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Rising Waters, Rooted Memories: Cultural Heritage as a resource for climate adaptation in Sinking Cities

Hilke Marit Berger, Teresa Erbach, Annika Kuehn, Jan-Philipp Possmann, Gaby S. Langendijk Coastal communities around the world are on the frontline of dealing with climate change impacts, such as sea level rise. The research project "Sinking Cities: Cultural Heritage as a transformational resource" at the City Science Lab in Hamburg focuses on how cultural heritage can play a pivotal role in building resilient coastal communities. The aim of this pioneer project is to better understand the role of cultural heritage in social transformation processes and propose paths of action for socially integrated and fair climate adaptation. We argue that climate narratives are a continuum in cultural heritage and therefore should be considered more comprehensively by embracing historical sources as well as present cultural practices, like staging, arranging and performing as a form of knowledge production to broaden the view on climate narratives and tap into the transformative knowledge they offer.

INTRODUCTION

Today 2.4 billion people, roughly one third of the world's population, reside in coastal areas and 57 % of the world's population live in cities¹. In fifty years from now, cities like Bangkok, Jakarta, New Orleans or Bremen will no longer look the way we know them. "Parts of them would still be sticking above the water," says former NASA scientist James Hansen, "but you couldn't live there." ² Or could you? The answer to this question depends not only on the height of the sea level, but also on how people build, farm, eat and work. It depends on how much knowledge is spread about the rising waters and the associated dangers, and how risk and loss are dealt with in society. It depends on the question of what makes a place sufficiently livable for people. We therefore argue that culture plays a central role in adaptability but the integration into climate policy and strategy has been mostly overlooked.

Culture is defined here as symbolic activity that express meaning, beliefs, collective outlooks, including rituals, art and stories and from which strategies to respond to problems are devised and implemented³. Cultures are always rooted in local places and when climate change impacts these, cultures and communities change⁴. The negligence of culture in climate politics is all the more striking as cultural anthropologists agree that climate change and environmental hazards have always been a key catalyst for cultural invention⁵. Contrary to the popular notion of the current climate crisis as "the unimaginable" or a "hyper object" tending to evade our intellectual and emotional grasp, we argue that every culture has access to a repertoire of climate change narratives to draw images, words and lessons from. Taking texts about flooding and sea level change as an example, there is a large amount of texts (images, myth, poetry, fairy tales, lyrics, and many others) to be found across every continent and in every culture that developed along the water - all across the Mediterranean and on the Indian subcontinent, in Northern Europe, in East Asia or the Americas. These texts might be a rich resource: They could support people to deal with the consequences of climate change by demonstrating that people have always been looking for ways to deal with climate-related weather phenomena. They could serve as a conversation starter to negotiate current questions related to adaptation and reflect on issues of justice, risk prevention and ideas of a life worth living. They could also strengthen social cohesion as a decisive factor for the resilience of coastal areas, could give hope by showing that people in the past lived with and on water in very different ways and be a help for mourning what will be lost due to rising sea levels.

UNIVERSAL MYTHS AND LIMITS OF ADAPTATION

We recognize culture as an indispensable pillar of climate action aligned with the global call to the UNFCCC to include cultural heritage⁸, the arts and creative sectors in climate policy⁹. Especially within coastal communities there is a wealth of inclusive solutions at both local and global scales that prioritize humanity and the environment, drawing on cultural insights especially in regards to rising sea levels. While the public debate largely focuses on reducing CO2-emissions, it has become obvious that we need both: continuous effort in mitigation and much more awareness and public debate about climate adaptation. Already in 1999, the Intergovernmental Panel on Climate Change warned: "Mitigation cannot be the entire response to the threat of climate change. We will experience a substantial amount of

- Wang, 2018
 - Hertsgaard 2015
- Swidler 1986; Hays 1994
- Escobar 2001; Kirsch 2001
- 5 Northcott, 2008
- Ghosh, 2016
- 7 Morton 2013; Hoppe, 2021
- Cultural Heritage is understood as a repository of ideas, stories, images in the collective memory as well as material objects and places. The sense of identity and belonging within a community is largely formed through cultural heritage.
- 9 www.climateheritage.org/jwd

further climate change even if we make huge cuts. We should, therefore, be thinking seriously about how we can best adapt"10. Our ability to adapt to climate change of course is not limitless. If we do not undertake swift and deep mitigation on a global scale, as well as if we do not enhance the adaptive capacity of our societies and coastal systems, adaptation may no longer be an option¹¹. As a part of the concept of limits of adaptation, it is quite common to analyze the limits as universal, biological, economic or technological thresholds beyond which adaptation will not be possible¹². These limits are then seen as exogenous forces, predominantly outside of human control, and as such they are analyzed independently of social predispositions. Thomas et al.¹³ call them hard limits because they denote contexts where no form of adaptation can avoid intolerable risks, losses and damages. Even though such hard limits of adaptation obviously exist, we agree with Adger et al. 14 who argue that adaptation to climate change is more often limited by the values, perceptions, processes and power structures within society. Values and perceptions of a group of people are shaped by the culture of that community. Hence, if culture is a decisive factor in limits of adaptation it is also decisive for the ability of communities to transform and adapt. As culture is an evolving and fluid concept, so are the associated limits neither universal nor absolute: all of them are mutable in many ways and what may be a limit in one society may not be one in another. In the classification of Thomas et al.3 they can be included among the so-called soft limits, as these types of limits to adaptation can be changed through social, institutional or technological innovations and transformations.

Within the concept of limits of adaptation another crucial point are the goals of adaptation. These goals range from the conservation of the status quo to societal progress to safeguarding livelihood, or even to sustainably transforming societies. However, the goals of adaptation are rarely stated explicitly¹⁴. To us, the most productive approach seems to focus on the goal of enabling a desirable life for humans. What a desirable life is and how it can be possible under current and future climate change is once again strongly dependent on cultural aspects. It is an open question that cannot be answered universally and should be negotiated in every society confronted with the need to adapt to climate change, or transform towards a more resilient state. Any substantial and sustainable adaptation requires societal and cultural transformation towards a more ecologically balanced and socially integrated, fair society.

How culture affects adaptive pathways is demonstrated by Adger et al.¹⁵ who also draw the conclusion that cultural dimensions have to be addressed in adaptation processes. They propose appropriate-scale individual and community involvement in determining the goals of adaptation policies and plead for a better inclusion of cultural dimensions in scientific assessments of climate change impacts. However, if culture is such a crucial factor, it should not only be increasingly included in scientific assessment but also in research on adaptation measures as well as on transformations.

But how can cultural dimensions be given more consideration? And what role does the cultural sector, i.e., cultural institutions and cultural practitioners, play in this? We are investigating these questions in the "Sinking Cities" project by analyzing the social functions of cultural heritage in adaptation processes.

- 10 Parry et al., 1989
- Mechler et al., 2020;
 Thomas et al., 2021
- 12 u.a. Dessai et al. 2004; Oppenheimer 2005
- 13 Thomas et al., 2021
- 14 Adger et al., 2009
- 5 Adger et al., 2015

"Climate narratives", to borrow a term from Amitav Ghosh¹⁶ (2016), can be found across all continents and in virtually all cultures. Some of these narratives are endemic to one local society while others can be found in cultures worldwide, the universal deluge (Sintflut) being the prime example and one of the few universal myths recognized by cultural anthropology¹⁷. The motif of the sunken city equally resonates to cultures on all continents and in all epochs and is now a common trope in pop culture globally from Jules Verne to the Marvel Universe^{18,19}. But how can this resource be used to address current adaptation issues and strengthen local adaptation efforts at an individual and collective level?

The key question underpinning this pioneer project therefore is: How can the rich resource of cultural heritage be used to understand and overcome soft limits of adaptation and catalyze transformations? We argue that climate narratives are a continuum in cultural heritage and therefore should be considered more comprehensively by embracing historical sources as well as present cultural practices, like staging, arranging and performing as a form of knowledge production to broaden the view on climate narratives and tap into the transformative potential they offer.



In order to find out how this resource can be used to shift soft limits of adaptation we are collaborating with professionals from culture and community work who have expertise in creative work with cultural narratives. In collaboration with cultural institutions and locally-based scientists in Bremen, Alexandria and Jakarta we are setting up real world labs. Conceptualized as transformative research infrastructures, the three labs identify a similar challenge: namely a deeper understanding of the role of cultural heritage-based formats in processes of social transformation. Our main focus therefore lies in evaluating the different ways of mobilizing cultural heritage in the context of adaptation. Referring to Robinson's concept of 'thinking cities through elsewhere'²⁰ and studies operationalizing this

- 16 Amitav Ghosh, 2016
 - 7 Rohr, 2014
- 18 Dobraszczyk, 2017
- The term "climate narrative" is lately gaining momentum in various scientific communities. Through narratives we try to make sense of occurring events and phenomena and integrate them into our worldview by "telling stories" (Van der Leeuw, 2020). In regards to climate change these narratives are widely acknowledged to play the decisive role in motivating or demotivating climate action (Hinkel et al.,
- 20 Robinson, 2016

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concept in the realm of real-world laboratories²¹ we do choose a comparative approach to learn about climate change discourses and worldings in the different urban settings of Bremen, Jakarta and Alexandria and to critically reflect options for scalability and transferability. Thus, respecting the situatedness and specificity of the local labs, the research team will concentrate on four common and connected fields of knowledge: the social limits of adaptation and their local specificity in the three cities, the points of leverage for cultural work in the context of climate change adaptation, the iterative logic and infrastructures of real-world laboratories and transdisciplinary methods in the context of art-science collaborations.

The project will investigate the social limits to adaptation in each case study city and analyze how they depend on sociodemographic and cultural specifics. In this context we are interested in the social challenges people face, particularly related to mourning, social resilience and cohabitation.

- Mourning, for us, means understanding adaptation to climate change as saying goodbye to people, places and traditions as a society and as an individual. We are interested if societies (can) prepare for this collectively and develop appropriate cultural techniques.
- In addition, we are interested in how exercises in social resilience and the strengthening of democratic structures at the municipal level are locally present in order to prevent an intensification of the distribution struggles for urban space and social displacement.
- Furthermore, the "approaching" of the sea, or the complete or seasonal flooding of urban space requires a radical transformation of the way of life towards the cohabitation of human and other life forms as well as the adaptation of urban life to fauna and flora.

We aim to gain insight into the extent to which these and other individual and collective challenges play a role in the respective places, how local networks re-organize and what coping mechanisms are already present.

We analyze if cultural formats working with heritage on floods and climate change can have an effect in our three local contexts (for example, in processing grief) and empower people. We assume that they can impact knowledge as well as imagine and negotiate future perspectives, which may support overcoming soft limits to adaptation. We hope to learn more about which of these aspects are pivotal for cultural practitioners and for audiences. The Co-design, co-production and co-evaluation of the cultural formats – be it performances, lectures or dances – will take place as a collaborative process with researchers and artists in the real-world laboratories. Here, we are not only interested in the impact of the performances but also in the knowledge about social limits of adaptation gained in the production process itself.

Real-world laboratories are designed to be explicitly iterative. The laboratories can trigger interventions in the field and reconfigure local actor relations, infrastructures and environments. In turn, gained transformation knowledge flows back into the research process and builds a source of inspiration for the respective next real-world laboratory. In order

to connect the knowledge gained within and of spatially dispersed networks as well as to re-incorporate the creative and artistic approach of the project we create an online tool which enables curating, connecting and communicating data (stories) among the various project partners. In order to take responsibility on how cultural formats merge into the different local landscapes during but also after the laboratories, a concept of continuous maintenance²² of the online archive is being developed together with partners on site.

To interweave all threads, we use transdisciplinary methods in the context of art-science collaborations because we rely on the creativity and openness of thinking that is triggered by the dialogue between different disciplines and methods. We see the profoundly transdisciplinary nature of the project as both an opportunity and a challenge. The integration of a research design into cultural productions should be done in such a way that the cultural practitioners find the research aspect enriching and that artistic and scientific research complement each other productively. Here, we hope to gain valuable experience which can be used for future projects at the intersection of science and arts.

OUTLOOK

We understand this research as a contribution to practical climate adaptation endeavors. For any transformation to be fair, socially inclusive and sustainable, we consider it essential to take into account the lived reality and values of the social groups involved. As Geographer Patrick Nunn has highlighted: "Local residents who understand their local context are best positioned to design and drive adaptive solutions. Inevitably, as adaptation decision-making becomes more geographically distant and more top-down, it is likely to become less effective." We would argue that this specificity involves an understanding of culture as a defining element of collective identity, ethical values and emotional well-being. The real-life laboratories we will be conducting with local partners in three cities are thus to be understood as applied science, striving to test and develop practical tools for what might be called "cultural climate adaptation". Since

- 22 cf. Broto and Bulkeley, 2013; Broto und Westman, 2020
- 23 Nunn, 2019

our research network includes not only scientists but cultural institutions, social NGOs, curators and artists, we hope that the network we are building for this research project over the course of 2 years will sustain as a network of practical cultural climate adaptation endeavors. As a long-term perspective, we hope to establish sustainable working relationships between institutions and actors in several coastal cities, using and sharing the tools that have proven efficient and learning from each other's experiences. Coastal metropolises are particularly suited for a collaborative, trans-national approach as there already exist historical close ties between these cities. Multiple coastal city networks exist, and currently many new ones are forming around climate change challenges ²⁴.

We propose to use these as launch pads for networks on cultural climate adaptation. This trans-national cooperative approach offers an important path for a locally specific and culturally sensitive adaptation approach while also working towards global climate justice.

24 See for example
https://www.hanse.org/de
https://www.aivp.org/
https://www.iucn.org/
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Contacts

For any further information: JDU-BK@tudelft.nl https://journals.open.tudelft.nl/jdu/ www.deltaurbanism.org

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Authors

Hilke Marit Berger, HafenCity University Hamburg Teresa Erbach, RIFS Postdam Annika Kuehn, HafenCity University Hamburg Jan-Philipp Possmann, HafenCity University Hamburg Gaby S. Langendijk, Deltares

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