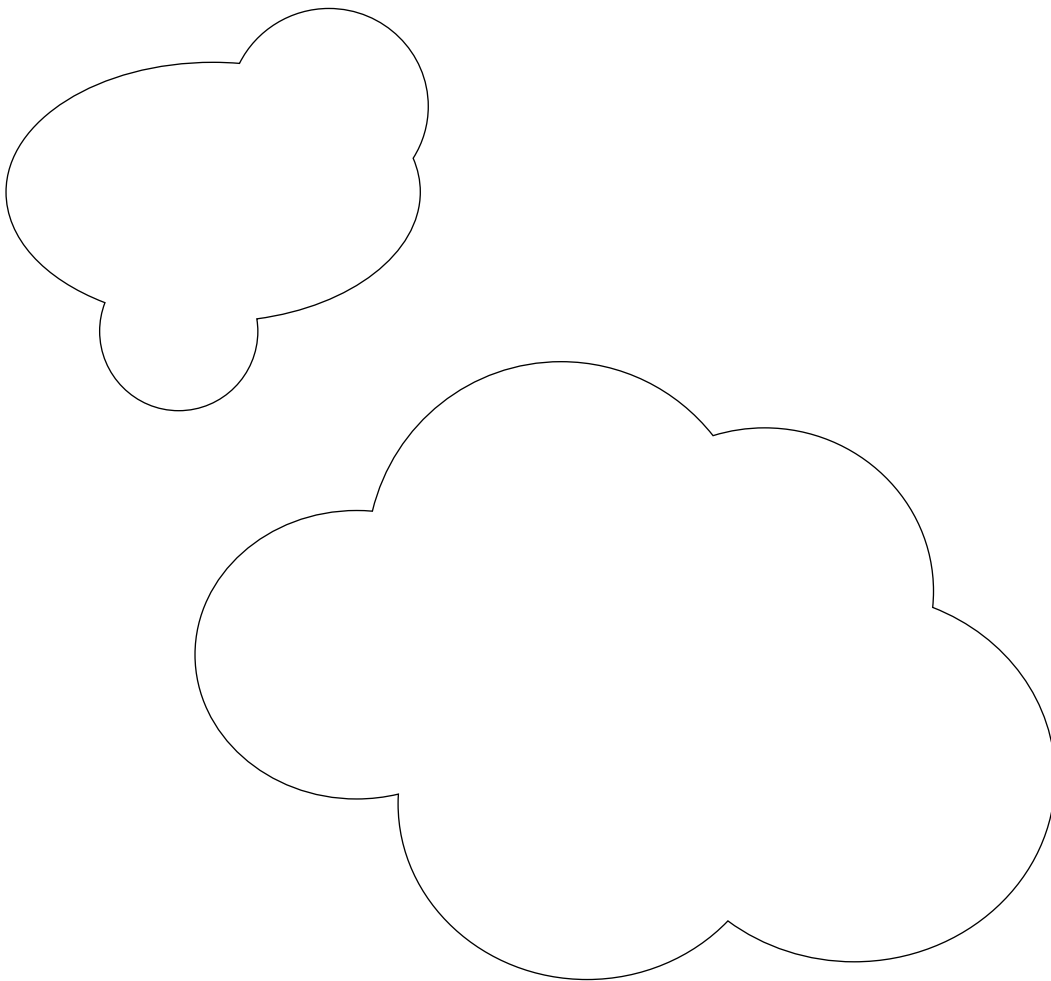


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«Three Choices»

Jan-Christoph Zoels, Karin Fink and Andreas Unteidig

«We basically have three choices: mitigation, adaptation, and suffering. We are going to do some of each. The question is what the mix is going to be.»

– John Holdren, 2007¹

Climate change and related emergencies are our key challenges. While design education has addressed sustainability through various lenses – material research, cradle-to-cradle design, circular economy, participatory design approaches to social innovation, and co-creation to prototyping regulations – much remains to be done. The choices outlined in this statement by John Holdren, a former senior science advisor to the Obama administration, frame potential directions to address the climate crisis in the design education curriculum and to connect design education to the broader scientific discourse. We examine each of Holdren's choices as action and opportunity areas for designers. We briefly contextualise the new Master in Eco-Social Design (ESD) programme at the Lucerne School of Design and Art, which explores the wicked problems of living within the planet's ecological limits.

Mitigation approaches tackle the root causes of climate change, e.g., by reducing emissions and changes in behavioural patterns and societal paradigms. The European Environmental Agency describes mitigation as preventing or reducing greenhouse gas emissions into the atmosphere and offers (predominantly technical) examples: «by reducing the sources of these gases – e.g., by increasing the share of renewable energies, or establishing a cleaner mobility system – or by enhancing the storage of

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What can design bring to mitigation?
Is our contribution profound or practical enough?

these gases – e.g., by increasing the size of forests.»² Further examples include experimental geoengineering approaches to reduce solar radiation or augment photosynthesis, negative emissions technologies such as direct air carbon capture and sequestration, ocean fertilisation, or more conventional decarbonisation approaches such as renewable energies, biomass construction, reforestation and wetland reconstruction.

While the latter examples have a low likelihood of negative repercussions, the more experimental approaches «carry a lot of uncertainty and risk in terms of practical large-scale deployment,»³ according to Fawzy et al. The *IPPC Sixth Assessment Report* on impacts, adaptation and vulnerability confidently states, «Solar radiation modification approaches, if they were to be implemented, introduce a wider range of new risks to people and ecosystems, which are not well understood.»⁴

Challenging questions emerge for designers:

How might we contribute to a shift in societal paradigms, values and mindsets? How might we foster participatory decision-making methods to scale mitigation strategies? What can design bring to mitigation? Is our contribution profound or practical enough? Do we understand the science, complex stakeholder networks, systemic nature, and implications of our interventions? How do we address the social dimension in equitable and just ways? How might we inspire students to move from people to planet-centric design approaches?

Adaptation describes the preparation of our communities and ourselves for current and future impacts. Measures include large-scale infrastructure

changes, such as building defenses to protect against rising sea levels, flood barriers and storm drains, urban planning initiatives such as edible cities and 15 min neighbourhoods, energy-efficiency improvements to the existing building stock, environmental land management schemes, nature-based solutions such as rewilding and ecosystem reconstruction, urban agriculture, vertical farming, and water management, as well behavioural shifts, such as individuals reducing their food waste, changing their diet, mobility or consumption patterns ... Adaptation can be understood as adjusting to climate change's current and future effects.

Adaptation can be understood as adjusting to climate change's current and future effects.

The *IPCC Sixth Assessment Report* describes climate-sensitive health outcomes under three adaptation scenarios – limited, incomplete or proactive. *How might we help policymakers, communities, and individuals to understand the result of their (non)-actions? How can we go beyond local-scale initiatives to address the socioeconomic costs of maintaining and reconstructing countries overproportionally struck by climate disasters? How do we manage the uneven distribution of climate dangers?*

Further questions arise:

How might we map stakeholder interactions, such as losses and opportunities within our communities? How can we expedite our societies' adaptation to climate crisis and biodiversity loss? What actions can we model toward more sustainable, solidarity, just, and resilient futures? What kind of stories help build momentum toward proactive adaptation?

In 2022, Italy experienced five heatwaves of 35+ degrees Celsius, southern Switzerland a persistent drought...

Suffering, the last choice offered by John Holdren, describes the direct or mediated experience of the rapidly growing number of individuals and communities negatively (or even severely) impacted by climate emergencies. In 2022, Italy experienced five heatwaves of 35+ degrees Celsius, southern Switzerland a persistent drought, and Pakistan suffered the worst floods in its history, while nearly 80,000 fires raged in the Amazon. Without forward-thinking mitigation and adaptation approaches, the third 'choice' may take over as the prevalent modus operandi for responding to the climate crisis.

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The self, the commons and the planet are at the centre of our design interventions to cope with today's systemic challenges.

Some questions for designers include:

How might we address the suffering we inflict upon our world due to the predominant orientation towards growth and consumption? How can we move

from temporary problem-solving approaches to resilient communities of care? How do we overcome the value-action gap in our individual behaviours? Opportunity areas might include humanitarian assistance, disaster relief, food security, population displacement and people/planet-centric service design for regional and global institutions.

Designers are starting to address adaptation and suffering, but are we equipped to contribute to mitigation? *How do we want to live together? And how do we get there? How will we design/work a generation from now? What new competencies do we need to develop as designers? What new professional roles will evolve? Which 'game changers' will shape our expectations for the future?*

So far the 21st century has been marked by a multitude of systemic, interconnected crises, which challenge designers to reimagine long-held beliefs, dependencies, and established ways of doing things and act out of a sound understanding of sociotechnical and natural systems. To this end, ESD applies a systemic perspective on human and non-human stakeholders and their interrelationships within the planet's ecological limits. This transdisciplinary design approach seeks to expand not only the roles, capacities and alliances in which designers collaborate but also the scope of what is understood as designable.

Design can contribute directly to various fields of knowledge for sustainability transitions, as many aspects are an inherent part of the design practice:

Future Literacy: The ability to imagine a desirable future and translate visions into pathways of action. The ability to think about values and to create (normative) frameworks, goals and targets.

System Literacy: The ability to analyse complex problems in a current state and in its history.

Transformative Literacy: The ability to foster and host collaborative processes and innovation, to bridge the gaps between different mindsets and approaches.

With the new Master in Eco-Social Design programme at HSLU, we provide a platform for designers to hone these abilities and to explore new roles for designers to apply collaborative and practice-oriented design approaches to address social, environmental, economic and cultural issues. The self, the commons and the planet are at the centre of our design interventions to cope with today's systemic challenges. The programme is concerned with the well-being of present and future societies and explores established

and emerging roles for designers to contribute to the eco-social transformation.

To this end, we consider and further develop the following design strategies:

Post-solutionism: Instead of proclaiming the «one way» of doing things right, the MA in Eco-Social Design programme is structured as a platform for collective and open exploration and experimentation.

Optimistic attitude: The focus lies on the forward-looking development of new strategies and roles for designers to contribute to more sustainable, resilient and just futures.

The confluence of different worlds: The programme cultivates inter- and transdisciplinarity and functions as a space for both intellectual and design-practical experimentation.

Positioning diversity of methods and subjects (through project and focus modules) as a strength: Developing and sharpening one's interpretation and practice as an eco-social designer.

Utopia and professionalisation: Wanting to change existing conditions, but at the same time being able to act within them. Graduate studies as a place for utopias that inspire concrete solutions.

Students of ESD become agents of change who navigate complex systems, collaborate with human and non-human actors and design interventions at various scales – from policymaking to prototyping regulations, community activism and individual actions. The programme and its network of partners from academia, culture, NGOs and industry provide students with the infrastructure to explore and develop such stances in discourse and practice.

«When we quit thinking primarily about ourselves and our own self-preservation, we undergo a truly heroic transformation of consciousness.»

– Joseph Campbell⁵

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2 European Environmental Agency, «What Is the Difference between Adaptation and Mitigation?», <https://www.eea.europa.eu/help/faq/what-is-the-difference-between> (retrieved 17 Oct 2022).

3 Samer Fawzy, Ahmed I. Osman, John Doran and David W. Rooney, «Strategies for Mitigation of Climate Change. A Review», in: *Environmental Chemistry Letters* 18 (2020), pp. 2069–2094, here p. 2073, doi:10.1007/s10311-020-01059-w.

4 Hans-Otto Pörtner, Debra C. Roberts, Elvira Poloczanska, Katja Mintenbeck, Melinda Tignor, Andrés Alegria, Marlies Craig, Stefanie Langsdorf, Sina Lösschke, Vincent Möller and Andrew Okem, «IPCC, 2022. Summary for Policymakers», in: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, eds. Hans-Otto Pörtner, Debra C. Roberts, Melinda Tignor, Elvira Poloczanska, Katja Mintenbeck, Andrés Alegria, Marlies Craig, Stefanie Langsdorf, Sina Lösschke, Vincent Möller, Andrew Okem and Bardhyl Rama, Cambridge, UK and New York, pp. 3–33, here p. 19.

5 Joseph Campbell with Bill Moyers, *Power of Myth*, New York 1988, p. 126.