crises" are a symptom of a period of time in which social activities shape the water cycle and change the natural characteristics of waters. By ***focusing on relations between society and nature,*** research centres on the anthropogenic imprinting of water. It addresses not only the tensions, but also the critical interdependencies between societal uses of waters and their conservation and regeneration. At the same time, the question becomes which social-ecologically desirable shaping of water can management be based on? Thus, water bodies such as rivers, lakes, seas and groundwater, besides changes in their substantial composition are also structurally transformed for flood protection, shipping, food production or energy generation. Shaping can no longer mean the restoration of a "natural state" of water morphologies, the chemical composition of the water, and discharge volumes and speeds. Intensified by a multitude of conflicting societal demands, this has consequences for the determination of what constitutes a "good ecological status" in the Anthropocene. It is an open question whether this status can still be pursued, and which actors must be involved in the decision-making processes. A new ***approach to complexity*** is required, because clear cause-effect relations and thus starting points for classical solution measures dissolve. This is the case when, for example, undesirable micropollutants are omnipresent and spread to the entire water cycle, or when water risks, as systemic risks, can no longer be limited to individual subjects of protection. With the principles of shaping, new concepts for desirable transformations can be found and the necessary systems, target and operative knowledge in dealing with water can be newly bundled and structured for the sustainability discourse in the Anthropocene.

Biodiversity

The loss of biological diversity under the conditions of the Anthropocene poses a long-term threat to the conservation of ecosystems and their functions as well as to the living conditions of humans. Analysing this problem with the help of the principles of shaping reveals that a new approach to biodiversity is needed, one that starts with a critical reflection on the current state of research. The principle of shaping ***Dealing with complexity*** highlights the fact that we can no longer rely on established methods to preserve global biodiversity in its regional manifestations (such as protected areas in remote regions). Linking local action, such as land management, pollutant inputs and biodiversity us in one region of the world with local action in another creates new

challenges for biodiversity conservation. We can no longer rely on large areas elsewhere to provide resources or act as reserves for biodiversity. At the same time, two principles of shaping – ***Focusing on the relation between society and nature*** and ***Enabling coexistence*** – help to focus explicitly on the interdependence of society and biodiversity rather than seeing them as opposites. Given the interdependencies of climate change, intensive agriculture, alien species and genetic engineering, dealing with complexity is crucial to whether there can be new and effective strategies for coping with biological diversity. Research must reorient itself in order to consciously and explicitly orient shaping approaches to change, the processes of change in biodiversity and the way society deals with it.

Technological development

A relevant application of our approach to shaping, which we cannot go into in detail here, is technology development – especially in the field of potentially disruptive technologies such as artificial intelligence or genome editing. It is undisputed that ongoing technological development has the potential to promote new models of society and the sustainable use of natural resources. However, where this development unfolds though its own dynamic and is withdrawn from ***ensuring participation*** of all actors it exacerbates ecological and social crises and restricts the freedom of shaping. Our approach can show a way to regain this freedom by facilitating shaping processes that support a critical-constructive and democratic-participatory technology development.

Concluding remarks

These initial experiences make it clear that the six principles of shaping must be operationalised in individual cases in a context and problem specific manner for a given problem and for each set of concrete local shaping processes. This makes it possible to agree on possible solutions, while recognising existing power asymmetries, values, and interests, employing available, critically reviewed knowledge and exploiting existing scopes for action and their potential expansion. This will in each case lead to different weightings, emphases and specifications.

For transdisciplinary research, the following functions of the principles of shaping can be summarized:

Structuring the shaping problem: The differentiation inherent in the principles of shaping, despite all the vagueness, allows a broad, multidimensional view of the shaping task and creates diverse conceptual approaches to the thematic fields. Even if the principles do not initially play a major role in the problem analysis, they can structure the assessment of the shaping options that have been developed and thus contribute to the gain in knowledge.

Content orientation of the shaping task: The principles of shaping make it easier to contextually locate and evaluate the current state of knowledge. They thus offer assistance in reviewing the essential contents of the shaping task, as well as in identifying blind spots, and can thus contribute to more strongly substantiated results. This is of high relevance for the quality of measures and instruments in practice.

Critical reflection of the shaping process: The principles of shaping make it possible to critically question basic assumptions and the researcher's own self-image. This includes previous paradigms, goals, and standards, for example in the management of water resources and the protection of biodiversity. This can be extended beyond research to the different social perceptions and interests inscribed in the shaping processes.

Overall, the principles of shaping can thus help to identify shaping corridors between what is optimally desirable, minimally necessary and realistically possible.

We understand our shaping approach as a contribution to the theory and practice of social-ecological transformations. To use the plural here and to think of shaping in the context of a multitude of interlinked transformation processes is a direct consequence of our approach. In this sense, our approach is also a plea to critically question the concept of the "Great Transformation" and its global claim, which has recently become very fashionable again.

Transformations are happening today and will not first begin tomorrow. Regardless of how we shape transformations social-ecologically, we must be prepared for the fact that intended change can also be accompanied by losses. It is therefore important for us to note that social-ecological transformations cannot succeed as projects of defence or avoidance. They can only succeed and be tolerated in their inevitably turbulent phases if they are understood as joint projects of shaping a better life.

References

Adorno, Theodor W. (1958): Einführung in die Dialektik. Herausgegeben von Christoph Ziermann (2015). Nachgelassene Schriften. Abteilung IV: Vorlesungen. Band 2: Einführung in die Dialektik. Berlin: Suhrkamp

Becker, Egon/Thomas Jahn (Hg.) (2006): Soziale Ökologie. Grundzüge einer Wissenschaft von den gesellschaftlichen Naturverhältnissen. Frankfurt am Main: Campus

Brand, Ulrich/Markus Wissen (2013): Crisis and continuity of capitalist society-nature relationships: The imperial mode of living and the limits to environmental governance. Review of International Political Economy 20 (4), 687–711

Ellis, Erle C. (2018): Science alone won't save the Earth. People have to do that. New York Times, 11.08.2018

Hummel, Diana/Thomas Jahn/Florian Keil/Stefan Liehr/Immanuel Stieß (2017): Social ecology as critical, transdisciplinary science: Conceptualizing, analyzing and shaping societal relations to nature. Sustainability 9 (7), 1050

Jahn, Thomas (2016): Science for Sustainable Development Requires a Critical Orientation. ISOE-Diskussionspapiere, 39. Frankfurt am Main (originally published 2013 in German language in GAIA 22 (1), 29–33)

Jahn, Thomas/Diana Hummel/Engelbert Schramm (2015): Nachhaltige Wissenschaft im Anthropozän. GAIA 24 (2): 92–95. DOI: 10.14512/gaia.24.2.6 (English translation: Jahn, Thomas/Diana Hummel/Engelbert Schramm (2016): Sustainable Science in the Anthropocene. ISOE-Diskussionspapiere, 40. Frankfurt am Main)

Metzger, Wolfgang (1974): Gestalt. In: Ritter, Joachim (Hg.): Historisches Wörterbuch der Philosophie. Band 3: G–H. Darmstadt: Wissenschaftliche Buchgesellschaft, 539–548

Pinker, Steven (2018): Enlightenment now: The case for reason, science, humanism, and progress. New York: Viking

Schleicher, Judith/Marije Schaafsma/Bhaskar Vira (2018): Will the Sustainable Development Goals address the links between poverty and the natural environment? Current Opinion in Environmental Sustainability 34, 43–47

von Randow, Gero (2018): Wir brauchen Utopien. Die Zeit, 28.12.2017

von Wehrden, Henrik/Lydia Kater-Wettstädt/Uwe Schneidewind (2019): Fridays for Future aus nachhaltigkeitswissenschaftlicher Perspektive. GAIA 28 (3), 307–309. DOI: 10.14512/gaia.28.3.12

Welzer, Harald (2019): Alles könnte anders sein. Eine Gesellschaftsutopie für freie Menschen. Frankfurt am Main: S. Fischer

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