SPOOL

Deep Adaptation #1

The Spatial Dimension

V9/#2

ISSN 2215-0897

E-ISSN 2215-0900

VOLUME 9 . ISSUE 2

SPOOL

VOLUME 9 . ISSUE 2

Deep Adaptation #1

Editorial

Articles

SPOOL - Journal of Architecture and the Built Environment

SPOOL is a journal initiative in the field of 'architecture and the built environment'. It puts a strong emphasis on specific topics, so-called threads: Science of Architecture; Landscape Metropolis; Energy Innovation, Cyber-physical Architecture, Narratives and Expo. These topics refer to existing and upcoming research programmes/interests in Europe and beyond, and ensure a steady stream of potential copy. Treating these topics as threads within one journal allows SPOOL to focus on the interrelationship between the fields, something that is often lost in specialised journals. SPOOL welcomes within this framework original papers and associated open data on research that deal with interventions in architecture and the built environment by means of design, engineering and/or planning.

ISBN
978-90-832713-0-9

Cover images
Front and Back: Artistic rendering of Jade Danek's illustration 'Rise Up Marshall Islands' by Frank van der Hoeven.

Publisher
TU Delft

Contact
Principal: Frank van der Hoeven (info@openaccess.ac)

Design
Sirene Ontwerpers, Rotterdam, NL

ISSN 2215-0897
E-ISSN 2215-0900

www.spool.ac

EDITORIAL

Deep Adaptation - The Spatial Dimension

Daniel Zwangsleitner, Elettra Carnelli, Benedikt Boucsein

Technical University of Munich (Germany)

The future, which we thought we had maybe another decade to prepare for, is now suddenly here. In all likelihood, we can expect further crises such as the Covid-19 pandemic or of similar severity, especially in the context of climate change. They will render the 21st century radically different from the 20th: conventions, techniques, and social practices we are familiar with will disappear. Our responsibilities and roles as architects and urban planners will also change fundamentally in this process. We will work in increasingly volatile and vulnerable contexts and constellations.

Until now, many actors in politics, but also in academia and research, have played down or denied the vulnerability of our urban structures to the risks that are the direct effects of our current way of life. In the search for alternative and, in a sense, more realistic perspectives, Jem Bendell's concept of "Deep Adaptation", which has been widely and controversially discussed since its first publication in 2018, calls for a shift: he urges us to prepare for the collapse of certain systems that currently govern our lives – and to see this as an opportunity for positive change.

This change and the resulting challenges we are facing are primarily not technological, but above all social, economic, and organisational in nature. Moreover, they are highly interdependent and all-encompassing; they require systemic change, profound transformations, and adaptations of action. It is therefore not a question of developing technical solutions in isolation, but rather of fundamentally rethinking the way we live, operate, work, travel, and interact.

This issue of SPOOL seeks to explore the spatial dimension of the Deep Adaptation concept and how it can be put to use in the spatial disciplines such as urban planning, landscape planning, urban design, and architecture.

We have selected and compiled seven contributions that approach this topic from different angles and certainly also in different dimensions, scales, and impact.

Mathilda Rosengren, Franziska Polleter, Josefine Sarkez-Knudsen, and Flavia Alice Mameli approach Bendell's concept through everyday urban practices in contemporary Northern Europe. They propose rethinking the commons, co-living, and activism towards an engagement with urban environments that is conceptualized beyond solely human dimensions.

Ana Jayone Yarza Pérez explores the conjunction of Bendell's 4-pronged strategy with the Cultural Resilience Approach, and how this conjunction could lead to adaptive reuse processes that act as catalysts for peace-building and development processes in the cities of Acre and Jaffa, Israel.

Marie Ulber, Mona Mahall, and Asli Serbest address the limitations of purely technological approaches to adaptation. They propose a new understanding of architectural adaptation as an inclusive praxis for fostering new nature-culture-technology relationships.

Daniel Zwangsleitner, Elettra Carnelli, Elif-Simge Fettahoglu-Özgen, and Benedikt Boucsein explore how the Deep Adaptation Agenda can serve as a wake-up call and a framework for teaching in the spatial disciplines.

James Miller and Eric Nay propose an ontological upgrade and provide insights into Indigenous epistemologies and knowledge systems, specifically in Oceania, to rethink design and pedagogy of design through Indigenous perspectives and methods.

Uroš Pajović explores the way experiences of self-management, such as those in the former Yugoslavia, connected to spatial determinants can be a means and a goal of the reorganization of societies today.

Finally, Junichi Satoh and Taylor Stahle explore a reconfiguration of human life and settlements after a possible upheaval through short fiction. They argue that a societal collapse might be necessary for humanity and the earth to start anew and recover.

The contributions showcase the various ways this issue's topic can be profitably applied to the spatial disciplines. They also show how open to interpretation the concept of Deep Adaptation still is. It is up to future contributions to sharpen the concept's application to the organization and design of the built environment. Yet, we are hopeful that this issue is a first step, and that in the future the concept of Deep Adaptation will be further explored and operationalized in the spatial disciplines.

We would like to extend our gratitude to our external reviewers, on behalf of all our authors, editors, and readers, for your willingness to provide thoughtful and constructive reviews.

DOI

https://doi.org/10.47982/spool.2022.2.00

Urban Space and Everyday Adaptations

Rethinking commons, co-living, and activism for the Anthropocene City

Mathilda Rosengren [1], **Franziska Polleter** [2], **Josefine Sarkez-Knudsen** [3] **& Flavia Alice Mameli** [4]

[1] *Malmö University (Sweden)*
[2] *TU Berlin (Germany)*
[3] *Lund University (Sweden)*
[4] *University of Kassel (Germany)*

Abstract

This paper addresses Jem Bendell's concept of "deep adaptation" in the Anthropocene through the lens of everyday urban practices in contemporary Northern Europe. It proposes that this "deep adaptation" should be defined less in relation to a socio-ecological "collapse" and more through everyday occurrences in present-day urban environments.

Entering into a critical conversation with Bendell's conceptual "4 Rs" framework, the paper draws on primary data from several cities in Sweden and Germany to show how, in practice, *resilience* can be found in the "quiet activism" of leisure gardeners; how ingrained notions of restricted land use may be *relinquished* through "commoning" urban space; how novel constellations of co-living *restores* old ideas of intragenerational urban cohabitation; and, finally, how a path to *reconciliation* may be articulated through an ontological shift away from an anthropocentric urban planning, towards one that recognises other-than-human beings as legitimate dwellers in the urban landscape.

Accounting for urbanities of enmeshed societal, ecological, and spatial trajectories, the paper reveals an inhibiting anthropocentrism in Bendell's framework and ultimately points to how his "creatively constructed hope" for the future may be found, not in an impending global collapse, but in everyday adaptations and embodied acts that stretch far beyond the human.

Keywords

Anthropocene, Deep adaptation, Relinquishment, Urban commons, Urban co-living, Green activism, More-than-human urbanities, Urban design, Sweden, Germany

DOI

https://doi.org/10.47982/spool.2022.2.01

Introduction

Predicting the future has always held a special allure for humankind. From the personal to the planetary, predictions have served to instil a sense of control and security in an often ungraspable world. In the past, this labour fell on prophets, seers, and other clairvoyants, reading the "signs" of earth and skies and calling on the otherworldly to dare to make sense of the factual world to come. As Nostradamus, the doomsday prophet par excellence of the last millennium, put it: "With astrological calculations certifying the prophecy in the daytime; there is nothing more to the holiest future prediction than free courage" (Leoni, 2000 [1961], p.131). Today, with scientifically established, human-induced climate change gradually altering every aspect of life on Earth, many social scientific scholars have felt encouraged to predict the futurity of humanity at large, and the specific causes and effects that our joint survival will depend upon. Nevertheless, though the courage to face potential planetary doom is admirable, on multiple occasions these theoretical musings have fallen significantly short when applied to an actual, situated present rather than a predicted, universal future. In fact, in making haste to theorise our futures in the Anthropocene, social scientists run the risk of ignoring how *present-day* actions may play a part in changing these prophesied trajectories.

In this paper we seek to address one such disputed theory, Jem Bendell's (2020 [2018]) concept of "deep adaptation" in the Anthropocene, through the lens of everyday urban life and practices in contemporary Northern Europe[1].1 Drawing on empirical accounts from a number of cities in Sweden and Germany, we propose that such theorising need not uniquely be defined in relation to specific or dramatic turns of events or "collapses" (like Bendell does), but instead can be advantageously approached through everyday practices in each particular urban environment. Bendell's theory has been adequately critiqued elsewhere, with many sceptical of his doomsday prognosis of an "ecologically-induced societal collapse" and his "cherry picking" of scientific data to further this theory of an irrevocable Armageddon (Hayward et. al. 2019; Nicholas et al., 2020). We take these criticisms to heart while recognising the recent influence his theory has had on Western environmental activism, rather than outright rejecting Bendell's conceptual framework. In this piece, we enter into a constructive yet critical conversation with the four key notions that he presents: *resilience*, *relinquishment*, *restoration*, and *reconciliation*.

Bendell (2020) expresses the wish that these four "Rs" may act as a "useful framework for community dialogue in the face of climate change" (p.23). Firstly, he promotes a concept of *resilience* that focuses on how humans can develop psychologically and mentally resilient approaches as a means to tackle the coming threats and traumas that the supposed climate collapse will bring about – arguing against the climate science's common notion of resilience, which he sees as primarily focused on material development and progress. This, according to Bendell, appears counterproductive to a future in which material progress might not be an option. The latter point feeds into the second "R", *relinquishment*, in which Bendell argues for people and communities to "[let] go of assets, behaviours and beliefs" that each in their own way would worsen the impending collapse (p.22). Thirdly, *restoration* concerns how humans can rediscover and return to older, more sustainable ways of living that the current "hydrocarbon-fuelled civilisation [has] eroded" (p.22). This would mean reconnecting with the "natural" world, such as the rewilding of managed landscapes, adapting diets to seasonal produce, and a return to ways of socialising that encourages "increased community-level productivity and support" (p.23). Finally, *reconciliation* for Bendell means that humanity, to "avoid creating more harm by acting from suppressed panic" (p.23), has to accept its ultimate demise as part of the societal collapse to come.

Aside from the critique already recounted in the paragraphs above, we find a number of specific issues with Bendell's four "Rs". There is a seductive logic in how their functions are left implicit and vague while simultaneously being dogmatically focused on one singular, defining outcome – allowing readers to rally

1 With this narrow geographical focus, we do not seek to universalise the widely different and unequal experiences that the climate crisis has brought, and will increasingly bring, about. Rather, this focus allows for a minute contextualisation of everyday practices in specific urban and regional constellations, as is relevant to the argument of this article.

around a *common cause* (the societal-ecological collapse) without encountering the struggle of finding *common ground* in a world in which everyday, local experiences of the climate crisis vary greatly. This logic does little to further constructive responses to the issues at hand beyond its obvious theoretical aspirations. By only briefly explaining the concepts (both in the article itself and blog posts elsewhere), Bendell leaves it to the reader to discern what the four "Rs" can actually achieve. In addition, with his eyes set on a projected future that pivots around an inevitable (though also largely undefined) societal collapse, his four terms lack the definitional malleability that would also make them useful to local, immediate presents.

In the following sections, we rework Bendell's conceptual framework to respond to these concerns by reintroducing the present with all its complexity and uncertain futurities. In four empirical "snapshots", each one put in conversation with one "R", we show that *resilience* can be found in the "quiet activism" of leisure gardeners (Pottinger, 2017); how ingrained notions of private or restricted land use may be *relinquished* through less market-driven reappropriations of urban space as "commons" (Dellenbaugh et al., 2015); how novel constellations of co-living *restore* old ideas of intragenerational and communal cohabitation in the city (Dove, 2020); and, finally, how a path to *reconciliation* may be articulated through an ontological shift away from anthropocentric urban practices and planning, towards one that recognises non-human animals and plants as legitimate dwellers in the urban landscape (Hauck & Weisser, 2015). These accounts emphasise the importance of paying "attention to the creeping changes, the incremental transformation of nature and daily lives" that the Anthropocene invariably brings about (Castán Broto & Westman, 2019, p.128). Revealing both the problems as well as the potential in the current restructuring of enmeshed societal, ecological, and spatial urbanities, they point to how Bendell's (2020) wish for a "creatively constructed hope" for the future may be found, perhaps not in an impending global collapse, but in the ordinary adaptations and local actions of the present (p.16).

A brief note on case study selection and methodology

The empirical delineation used to address the four "Rs" is intentional. Seeking to rearticulate and expand on Bendell's framework, we have worked with empirical examples drawn from the authors' fieldwork in Germany and Sweden. The cases have been selected for how they resonate with certain "Rs" and how these resonations adequately illustrate the transformative potential of embodied, everyday urban practices – hence the choice of the "snapshot" descriptor, rather than making claims to present a more comprehensive, ethnographic picture. This separation does not, however, imply that there are no overlaps or connections to be found between the snapshots (these will be highlighted in the text). We recognise that any urban landscape contains far more complexities and contradictions than any framework, expanded or not, may fully cover. Nevertheless, for the sake of clarity of the argument, and in respecting the integrity of the four empirical snapshots, each R is put into a dialectical relation with one specific empirical example and the associated everyday practices.

The brevity and exploratory nature of each example denote that the propositions made are not to be seen as all-encompassing proclamations. Rather, the paper is intended as both a provocation and an invitation to scholars and practitioners – beyond the geographical locations presented here – to critically assess and rework frameworks with universalising aspirations like Bendell's, which may lack the necessary empirical grounding to appropriately sustain them when applied to present-day events. Methodologically, though the four snapshots derive from four different research projects at varying stages of completion, they all align in a shared commitment to ethnographically informed, qualitative urban research (Charmaz & Mitchell, 2007; Low 1996). All presented data has been generated through semi-structured and unstructured interviews with informants from a range of socio-demographic backgrounds[2] with additional participant observation and site visits where relevant and feasible.

2 Though often portrayed as such in mainstream media, our research has shown that the assumption that urban activism or ecologically conscious everyday practices are performed by a largely homogenous, most likely middle-class, group of people is many times thoroughly

Resilience

In this initial empirical snapshot, we address the first of Bendell's four concepts, resilience, through the practice of urban gardening. According to Bendell, the concept of resilience – one commonly used within climate science – engages primarily with material development and progress. This, in Bendell's eyes, is counterproductive to a future in which material progress might not be an option. In response, as part of adapting to climate change, he suggests a greater focus on the psychological aspects of resilience through reconsidering taken-for-granted or valued norms and behaviours (p. 22-23). Nevertheless, we find that this moving away from the material aspects of resilience simultaneously risks obscuring the multiplicity of resilient practices and their inherent relationship between mind and matter. In his genealogy of resilience, political scientist Philippe Bourbeau (2018) traces the concept's roots in multiple disciplines (from psychology, agriculture, engineering, and more recently the environmental sciences) and shows how it holds a multitude of definitions. Resilience, according to Bourbeau, connotes both "toughness" and "elasticity", and can be understood as the ability to absorb or recover from disturbances and reorganise with minimal loss.

Following Bourbeau, we adopt a concept of resilience that can simultaneously implicate its psychological and physical aspects. Remaining sceptical towards a dichotomous approach to resilience, as suggested by Bendell (2020, p.22), we instead engage with the elasticity of the concept – an engagement strongly supported by the findings from the empirical study of leisure gardeners in urban and peri-urban southern Sweden[3]. These gardeners are all seeking out more resilient methods for growing food in a response to current food systems and future climate change projections. Visiting the gardeners at their allotments in Scania, what became apparent was that changes in the physical and societal landscapes affected the ways in which the gardeners considered and adapted to climate change both psychologically and materially. In a display of "quiet activism" (Pottinger, 2017),[4] the gardeners literally cultivated resilience through small, everyday, embodied acts – both as a form of destabilisation of an agricultural status quo and as a concrete pathway to a more sustainable future.

To make a resilient garden

One of the major issues when addressing effects of climate change is future production and access to food. Current food and agricultural systems are causing environmental and societal problems. Monocultures, overproduction, and pesticides exploit and degrade the soil and ruin natural ecosystems and biodiversity along the way (Rosenzweig et al., 2001). Moreover, climate scientists warn that changes in climate and environment will have an increasingly negative impact on food security in the future (Mbow et al., 2019)[5].

misleading.

3 The empirical material we draw on in this section is part of an ongoing research project about gardening as a response to climate change, conducted by Josefine Sarkez-Knudsen. The fieldwork involves urban gardeners and takes place at urban and peri-urban cultivation sites in the cities of Lund, Malmö, and Höör in Scania, southern Sweden. In addition, data generated at Holma Folkhögskola, an adult education centre in Scania, also form part of the empirical material. The centre offers courses on gardening and agriculture and has a strong focus on sustainable forms of gardening, i.e. permaculture. Most of the projects' informants have a connection to the school as either current or previous attendants or teachers.

4 We borrow the term from geographer Laura Pottinger's (2017) work among seed savers in the United Kingdom, who select and save seeds to ensure biodiversity and challenge corporate control of food and seed systems. Pottinger characterises these embodied and tactile practices as "quiet activism", which stands in opposition to the common understanding of activism as vocal and antagonistic.

5 Food security is, admittedly, a pressing and constant issue in many societies around the world, mostly affecting vulnerable and low-income groups. Still, climate scientists in a recent IPCC report (Mbow et al., 2019) argue that climate change is worsening the situation and project

Though food security is hardly a new issue, these projections reveal the urgency in finding possible pathways to a more sustainable way of producing and accessing food. Together with a globally growing population, the agricultural industries are facing massive challenges in accommodating future demand. Consequently, as Bendell also argues (2020, p.8-9), this demands a rethinking of current food systems (Hulme, 2009). This is something that all the gardeners mentioned below were acutely aware of, guiding both their everyday actions as well as their long-term plans.

Recognising the above issues and reimagining existing systems require not only scientific and practical know-how but also a sense of curiosity and experimentation. Mats[6], a permaculture and self-sufficiency course participant in his thirties, emphasised these two qualities as part of developing alternative strategies for a more resilient food production. Mats is experimenting with nut trees with the plan to create a nut tree orchard in the future. It is still not common practice to cultivate nut trees in Scandinavia, and only a few types of nut trees thrive in the northern climate e.g., hazel, chestnuts, walnut, and the rarer Ginkgo Biloba. Furthermore, it requires a lot of knowledge, skill, and maintenance to cultivate nut trees into an orchard that provides an adequate yield (only establishing the orchard can take a good ten years or more). Nevertheless, when established, a mature nut tree requires very little maintenance and offers yields for up to 100 years (depending on the location and species). As a result, Mats argued that the meticulous work of cultivating nut trees was "a good investment", seeing it, in the long run, as a part of an alternative, resilient food production system for the future.[7]

Spending a decade establishing a nut tree orchard challenges contemporary Western, and particularly urban, notions of the spatio-temporalities of cultivation: how much time, space, and effort it actually takes to grow nuts, vegetables, fruits, and so on. Additionally, developing an intimate understanding of this and other aspects of cultivation practices might also be seen as an investment in future food security.[8] Ellen, an urban gardener in Malmö (figure 1), put it this way: "I think of this as a long-term project. I want to be good at this [cultivating], and be able to produce a lot of food, at least during the summer I want to produce the food I eat. I guess I just want to grow as much as I can!"[9] Ellen expressed a wish to "know" the food that she consumes and a desire to pursue a somewhat self-sufficient way of life. Like nut trees, growing vegetables and fruit in sufficient quantities to sustain yourself requires knowledge, practice, and experience. Regularly toiling away at her allotment in Malmö has raised Ellen's awareness of the time it takes to grow a single vegetable. According to her, this is a process that cannot, and should not, be pushed because "things take time. We need to accept that things take time. Plants and vegetables take time."[10] As such, through her material engagement with growing plants, Ellen has gained a novel, practical as well as conceptual understanding of how to relate to food production – one perhaps more adapted to deal with our current climate crisis and impending global food insecurities.

that it will be amplified in the future.

6 All names of the informants in this section have been anonymised.

7 J. Sarkez-Knudsen - Fieldnotes, February 13, 2020

8 The majority of the informants cultivate according to permaculture methods. Permaculture (permanent agriculture) is a resilient design system that aims to create an agricultural system that meets human needs without exploiting natural ecosystems and resources (Centemeri, 2019; Holmgren, 2002).

9 J. Sarkez-Knudsen - Field interview, Ellen, June 2020

10 J. Sarkez-Knudsen - Field interview, Ellen, June 2020

FIGURE 1 Urban gardening in Malmö

In sum, what the urban gardeners come to realise through the planning and practice of gardening itself is that cultivating an allotment, or an orchard, requires attention and care, week after week, season after season. In the way the slowness of gardening stands in contrast to industrialised farming and food industries, it may be understood as a form of unassuming, or "quiet", activism that questions the speed and distance of dominant food systems (Pottinger, 2017). Though perhaps small in scale, urban gardening challenges the fast-paced, large-scale food systems that supply urbanised lifestyles but equally distort the temporalities of cultivation, such as those experienced in everyday urban gardening practices. The practices bring to the fore that "everyday life remains shot through and traversed by great cosmic and vital rhythms: day and night, the months and the seasons, and still more precisely biological rhythms", in the words of Henri Lefebvre and Catherine Régulier (2004, p.73). Becoming (re)accustomed to, and accommodating for, temporalities other than those of Western-made mechanical time thus equally question the anthropocentric boundaries of this temporal construct (Jones, 2011). As such, a resilient future may be one that acknowledges and raises the ontological properties of urban plants to a level that equals or transcends the human ones –something we will return to in detail in the final R (*reconciliation*). What is more, in order to cultivate a resilient garden of a both material and psychological kind, particularly in dense urban environments, you need not only to adapt to alternative ideas of time but also of space. In the second of Bendell's "Rs", *relinquishment*, we consider what it means to give up on ingrained notions of land ownership and usage, in favour of embracing the urban commons.

Relinquishment

The *relinquishing* aspect of the Deep Adaptation framework proposes that people and communities should do away with possessions, convictions, and practices that fuel Bendell's supposedly impending socio-ecological collapse. Mostly, the term comes with ascetic and frugal connotations, and this is also how Bendell

seemingly employs it. Yet, instead of a concept built on renunciation, we propose that it can equally be read as a more freeing, less disciplined "letting go" that allows for both ideas and materialities to be approached and developed in different, less socio-ecologically disastrous ways. Seen in this light, relinquishment becomes an intriguing and important notion to "think with" when considering alternatives to the present-day appropriation and development of urban space (particularly as the construction industry remains one of the primary sources of atmospheric CO_2 pollution [see Global Alliance for Buildings and Construction, 2020]). There are few spatial practices that more succinctly question how to let go of dominant, Western ownership and land-use structures than "commoning". In 1990, political scientist Elinor Ostrom published the design principles of successful common property management in the influential *Governing the Commons* (1990). Since then, by drawing on Ostrom's principles, the concept of the "urban commons" has been particularly tried and tested in spatial approaches incorporating post-growth concepts, common good economies, and forms of cooperative organisation (Dellenbaugh et al., 2015; Helfrich, 2014).

That being said, we are wary of approaching the concept of the commons as a panacea for urban spatial, social, and ecological inequalities. As historian Daniel R. Curtis' exposé of the equitability of medieval commons concludes, the "powers [of said commons] were entirely dictated by the social context, and dependent on the layers of power and social relations on top of which they were placed" (2016, p.658). This emphasises the notion of approaching the commons as a verb, as a relational activity, rather than a static asset (Linebaugh, 2008, p.79). Accordingly, we understand "commoning" as a means to democratically renegotiate, at once, spatial practices and economic processes towards more sustainable societies. In Berlin, the site of our second empirical snapshot, a plethora of spatial commons practices point to a range of ways to expand Bendell's idea of relinquishment – both in ideas of restricted property rights and the material land itself. In their plurality, the city's urban commons practices emerge as forms of everyday, open-minded resistance. Commoning thus positions relinquishment as part of a resistance that does not imply a complete rejection of current urban land uses and rights, but rather encourages productive reinterpretations and transformations of prevailing urban conditions. Here we home in on two cases that highlight how commoning and the notion of the commons balance these multiple expressions of relinquishment in the German capital.[11]

To let go of the private - commoning for urban spaces

The present urban fabric of Berlin is an example par excellence of how commoning not only engages with the materialities of unused or reappropriated land, but also represents a process in which dominant ideas of property and work management are relinquished and reimagined to fit new socio-political and ecological realities. In post-reunification Berlin, by being willing to relinquish widespread ideas of private interest and short-term profiteering, urban citizens engaged in diverse commoning projects developed alternatives of common ownership and flat hierarchies as their praxis. Potentially gaining much more than they "lose" when forgoing a dominant, for-profit structure, the committed work of activists and civil society lies at the core of these urban practices – stretching from real estate commoning projects such as artist collective ExRotaprint (Brahm & Schliesser, n.d.) to urban gardening initiatives like the Gemeinschaftsgarten Moritzplatz (Common Grounds, 2020).

11 The Berlin snapshot is drawn from Flavia Alice Mameli's extensive research on the city's commons and open spaces.

FIGURE 2 Park am Gleisdreieck

One of the city's most striking examples of urban commoning is the wasteland-turned-park story of the Park am Gleisdreieck. A former railway area in the centre of Berlin, Gleisdreieck was redeveloped in the 2000s to a much-used, prize-winning "citizens' park of the 21st century" (Grosch & Petrow, 2015, p.6). Caught in the geo-political stalemate between West Berlin and East Berlin in the post-war years, the disused railway yard became a 60 hectare urban industrial wasteland closed off to the public on both sides of the wall. It was successively reappropriated by ruderal vegetation and informally used by more adventurous West Berliners. The fact that the area was not consumed by West Berlin's automotive infrastructural expansions of the 1970-80s, nor during the reunited Berlin's building boom in the 1990s, is the consequence of four decades of resistance by local citizens. Many of these citizen activists had been using the wasteland as an informal recreational common and used their intimate, everyday knowledge of the space to argue for it to be safeguarded from a redevelopment that would deny both a human public as well as non-human animals and plants their rights to the space (Lachmund 2013). After moving to a West Berlin street close to the wasteland in the early 1980s, one activist recalled how he and his flatmates,

...always went for walks at Gleisdreieck, it was an adventure playground. We would climb over the wall from the Schöneberg side and walk across the area from there. The railway workers often told us off, but they never did anything. ... We weren't really aware of what was special about the area, it was just fun to walk around and explore. At that time, there were a lot of people out and about. We used to give each other the wink – everyone knew that everyone else was also there illegally (Lichtenstein & Mameli, 2015, p.155).

Over the decades, these locals formed activist groups (such as BI Westtangete and the Arbeitsgemeinschaft Gleisdreieck among others) which drew on a blend of political, legal, scientific, and social means to make their case, successfully adapting the strategies to the changing times but always grounding them in the everyday, civil engagement that they had with the wasteland. As another activist put it: "Generally, I believe that we have achieved quite a lot. That the whole park would not have been built if not for the commitment of the citizens..." (Lichtenstein & Mameli, 2015, p.155). Today, the Park am Gleisdreieck sports over 30 hectares of green open space always accessible to the public, providing a green "bridge" between previously divided city districts (figure 2). What is more, from an ecological viewpoint, the park is part of the north-south green corridor ("Nord-Süd-Grünzug") of Berlin, which connects multiple green spaces, providing a much-needed infrastructure for urban non-human animals and plants to move in and out of the city. The successful commoning effort of the Park am Gleisdreieck, which at least for now has saved an exceptional socio-ecological urban landscape from the threat of private interests and redevelopment, has set an example for what can be achieved in the city.

Nevertheless, as argued earlier, urban commoning needs to be approached as a continuous becoming of everyday practices rather than a static spatial fix attained at a specific moment in time. What the cases in Berlin show is that the relinquishing of certain material and societal structures simultaneously calls for the insertion of other values, practices, and subjects to replace what has been "let go" of – something that remains considerably lacking in Bendell's account. In the case of the Park am Gleisdreieck, this replacement partially relies on more highly valuing ontologies that go beyond the human – weaving the ecological tightly with the political and social intentions of the activist groups' commoning practices. This entwinement is clearly visible in our second, more recent, case: the citizens' initiative 100% Tempelhofer Feld. The initiative is committed to the preservation of the 380 hectare open space of the old Tempelhof airfield, which presently provides the locals with a vast common space to do sports, socialise, garden, etc., as well as offering the endangered skylark (*Alauda arvensis*) nesting places in the tall grasses (Grün Berlin, n.d.). Drawing inspiration from previous local activism, the initiative has defended the site as a vital urban space by emphasising its simultaneously ecological, recreational, and cultural-historical values (100% Tempelhofer Feld, 2020). Yet, though the initiative seems to have a majority of Berliners on its side – in 2014 they called, and overwhelmingly won, a referendum on the matter – the pressures to at least partially redevelop the inner-city area remain.[12] This pressure has resulted in a continuous and evolving engagement with the site on the part of the activists, who in their commoning practices need to be constantly alert to political shifts and planning policies.

The uncertainties around the Tempelhofer Feld show how, though the integration of commons-based initiatives is increasingly required in planning theory, it remains a struggle to implement them in practice. The human geographers Samuel Mössner and Lelina Kettner found that, contrary to what the traditional neoliberal criticism implies, administrative apparatuses are not necessarily adversely inclined to commoning practices (Kettner & Mössner, 2020). It is rather that, within the framework of routine administrative action, these kinds of initiatives are often marginalised. As emphasised in the above examples, the intimate, present knowledge of an area or community structure, gained through the everyday engagement with such space, forms a vital part in propositions on why and how to relinquish ingrained notions of ownership

12 Most recently, the Free Democratic Party (FPD) proposed to build 12,000 new apartments on the former airfield in what 100% Tempelhofer Feld calls a blatant move to attract voters in the upcoming 2021 election (100% Tempelhofer Feld, 2020).

and usage of space. Ultimately, ideas situated around the commons and commoning function as outlines for how a self-determined and ecologically responsible society may come into being. A relinquishing of urban space through commoning is a constant renegotiation of ideas, rights, and materialities in which, in order to successfully let go of the "old ones", an intimate knowledge of the land you want to "common" is a prerequisite. What is more, just like we saw in our reworking of Bendell's *resilience*, our notion of relinquishing also partially relies on valuing ontologies that reach beyond the human urban dweller. What is intriguing about these urban commoning practices is that they propose structural solutions in which the spatial demands of humans and other-than-humans in the city are not put in opposition to each other but instead are seen as co-creators of a sustainable present, as well as potential futures. This glaring blind spot of Bendell's – his difficulty in imagining a deep adaptation that does not solely pivot around articulately human actors and actions – will be addressed in the final section of this paper. Before this, however, we move away from Berlin's public domain to explore what may happen when old ways of communal living are restored in the city's more "personal" spheres.

Restoration

Bendell's third key concept, *restoration*, argues for the return to earlier, more sustainable ways of living (2020, p.22). Deeming our Western lifestyles as untenable in their current extractive and exploitative forms, he calls for a revival of past ideas of how to organise and approach housing to ensure a remotely liveable planet for coming generations. Nevertheless, as we have emphasised throughout this text, when focusing on situated, everyday urban practices we discover that such "older" notions are already being tested and reworked for contemporary lifestyles. In the empirical example below, we will see how ideas of intragenerational cohabitation in Berlin may form one such part in a larger readaptation of former means of living for, so to say, new ways of life.[13] Throughout the history of humankind, an extended sharing of living space has been the norm rather than the exception. For instance, in pre-industrial Northern Europe, a household generally consisted of a large constellation of intra- and intergenerational family members and a large number of servants (Egner, 1976, p.281). These arrangements changed drastically with the Industrial Revolution and the increasing urbanisation of Europe. With it, living on your own or in smaller households progressively became common practice (Fedrowitz & Gailing, 2003, p.21). The 19th century already saw reactions against this change in societal constellations, with utopian ideas being formulated for urban housing developments that were to encourage a return to a more collective way of life (Bertels, 1990, p.8). Nevertheless, the dominant mode of habitation in 20th century Germany remained that of a nuclear family household (Fedrowitz & Gailing, 2003, p.23). In conjunction with the post-war student movements of the late 1960s and early 1970s, which sought to break out of old civic conventions, so-called "Kommunen"[14] were established to protest old structures and habits (Bookhagen, 1969).

Nowadays, shared urban living arrangements do not so often spring from political convictions as from the pragmatic issue of housing shortages in sought-after urban areas – Berlin, the field city of our empirical snapshot, again being a prime example of this. Yet, beyond such immediate practicalities, as we will see below, these arrangements may also display a wish to "live differently" in terms of societal norms. Ricarda Pätzold (2019) at the German Institute of Urban Affairs defines collective living as a conscious decision to

13 Once again, we want to make clear that this is a highly contextualised reflection, focusing solely on the historical, social, and cultural setting of Northern Europe.

14 The "Kommune" was conceived of as a place where like-minded individuals (not necessarily related or romantically involved) lived together autonomously in a house or flat as part of a group.

commit to, and live within, a community structure other than the nuclear family. As such, collective living also differs from a standard house share, which is usually founded on a much more temporary, and socially less committed basis (Pätzold, 2019, p.175). What is more, according to Pätzold (and resonating strongly with the concerns of the resilient gardeners in section one), the turn to collective living also reflects the growing awareness of and concerns regarding the causes and effects of climate change, with individuals, couples, and families rethinking their living arrangements to lower their everyday environmental impact (2019, p.176). Most interestingly, as the following empirical snapshot highlights, even in situations in which restoring "old" approaches to everyday life and collective housing might not originate in climate concerns, this move towards another kind of living may trigger the environmental consciousness and behaviours that Bendell sees as essential for future human survival.

To reimagine the intragenerational household

During a recent fieldwork stint in Berlin, we spoke to two young families – Laura with her partner Dominik and their toddler Henri, and Laura's sister, Lisa and her partner Carl with their baby Pauline – who together had formed a newly-constituted, collective household.[15] On the first of January 2021, during the peak of the second pandemic lockdown in Germany, the families had moved in together in a large apartment in Berlin. After spending many years in other German and European cities, Laura and Dominik had moved to the city about a year before and, when Lisa and Carl also sought to relocate there, the couples had been looking to rent or buy separate properties near each other. When their individual flat searches remained unsuccessful, the two sisters brought up the idea of moving in together. The idea had sprung from the common dream of living in a community, as a big family, in which their children could grow up together. This morphed into more specific discussions of how to share a household and what practical requirements were required from the flat itself. Larger flats with both open, shared spaces as well as more private nooks are rarely found on the Berlin rental housing market. In the end, the sisters narrowed their search to five-plus-room flats and finally, they told us, they found a 220-square meter apartment for rent deemed large enough to fit both families.

What had started as a somewhat spontaneous experiment thus quickly became a solidified endeavour. And though the initial grounds for moving in together had been predominantly social, as Pätzold noted above, even after cohabiting for only a month the household had noticed how the set-up had had an encouraging effect on reducing the use of natural resources in their everyday lives. As Laura put it,

Honestly, I don't think it [climate consciousness] was the main reason why we moved in together. But it has been a pleasant side effect and I think we all have benefitted from it. We are washing our laundry together and sharing everything in terms of household items. For example, we [Laura and her partner] did not own a fridge [before], now we are sharing one. However, we have three washing machines now standing in the storage [space], but we use just one. We should think about giving some away, as we don't need them in the shared household![16]

Aside from the obvious material aspects, the intragenerational collective recognised several changes in their daily habits. They found that co-living affected their self-perception as well as their awareness of their climate footprint both as individuals and as a group. Laura, who has the overall responsibility for the laundry, noted that she uses the washing machine as often as before when there were only three of them, with the main difference being that the machine is now always full. As they are all sharing the bills for amenities, Lisa also tells how they all have become much more aware of how they use resources in their daily lives:

15 The interview was conducted by Franziska Polleter as part of her ongoing doctoral research on collective housing in Germany.

16 The interview was conducted by Franziska Polleter as part of her ongoing doctoral research on collective housing in Germany.

how they consciously regulate the temperature for the whole flat depending on the use of the room, or that everyone takes a quick shower as they just have one proper bathroom. Moreover, Lisa hopes that this will have a positive effect on the children as they grow up in a household with a stronger awareness of the use of resources.[17]

These unassuming yet beneficial adjustments to everyday practices, described by the sisters, are supported by architect Caroline Dove's (2020) recent study of multi-generational housing projects. Just like the experience of the Berlin household, Dove sees that shared households bring about many other positive effects besides the social ones, such as health benefits, financial savings, as well as a significant reduction of greenhouse gas emissions and a household's general ecological footprint (see also Treeck & Ambach, 2019). This observation is backed up by Lisa's partner, Carl, who recounts how sharing groceries and preparing and eating meals together saves a lot of time and energy, while reducing food waste.[18] Nevertheless, this does not mean that the social aspect of merging the two households is any less important to a climate-conscious future. As we have hinted at above, the families' decision to live together can be understood as a "rediscovery" of historical socialities of everyday life – playing into Bendell's (2020) proposal that the restoration of past social practices can help us to weather storms of the future (both figuratively and literally). This is also true in the present, in the form of the pandemic "storm" that the collective household was facing. Even though it was still early days for the new household, they had no regrets about their decision to move in together during such a turbulent time. In fact, the conviviality of the shared household was helping them all to cope during another national lockdown.[19]

To conclude, what the families were experiencing was not solely a rose-tinted restoring of "old ways" of living à la Bendell but rather, echoing Bourbeau (2018), a more elastic rearticulation of these practices to suit a turbulent present. The everyday practices of the cohabitants illustrate how collective housing may provide a solution both to the "need to overcome isolation, and [the] demand for sustainable lifestyles today and [in] the future" called for by environmental psychologists Dick Vestbro and Liisa Horelli (2012, p. 331). Nevertheless, the experiences of Lisa, Carl, Laura, and Dominik also hint at the structural changes needed to budge the deep-seated onus of nuclear families in European cities. For instance, the couples recalled the difficulties they encountered during their search for a suitable flat. For one, the current housing market in Berlin has very little to offer in terms of apartments of the size and typology that comfortably suit collective living arrangements. Secondly, both landlords, and society at large, still display a bias against co-living alternatives. In fact, the couples had to fib a little bit to get invitations to see potential flats, having several times been rejected at the application stage due to their cohabitation idea. Consequently, just as in the previously addressed *resilience* and *relinquishment* cases, the change encouraged by *restoration* pushes material, structural, and conceptual boundaries in urban space. The everyday changes made by those humans reconsidering and experimenting with alternative ways of urban living play an essential part in engendering this change. Nonetheless, in the fourth and final section we propose that to move towards a truly transformative "adaptation" of urban space in the Anthropocene, these boundaries, and Bendell's framework with them, need to be pushed even further. And to do so we have to *reconcile* with a necessary ontological shift that goes far beyond the human.

17 F. Polleter - Field interview, Lisa, January 2021

18 F. Polleter - Field interview, Carl, January 2021

19 F. Polleter - Field interview, Laura, January 2021

Reconciliation

The final part of our empirical interrogation deals with the fourth "R" of Bendell's conceptual framework, *reconciliation*. As has been hinted at throughout the text, this R is perhaps the most all-encompassing of the four, relating in one way or another to all the previous empirical snapshots. First, resilience in urban gardening relies on learning from and appropriately adopting the alternative temporal qualities and adaptive strengths that urban ecological constellations afford. Second, the *relinquishing* of the onus on private property and the embracing of quotidian activities of commoning also questions the anthropocentric, extractive claim to superiority that this form of "modern" society is invariably built upon. Third, the *restoring* of earlier practices of cohabitation to enable more sustainable human urban dwelling also calls for re-examining the ways in which we have been living, not only with other humans but equally in tune with the temporal rhythms and spatial demands of other-than-humans.

An addition to the revised 2020 version of the original paper, reconciliation is also the least developed of the four terms. Simply put, Bendell uses the concept to argue that humanity must make peace with its own mortality and ultimate demise caused by the impending social collapse and climate crisis. Yet, once again, he leaves it to the reader to untangle what this rather bleak statement may mean in practice. Embracing this liberty of interpretation, we want to introduce a less sombre, but nonetheless existentially challenging, path of reconciliation. Such a path is predicated upon an ontological shift, away from anthropocentric urban practices and towards those that recognise non-human animals, plants, fungi and so forth as valued residents and legitimate agents of any urban landscape. A navel-gazing focus on how to reconcile ourselves with our own mortality only works to further the anthropocentrism that has put "us" in the current climatological predicament in the first place. Instead, to borrow environmental philosopher Val Plumwood's (2002) much-used expression, what we truly need to reconcile ourselves to is "our ecological embeddedness" (p.3). Echoing the various indigenous ontic-epistemic approaches increasingly addressed in planning theory elsewhere in the world (see, for instance, Cooke et al., 2020), our reinterpretation of Bendell's concept aligns itself with Donna Haraway's (2015) proposition that to "make kin" with other-than-human beings is both the ultimate challenge and the definitive redemption that humanity is facing today.

For Haraway and many other multispecies scholars with her, it is in the everyday encounters and intimate more-than-human interactions that recognition and acceptance of subjectivities beyond the human may be cultivated – that is, where the foundation for humanity's ontological reconciliation with the living world around us is being laid (Tsing, 2012; van Doreen et al. 2016). A niche branch of urban landscape architecture has kept such expanded notions of agency, embodiment, and spatio-temporality of plants at the forefront of their practices for many decades.[20] More recently, a growing number of urban social theorists (Metzger, 2015; Mubi Brighenti & Pavoni, 2020) and practitioners (Hauck & Weisser, 2015) have sought to include, and actively build for, animals in urban landscapes. Yet, as environmental sociologist Jens Lachmund (2004) observes, "[a]lthough increasingly backed by global discourses and policies, ecological planning has only been successfully implemented in a limited number of cities" (p.242). Our recent research confirms that, despite the "boom" in green infrastructure investments, green roofs and walls, and the like, many "conventional" planning practices still only encourage largely ecological representations and ultimately only provide a shallow engagement with the other-than-human urbanities (Rosengren, 2020a, p.147-157). In short, reconciling with this significant ontological transition in urban environments demands a shift not solely in planning theory, but also in our fundamental attunement to everyday involvement with other urban beings. The following empirical snapshot from Gothenburg, Sweden, illustrates how a slight change in everyday

20 See for instance, Cesare Leonardi and Franca Stagi's (2019 [1983]) seasonal engagement with urban trees in Italy, Gilles Clément's (1997) "jardins en mouvement", gardens in motion, in France, and more recently offices such as the Atelier LeBalto in Germany.

perceptions can considerably alter the relationship between urban trees and professionals, pushing much larger boundaries of who, and what, is considered an urban subject.[21]

To learn to perceive a more-than-human urbanity

During the past decade, Gothenburg has been playing catch up to accommodate for the influx of people moving to the city. Lack of housing and inadequate commuter infrastructure has long plagued the inner-city areas and, as Sweden's second largest city prepares to celebrate its 400th anniversary (delayed by the pandemic until 2023), it is also undergoing one of its most intense construction spells since its foundation in 1621 (Caldenby, 2013, p.70). One of the most encompassing projects is the ambitious infrastructural investment, Västlänken. A new commuter underground railway system set to run below the whole inner city[22] (Göteborgs Stad, n.d.), Västlänken came up against fierce criticism long before its construction began in 2018. One particularly vocal opponent was Nätverket Trädplan ("the Tree Plan Network"), a citizen activist group fighting what they deemed asw unnecessary fellings of Gothenburg's mature urban trees. The city has a long history of laypeople opposing infringements on green spaces in their neighbourhoods (Rosengren, 2020b, p.232, Rosengren 2020a, p.88). What made Trädplan stand out was how it had managed to consolidate these older environmental struggles, connecting different activist groups and their localised interventions to a city-wide, politically and scientifically well-informed network of resistance.[23] Using all legal means at their disposal, loudly disputing the municipality's vision at public meetings, as well as holding vigils and strapping signs saying "Let me live!" around the thick trunks of the threatened deciduous trees[24] (figure 3), Trädplan were rallying against the planned felling or "dubious removal" of 500 inner-city trees standing in the way of *Västlänken* (Göteborgs Posten, 2015).[25]

These actions publicly drove home the living connection Gothenburg's trees (some older than 200 years) forged between the city's past, present, and potential future. Here, the kernel of Trädplan's opposition was that Gothenburg's planners (of Västlänken and elsewhere) did not truly consider the ontological needs of the trees to thrive in the city. What is more, in their way of being "between immediately mobile mammality and relatively immobile geology" (Ryan, 2012, p.108), the trees' fates were felt to intersect with previous urban mismanagement and displacements of working-class communities still keenly felt by many citizens.[26] In defending the trees, Trädplan had thus become an "ecological killjoy" of Gothenburg's planning visions – making visible and validating urban beings of predominantly ignored socio-economic or ontological standing, while poking holes and exposing injustices in dominant anthropocentric notions of

21 The empirical data that we draw on here is derived from Mathilda Rosengren's year-long doctoral fieldwork in Gothenburg, Sweden, in 2016-17. The research formed part of the European Research Council funded project Rethinking Urban Nature based at the University of Cambridge.

22 Gothenburg's present public transport system predominantly consists of overground trams, trains, and buses.

23 M. Rosengren - Semi-structured interview, Trädplan member & founder, January 2017

24 M. Rosengren - Semi-structured interview, Trädplan member & founder, January 2017
M. Rosengren - Semi-structured interview, Member of Trädplan & local organisation, February 2017
M. Rosengren - Participant Observations, Public meeting "Flytta stora träd" (To move large trees), City of Gothenburg's "Show room", September 2017

25 Though never confirmed by the municipality, the fact that they at all decided to undertake the costly and never-before trialled moving of hundreds of trees (to other parts in the city or to rural nurseries to then be replanted after the construction work was done) instead of just felling them, which seems to have been the initial plan, is a testament to the tenacity of the members of Trädplan.

26 M. Rosengren - Unstructured interview and site visit, Trädplan member & founder, May 2017

urban progress.[27] These disturbances were not taken lightly by the municipality, with Trädplan portrayed many times as tiresome troublemakers. Yet, many planners and landscape architects also displayed a great deal of empathy, if not for the activists themselves, then at least for the urban trees.[28] Their affective relationship to trees was discussed in the breaks of many a meeting, with a landscape architect once joking: "If you, as a child, cry at the felling of trees, then you become a landscape architect later [in life]", their colleagues nodding in agreement.[29] And, during a televised evening news report in February 2017, a municipal worker being interviewed exclaimed: "I didn't even see the trees before I started [working for *Västlänken*]. Now they are everywhere!"[30]

FIGURE 3 "Let me live!"

27 Feminist scholar Sara Ahmed's (2010) "killjoy", most well-known in its feminist incarnation, is someone who objects to a "collectively invested form of life" (such as the patriarchy) by pointing out the failings of such a system and who is consequently seen to be disturbing the collective peace by forcing this clear-sightedness on others. For an in-depth discussion of the expanded notion of the killjoy used here, with the urban nature activist or scientist as an "ecological killjoy", see Rosengren, 2020a, pp.232-266.

28 M. Rosengren - Participant Observations, Urban Planning Meetings, Gothenburg City Planning Office, December 2016, January & February 2017

29 M. Rosengren - Participant Observations, Urban planning meetings, Landscape architecture office, December 2016

30 M. Rosengren - Field notes, Municipal employee, Rapport [TV evening news report], Gothenburg, Sweden

In sum, though municipal workers, planners, and architects had most likely encountered plenty of trees in Gothenburg before, thanks to Trädplan's persistent protests, they began to sense their ontological status in the cityscape – they suddenly *saw* them. From their own accounts, this had clearly produced some form of shift to their approach to the trees themselves as well as in their perception of the immediate urbanity around them. The professionals were thus in the process of attuning their present, largely anthropocentric practices to the more-than-human urbanity that now unfolded around them in their everyday movements through the cityscape. Though perhaps a minor, personal change, this shift could be seen as a first, tentative step toward "making kin" with the urban trees (Haraway, 2015). Our proposition, then, is that *reconciliation* may lie not in the exclusion of humanity from a post-collapse future, as argued by Bendell (2020, p. 23), but in the inclusion of other ontologies and epistemologies, beings, and belongings. It constitutes an active "bringing back together" of a world in which being human is but one of many subjectivities. A pursuit that, in practice, may very well start with the noticing of one particular urban tree.

Conclusion

Functioning as constructive provocations to Bendell's doomsday prognosis of an impending socio-ecological collapse, our four empirical snapshots allow for glimpses into how the socio-spatial practices of commoning, co-living, and activism may be fruitfully reconsidered for the urban Anthropocene. Practically, they show that the keys to possibly avoiding Bendell's collapse can be found in unassuming, yet nevertheless important, everyday actions in urban spaces. In this, each urban environment offers situated expressions of adaptations tied to its specificities, with each embodied act's unique mix of social, historical, cultural, political, and ecological facets defining the "everyday". Simultaneously, however, we can also discern some more overarching propositions for the future in these empirically grounded accounts. In homing in on everyday embodied urban practices – be they in the form of gardening, commoning, co-habiting, or advocating for other-than-human beings – we discern how they may become the precursors to the fundamental changes, or "deep adaptations", required to sustain human and other-than-human life on planet Earth. Here then, in borrowing from Michel de Certeau's (1988) musings on ordinary life[31], "everyday practices, 'ways of operating' or doing things, no longer appear as merely the obscure background of social activity" (p.xi). Instead, they surge to the fore, illustrating in practical terms how seemingly unassuming human and other-than-human actions and relations come to alter or retain urban landscapes on public and private, local and global scales. In highlighting these urban adaptations and agencies, we have pointed out both the potentialities and shortcomings of Bendell's universalising framework of *resilience*, *relinquishment*, *restorations*, and *reconciliation*. Particularly exposed are the anthropocentric limitations that seemingly define Bendell's concept. These limits of imagination restrict the agential capacities, of humans and other-than-humans alike, needed to tackle the framework's intended outcome: to produce and maintain a "creatively constructed hope" to assuage Bendell's impending societal collapse (2020, p.16). Geographer Lesley Head (2016) emphasises the proactive trait of acting as she, like Bendell, attempts to construct hope in the middle of a climate crisis. "Hope [in the Anthropocene] is practised and performed," Head notes, "it is a sort of hybrid, vernacular collective worked out in everyday practice and experience" (p.90). In light of our empirical examples, perhaps this definition of hope, which has "acting" rather than "collapse" as its defining feature, would be more fruitful to adopt than Bendell's (2020) "creatively constructed" one (p.16). Performing hope in Head's way encourages everyday practices that underpin more intimate understandings of our affective and embodied, spatial and temporal, relations with a planet of which we are all invariably a part. As such, they serve as important reminders that even in urban contexts – seemingly detached from "natural" worlds – actions may be local in their iteration yet implicitly global in their impact.

31 We want to thank Reviewer 1 for highlighting this intellectual synergy.

References

100% Tempelhofer Feld. (2020, October 3) *An der Realität vorbei - die FDP*. https://www.thf100.de/pressemitteilungen-der-initiative-lesen/an-der-realit%C3%A4t-vorbei-die-fdp.html

Ahmed, S. (2010). Happy Objects. In M. Gregg & G. J. Seigworth (Eds.), *The affected theory reader* (pp. 29–51). Duke University Press.

Bendell, J. (2020 [2018]). *Deep Adaptation: A Map for Navigating Climate Tragedy*. IFLAS Occasional Paper 2. Revised 2nd Edition.

Bertels, L. (1990). Gemeinschaftsformen in der modernen Stadt. Leske + Budrich.

Bookhagen, C. (1969). Kommune 2: Versuch der Revolutionierung des bürgerlichen Individuums; kollektives Leben mit politischer Arbeit verbinden!. Oberbaumpresse.

Bourbeau, P. (2018). A Genealogy of Resilience. *International Political Sociology*, *12*(1), 19-35.

Brahm, D. & Schliesser, L. (n.d.). *ExRotaprint Project Description*. https://www.exrotaprint.de/en/exrotaprint-ggmbh/

Caldenby, C. (2013). Det är Stor Skillnad med Arkitekter i Ledningen. *Arkitektur. 6*. 70–77.

Castán Broto, V. & Westman, L. (2019). *Urban Sustainability and Justice*. Zed Books.

Centemeri, L. (2019). Health and the environment in ecological transition: the case of the permaculture movement. In *Making Sense of Health, Disease, and the Environment in Cross-Cultural History: The Arabic-Islamic World, China, Europe, and North America*. (pp. 309-331) Springer.

Charmaz, K. & Mitchell R. G. (2007) Grounded Theory in Ethnography. In P. Atkinson, A. Coffey, S. Delamont, J. Lofland, and L. Lofland (Eds.), *Handbook of Ethnography*. (pp. 160-174). Sage.

Clément, G. (1997). Jardins en mouvement, friches urbaines et mécanismes de la vie. *Journal d'agriculture traditionnelle et de botanique appliquée*. *39*(2), 157–175.

Common Grounds. (2020). *Gemeinschaftsgarten Moritzplatz Berlin Kreuzberg*. https://issuu.com/gartenammoritzplatz/docs/doku_garten_neu_issue

Cooke, B., Landau-Ward, A. & Rickards, L. (2020). Urban greening, property and more-than-human commoning. *Australian Geographer*, *51*(2), 169-188.

Curtis, D. R. (2016). Did the Commons Make Medieval and Early Modern Rural Societies More Equitable? A Survey of Evidence from across Western Europe, 1300–1800. *Journal of Agrarian Change*, *16*, 646-664.

de Certeau, M. (1988 [1984]). *The Practice of Everyday Life*. trans. Steven Rendall. University of California Press.

Dellenbaugh, M., Kip, M., Bieniok, M., Müller, A., Schwegmann, M. (Eds.) (2015). *Urban Commons: Moving Beyond State and Market (Bauwelt Fundamente)* (Vol. 154). Birkhäuser.

Dove, C. (2020). *Radical Housing: Designing multi-generational and co-living housing for all*. RIBA Publishing.

Egner, E. (1976). *Der Haushalt: eine Darstellung seiner volkswirtschaftlichen Gestalt* (2nd ed.). Duncker und Humblot.

Fedrowitz, M. & Gailing, L. (2003). *Zusammen wohnen: gemeinschaftliche Wohnprojekte als Strategie sozialer und ökologischer Stadtentwicklung*. IRPUD.

Global Alliance for Buildings and Construction. (2020). *2020 Global Status Report for Buildings and Construction. Towards a zero-emissions, efficient and resilient buildings and construction sector*. https://drive.google.com/file/d/1k2X0oASPI-RUsi90RdKLMkrBfalv29yW/view

Grosch, L. & Petrow, C.A. (2015). *Designing Parks: Berlin's Park am Gleisdreieck or the Art of Creating Lively Places*. Jovis.

Grün Berlin. (n.d.). *Schutzzone der Feldlerche: Schutz für die seltene Feldlerche auf dem Tempelhofer Feld*. https://gruen-berlin.de/projekte/parks/tempelhofer-feld/natur-geschichte/schutzzone-der-feldlerche

Göteborgs Posten. (2015, June 17). *Västlänken en miljökatastrof – utred alternativen*. https://web.archive.org/web/20150925114747/http://www.gp.se/nyheter/debatt/1.2580201-vastlanken-en-miljokatastrof-utred-alternativen

Göteborgs Stad. (n.d.). *Stadsutveckling Göteborg – Västlänken*. https://stadsutveckling.goteborg.se/vastlanken

Haraway, D.J. (2015). Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin. *Environmental Humanities, (16)*1, 159–165.

Hauck, T.E. & Weisser, W.W. (2015) *AAD - Animal-Aided Design*. Projektbroschüre. Bayerischen Staatsministerium für Umwelt und Verbraucherschutz.

Hayward, B., Salili D.H., Tupuana'i, L.L., Tualamali'i', J. (2019) It's not "too late": Learning from Pacific Small Island Developing States in a warming world. *WIREs Clim Change*. 1-8.

Head, L. (2016). *Hope and Grief in the Anthropocene*. Routledge.

Helfrich, S. & Bollier, D. (2019). *Frei, fair und lebendig – Die Macht der Commons*. transcript.

Holmgren, D. (2002). Permaculture. *Principles and Pathways beyond Sustainability*. Holmgren Design Services, Hepburn, Victoria.

Hulme, M. (2009). *Why we disagree about climate change: Understanding controversy, inaction and opportunity*. Cambridge University Press.

Jones, O. (2011). Lunar-Solar Rhythmpatterns: Towards the Material Cultures of Tides. *Environment and Planning A,* 43, 2285–2303.

Kettner, L. & Mössner, S. (2020). Performing gaps: Vom Verhältnis zwischen Alternativen Ökonomien und städtischer Planung in Dortmund. In B. Lange, M. Hülz, B. Schmid & C. Schulz (Eds.), *Postwachstumsgeographien: Raumbezüge diverser und alternativer Ökonomien*. transcript. (pp. 177-192.)

Lachmund, J. (2004). Knowing the Urban Wasteland: Ecological Expertise as Local Process. in S. Jasanoff and M. Long Martello (Ed.), *Earthly Politics: Local and Global in Environmental Governance* (pp. 241-266). MIT Press.

Lachmund, J. (2013). *Greening Berlin: The Co-Production of Science, Politics, and Urban Nature*. MIT Press.

Lefebvre, H. & Régulier, C. (2004) The Rhythmanalytical Project. in *Rhythmanalysis: Space, Time and Everyday Life* (pp. 71-84). Continuum.

Leonardi, C. & Stagi, F. (2019 [1983]). *The Architecture of Trees*. Princeton Architectural Press.

Leoni, E. (2000 [1961]). Preface to Cesar Nostradamus. *Nostradamus and His Prophecies* (pp. 120-131). Dover Publications.

Lichtenstein, A. & Mameli, F.A. (2015). *Gleisdreieck / Parklife Berlin*. transcript.

Linebaugh, P. (2008). *The Magna Carta Manifesto: liberties and commons for all*. University of California Press.

Low, S. M. (1996). The Anthropology of Cities: Imagining and Theorizing the City. *Annual Review of Anthropology*, 25, 383-409.

Mbow, C., C. Rosenzweig, L.G. Barioni, T.G. Benton, M. Herrero, M. Krishnapillai, E. Liwenga, P. Pradhan, M.G. Rivera-Ferre & T. Sapkota, F. N. T., Y. Xu. (2019). Food security. In *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems IPCC*.

Metzger, J. (2015). The City Is Not a Menschenpark: Rethinking the Tragedy of the Urban Commons beyond the Human/Non-Human Divide. In C. Borch & M. Kornberger (Eds.), *Urban Commons: Rethinking the City* (pp. 22-46). Routledge.

Mubi Brighenti, A. & Pavoni, A. (2020). Situating urban animals – a theoretical framework. *Contemporary Social Science*, 16(1), 1-13

Nicholas, T., Hall, G. & Schmidt, C. (2020, July 14) *The faulty science, doomism, and flawed conclusions of Deep Adaptation*. Open Democracy. https://www.opendemocracy.net/en/oureconomy/faulty-science-doomism-and-flawed-conclusions-deep-adaptation/

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective*. Cambridge University Press.

Plumwood, V. (2002). *Environmental Culture: The Ecological Crisis of Reason*. Psychology Press.

Pottinger, L. (2017). Planting the seeds of a quiet activism. *Area*, *49*(2), 215-222.

Pätzold, R. (2019). Gemeinschaftliche Wohnformen. *APuz aus Politik und Zeitgeschichte, 10413*, 175–187.

Rosengren, M. (2020a). *Wastelands of difference? Urban nature and more-than-human difference in Berlin and Gothenburg*. Doctoral Thesis. University of Cambridge.

Rosengren, M. (2020b). There's life in dead wood: tracing a more-than-human urbanity in the spontaneous nature of Gothenburg. In M. Gandy & S. Jasper (Eds.), *The Botanical City* (pp. 229-236). Jovis Verlag.

Rosenzweig, C., Iglesius, A., Yang, X.-B., Epstein, P. R., & Chivian, E. (2001). Climate change and extreme weather events – Implications for food production, plant diseases, and pests.

Ryan, J.C. (2012). Passive Flora? Reconsidering Nature's Agency through Human-Plant Studies (HPS). *Societies 2*(3), 101–121.

Treeck, K. & Ambach, C. (2019). Das gute Leben für alle: Wege in die solidarische Lebensweise. Oekom.

Tsing, A.L. (2012). Unruly Edges: Mushrooms as Companion Species. *Environmental Humanities*, *1*, 141–154.

van Doreen, T., Kirksey, E. and Münster, U. (2016). Multispecies Studies: Cultivating Arts of Attentiveness. *Environmental Humanities, 8*(1), 1-23.

Vestbro, D.U. & Horelli, L. (2012). Design for gender equality: The history of co-housing ideas and realities. *Built Environment, 38*(3), 315–335.

Deep Adaptive Reuse

A response to the 21st-century urban challenges

Ana Jayone Yarza Pérez

Delft University of Technology (Netherlands)
Bezalel Academy of Arts and Design (Israel)

Abstract

The world is undergoing dramatic change in its social and physical environments, resulting in cultural confrontation and conflict. Rapid urban growth, displacement, and gentrification increase urban pressure while jeopardising social cohesion, multicultural values, and local economies. In addition, environmental factors associated with climate change challenge how our cities respond and adapt, prompting the need for urban centre regeneration to confront the urban century challenges (Sassen, 2011). However, adaptation to these changes is also a source of conflict, as urban policies lack citizen engagement in the redefinition of public space, resulting in more disagreement and inefficient use of resources.
One way to respond to this ongoing crisis is adaptive reuse, repurposing an underused system for a new use. This process can enhance positive environmental impacts, encourage social and participatory processes, and promote economic dynamism through culture. However, the success of such an intervention will depend on the underlying approach.
The paper aims to explore how Jem Bendell's ambitious four-pronged Deep Adaptation strategy (Bendell, 2018) combined with the cultural resilience approach can result in adaptive reuse processes that act as development catalysers and peace-building mechanisms.
.

Keywords

Deep adaptation, Adaptive reuse, Urban heritage, Case study, Acre

DOI

https://doi.org/10.47982/spool.2022.2.02

Introduction

Background

The studies of the last decades show how we have moved into the Anthropocene (*Anthropocene*, 2021), a new Earth stage characterised by the human impact as the catalyser of changes to our planet (Crutzen, 2002; Zalasiewicz et al., 2008). The "hockey stick" trend visible in various studies from different disciplines showcases the acceleration of these dynamics and how they trigger climate change and disasters (United Nations Human Settlements Programme, 2012). These disruptive changes provoke economic crises, social instability, and ecosystem deterioration, resulting in other disasters such as the current COVID-19 pandemic, following a "snowball effect" (Roy Britt, 2005).

Governments and institutions such as the United Nations (UN) acknowledge the intricacies and consequences of not preparing for climate change and disasters and have proposed a series of frameworks to confront them. The Agenda 2030 includes climate change and disaster risk reduction and mitigation (DRRM) as part of its Sustainable Development Goals (SDG). Goal number 13 specifically addresses climate action, and the other goals include three themes transversally (United Nations, 2015a). The UN Agency for Disaster Risk Reduction (UNDRR, formerly known as UNISDR) published The Sendai Framework for Disaster Risk Reduction 2015-2030 in 2015, outlining targets and priorities for action to prevent and reduce existing disaster risks (UNDRR, 2015). Moreover, in December of 2015, during the COP21 Intergovernmental climate summit, leaders from 180 countries signed The Paris Climate Accord, agreeing to reduce greenhouse gas emissions and limit the global temperature increase to below 2 degrees Celsius (3.6 F) above pre-industrial levels by the year 2100 (United Nations, 2015b).

These measures have proven to be insufficient as they are being implemented too slowly to meet their aims (IOM, 2020). Therefore, alternative frameworks have been proposed by academics and other researchers. This is the case of Jem Bendell, who proposes the Deep Adaptation Agenda in response to the current situation, taking a more radical approach (Bendell, 2018). In his article "Deep Adaptation: A Map for Navigating Climate Tragedy", Prof. Bendell advocates radical measures to address climate change and disasters as an ongoing emergency to be tackled now. Furthermore, he expresses great concern about the soft measures and the long timespan to be implemented due to systematic denial of the problem by governments, academics, and in public debate. In contrast to this superficial attitude, he proposes a four-pronged approach, the Deep Adaptation Agenda, as a mechanism to deal with profound disruption, accepting the hypotheses that *"climate-induced near-term societal collapse should now be a central concern for everyone"*.

The key aspects covered by the Deep Adaptation Agenda are resilience, relinquishment, restoration, and reconciliation. Each concept responds to the following questions, aiming to find viable, sustainable, and effective solutions to be implemented in the nearest future:

- Resilience *(R1) asks us, "how do we keep what we really want to keep?"*
- Relinquishment *(R2) asks us, "what do we need to let go of in order not to make matters worse?"*
- Restoration *(R3) asks us, "what can we bring back to help us with the coming difficulties and tragedies?"*
- Reconciliation *(R4) asks, "with what and whom can we make peace as we face our mutual mortality?"*

These actions cover a wide spectrum of topics, and are proposed as an umbrella approach to more specific themes. In my research, the Deep Adaptation Agenda is used to address adaptive reuse[1] of urban heritage[2], as a strategy to turn cities' elements in decline into development catalysts (Pereira Roders & van Oers, 2011). This strategy can positively influence the socio-economic, environmental, and cultural spheres of sustainable development (United Nations, 2015a). The latter, culture, is a focal point of this paper, with the role of culture as a brace for sustainable development (Bandarin et al., 2011; Bandarin & van Oers, 2012) being acknowledged by bringing urban heritage to the forefront. It is additionally addressed by the incorporation of cultural resilience[3] as a cross-cutting element (Holtorf, 2013). It is a branch of resilience dealing not only with adaptation but also with continuity and change, both points aligned with the Deep Adaptation Agenda.

Aim of the paper

Altogether, this paper aims to explore how Jem Bendell's ambitious four-pronged Deep Adaptation strategy (Bendell, 2018) combined with the cultural resilience approach can result in adaptive reuse processes that act as development catalysts and peace-building mechanisms, intending to address the impacts of the climate crisis and disasters at the urban level. The proposed approach attempts to understand the potential of the Deep Adaptation Agenda and its actual implementation from an urban and cultural perspective by comparatively analysing two cases, the Marina of Acre and the Port of Jaffa, both in Israel.

Methodology

Hypotheses

One of the consequences of climate change agreed by most scientists is a global sea level rise of 0.3 metres up to 2.0 metres by 2100 (Parris et al., 2012; Sweet et al., 2017). It increases the risk of coastal flooding due to extreme sea levels or coastal erosion that would result in the exposure of coastal cities to these hazards (Reimann et al., 2018). This not only means the erasure of the actual urban fabric, but would also

1 Adaptive Reuse is the transformation of the function of an underused system into a new use (Apserou, 2013; Plevoets & Van Cleempoel, 2019, 2020; Stone, 2020; Wong, 2017). It can tackle urban issues holistically, as this process can enhance positive environmental impacts, encourage social and participatory processes, and promote economic dynamism through culture (Apserou, 2013; Mathey & Steinberg, 2018). However, the success of such an intervention will depend on the underlying approach.

2 As a concept, urban heritage is global. Usually, it is defined as the historical and physical layers constituting the contemporary urban area. These include the built heritage, with architectural and historical value, the urban plan, and land utilization. However, the current views on heritage, like "The Historic Urban Landscape" approach, published by UNESCO in 2011 (UNESCO, 2011) go beyond the notion of historical centres and traditional layering to include the broader urban context and its geographical setting (UNESCO, 2011). This approach includes a wider range of elements, comprising not only tangible but also intangible components. The framework developed during the "Heritage in Urban Contexts" meeting held in Fukuoka in 2020 (UNESCO World Heritage Centre, 2020), classifies urban heritage into four categories: the wider context, the urban elements, the architectural elements, and the intangible cultural elements. All of these capture their local and regional identity. Therefore, this framework needs to be adapted to the context accordingly (Ibid.).

3 Cornelius Holtorf defines cultural resilience as "the capability of a cultural system (consisting of cultural processes in relevant communities) to absorb adversity, deal with change and continue to develop" (Holtorf, 2013). Moreover, he adds that "Cultural resilience thus implies both continuity and change: disturbances that can be absorbed are not an enemy to be avoided but a partner in the dance of cultural sustainability (adapted from Thiele [2016, 36])." This perspective embraces disruption, transforming it into an opportunity for development, in which adaptation is key to prosperous societies (Gilbert & Bower, 2002).

have catastrophic consequences for the economy and social cohesion in these cities, as they depend on the activities linked to the port, like trade, fishing, tourism, and leisure (Marzeion & Levermann, 2014).

This tragic future scenario serves as the basis for imagining alternative uses for these areas, addressing not only the environmental factors but also understanding the city from an integrated perspective with culture as the enabler of sustainable development (*Keeping the Promise: United to Achieve the Millennium Development Goals*, 2010; Unesco, 2016).

Cases: The Marina of Acre and the Port of Jaffa

The two selected areas, the Marina of Acre and the Port of Jaffa, being two ports in the Mediterranean Sea, serve as examples to test the hypotheses surrounding sea level rise. These ports have undergone multiple changes over time, so they have great potential for adaptation (Galili et al., 2010; Harari, 2012). Furthermore, while Acre and Jaffa are not extreme cases of rapid deterioration, as the historic areas of Dubrovnik or Venice, these port cities are on the edge of becoming mass tourism attractions. The ongoing gentrification process in the areas jeopardises the fragile balance between the traditional livelihoods of locals and new economic activities linked to tourism owned by outsider business people (Killebrew et al., 2017; Sherwood, 2012, 2012).

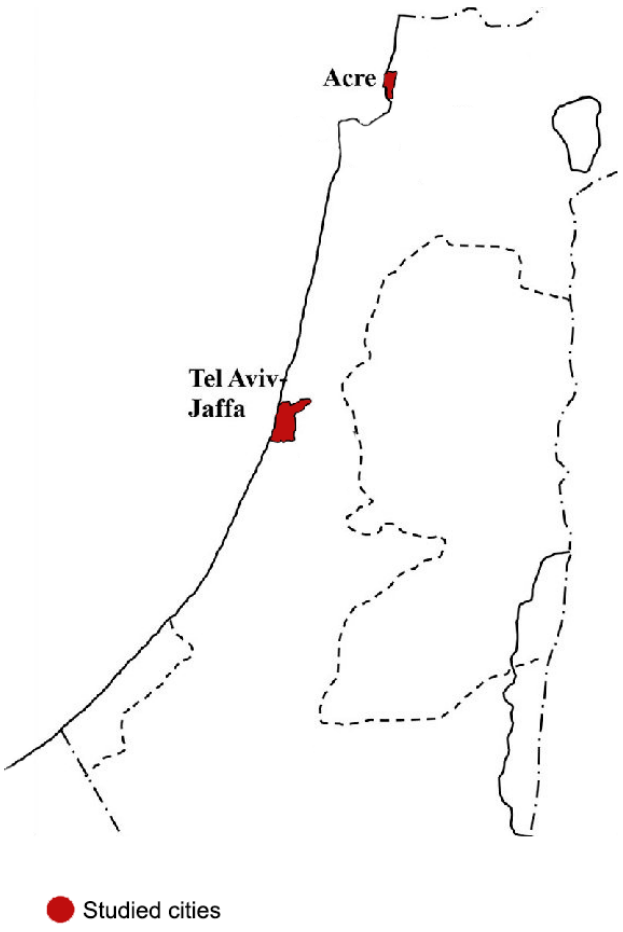

FIGURE 1 *Orientation map of Israel locating Acre and Jaffa. Source: Izhak Schnell*

Acre and the Marina

Being inscribed on the World Heritage List, the Old City of Acre preserves a historic town's urban and architectural elements. Its outstanding value relies on the Crusader remnants preserved under the Ottoman city (World Heritage Centre, 2013), showcasing Mediterranean port cities' dynamism and continuous change.

The Marina of Acre is one of the leading local and tourist assets in the city. This sea walk along the traditional fishing port brings together tangible and intangible cultural heritage elements in one place, a highly attractive space for leisure activities for tourists and locals.

FIGURE 2 Marina of Acre. Source: Flickr_ Ray in Manila

Jaffa and the Port

Jaffa is situated on the south-western side of Tel Aviv, having been the initial settlement in the area until the foundation of Tel Aviv in May 1910. This city, now a district within Tel Aviv, has undergone renovations over the past few years to become a tourist attraction featuring restored buildings, art galleries, theatres, souvenir shops, restaurants, sidewalk cafes, and promenades. Unfortunately, this has triggered gentrification, amplifying the social inequalities in the area

Not listed as a World Heritage site, the Port of Jaffa is highly influenced by the proximity to the White City of Tel Aviv, a Modern WH Site (Rofe`, 2008). This cultural component boosts the attractiveness of the area for citizens and tourists, as its more organic configuration and liveliness contrast with the more orthogonal and less mixed-use urban pattern of the White City.

FIGURE 3 Old Jaffa Port. Source: Noam Armonn

Method

The exercise combines the citizens' perceptions, current uses, and future visions of the areas as the starting point to imagine hypothetical future scenarios and propose alternative uses based on the Deep Adaptation Agenda and the cultural resilience approach.

The survey

The study includes a questionnaire created for and administered at the two sites.[4] The survey is divided into three sections: the first considers the data to be disaggregated (sex, age, religion...) (See questions 1 – 10); the second addresses the use of the area and perceptions of it (See questions 11 - 18); the third is linked to future visions for the areas and proposes a hypothetical disaster in the area, sea level rise, to obtain the citizens' reactions (See question 19).
The questionnaire includes the Deep adaptation Agenda's four main points: resilience (R1), relinquishment (R2), restoration (R3), and reconciliation (R4). Points R1 and R2 (what to keep and what to let go of) are considered by collecting perceptions and future visions of the areas. The reactions to the hypothetical

4 See these links: Survey in Acre and Survey in Jaffa

sea level rise indirectly include R3, as the elements that should be brought back can be gleaned from the responses on how to respond to the crisis.
Moreover, reconciliation (R4) is directly linked to the multiplicity of dissonant voices. Their differences are included in the first part, in which traditional factors such as age and sex are integrated, along with native language (Hebrew, Arab, etc.), religion, place of birth, place of residence, and profession. Thus, we aim to understand perceptions from all viewpoints. With a similar intention, the survey is also carried out digitally, targeting workers from both public institutions and other societal sectors such as youth and students.

Time / Place considerations

Two similar questionnaires were prepared: one for the Marina of Acre, and another for the Port of Jaffa. The surveys were carried out on several days, at different times, and different days of the week to include as many different voices as possible. In addition, the spatial component is included by georeferencing each surveyed person, their place of birth, and residence.

The Sample

The sample for relevant results requires a statistical deviation of less than 5%. The standard deviation (σ) is inversely proportional to the square root of the sample size (n):

$$\sigma = \frac{1}{\sqrt{n}}$$

Children did not participate in the surveys due to extraordinary circumstances. The parents were reluctant to let their children participate, afraid of being exposed. Children constitute 36% and 38% of the population in Acre and Jaffa, respectively. Therefore, for this study, the planned sample for Acre and Jaffa is 380 people per city, assuming a deviation of 5% and a confidence of 95%.

So far, the number of surveys collected remains below the needed sample due to the COVID-19 global pandemic. The collected surveys currently have a 7% deviation, so the research remains open to ensure that enough surveys are collected to provide relevant findings.

COVID-19: challenges, pros, and cons

It should be noted that carrying out the physical survey during the first months of 2021 (January, February, and March) was highly challenging due to the ongoing COVID-19 health crisis. Some of the people approached during the survey were reluctant to engage in conversation, and the reduced number of foreign and national tourists due to mobility restrictions creates a "COVID-19 bias". On the one hand, this provides an opportunity to get the locals' understanding of their area. However, on the other hand, it reduces both the number of people surveyed and the diversity of views due to the lack of tourism. Therefore, considering that both sites are highly tourism dependant, we should analyse the survey results with a grain of salt while appreciating the benefit that the extraordinary times provide a "locals only" perspective.

Result Analysis

General and Disaggregated (See 5. Annexes)

The results obtained from the survey have been analysed.[5] The aim is to first acquire a general understanding of perceptions and future visions of the areas, following the Deep Adaptation Agenda guidelines, aiming to respond to R1 and R2. Following that, the results have been disaggregated by sex, age, religion, and profession. The purpose of this step is to compile the multiplicity of voices in the area and map the points of consensus and conflict about point R4, reconciliation.

Alternative proposal

Aiming to test the limits of acceptability in relation to the hypothetical catastrophic future of sea level rise and the Marina of Acre and the Port of Jaffa disappearing, adaptive reuse alternatives are proposed. The criteria extracted from the analysis are considered in addition to the "Cultural Resilience Approach". Together they were used to evaluate the level of acceptability of these alternatives. The "Cultural Resilience Approach" addresses restoration (R3), "what can we bring back to help us with the coming difficulties and tragedies?" by recovering the notion of cultural resilience as "the capability of a cultural system to absorb adversity, deal with change and continue to develop" (Holtorf, 2013).

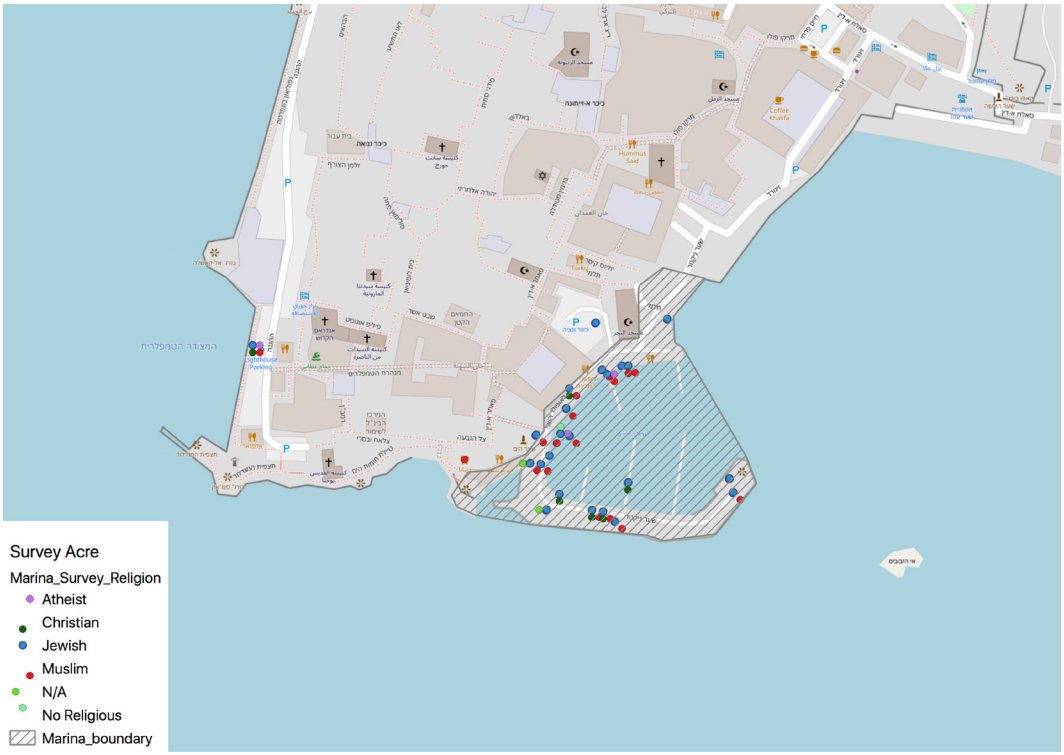

FIGURE 4 Map of Acre with respondents' religion

5 See table with results at the following link.

Marina of Acre

The general results of the survey show the majority perception, which in this case can be expressed as the following profile. For the Marina of Acre: a Jewish man, between 19 and 34 years old, employed, working in the business sector. He was born and currently lives in Israel, but outside of Acre. This person visits the area once or twice a month, and he usually walks, engages in tourism, and spends time with friends. The elements of the port that he likes the most are the views, the food, and the buildings. However, he finds the area not nice, difficult to access, and he does not like the location. He would like the port to be a fishing port in the mornings and a local market in the evening, yet boat tours would be undesirable. In the hypothetical case of sea level rise that would flood the marina, the most common reaction is to believe it would be a high disruption requiring a new port nearby, and the least common reaction is to call for the port's reconstruction.

The general analysis of the results also shows the values linked to the marina and the city of Acre, represented in these two tag clouds. In the first, the three most repeated words are place, sea, and beautiful. In the second, these are dust, culture/s, and city. It shows how the Marina of Acre is mostly valued for its aesthetic value and location near the sea. Regarding Acre, while its cultural value is acknowledged, it is seen as a dusty city. We find these values back in response to the most (R1 – Resilience) and least (R2 - Relinquishment) valued elements.

Port of Jaffa

In the case of the port of Jaffa, the most common respondent is a Jewish man, between 19 and 34 years old, unemployed. His sector is not specified. He was not born in Jaffa, but somewhere in Israel or a foreign country, and he currently lives in another city in Israel. This person visits the area 3 to 4 times a month, and he usually walks and spends time with friends and family. The port's preferred elements are the views, the space being nice, and the buildings. He finds it difficult to access the site and to park. The food is one of the least preferred elements. The morning and evening preferred uses for the area are a green park and a local market, respectively. Boat tours would be undesirable.

At both ports

The results extracted from the survey offer a wide range of perspectives on the two ports. We can understand the multiplicity of perceptions the citizens and visitors have about these two similar public areas, the cultural values linked to them, and the vision for a hypothetical disastrous scenario.

FIGURE 5 Acre's Tag Clouds – Marina (on the left) and City of Acre (on the right) _Generated With Wordclouds.Com

FIGURE 6 Jaffa's Tag clouds – Port (on the left) and City of Jaffa (on the right) _Generated with Wordclouds.com

Decisions on urban resilience could benefit from these general results, though they are shallow. At first glance, the preferred option is to be prepared for or respond to sea level rise by relocating the marina to a safer area of the city so that the economic activities are not jeopardised. This also aligns with the importance of economic activities for the respondents and with the fact that reconstruction is the least-selected alternative.

In the hypothetical case of sea level rise that would flood the port, the most common reaction was to believe it would be a considerable disruption and to construct a new port, while the least common option was to reconstruct it. The values linked to the port are sea, food, and promenade, whereas Jaffa's values are related to community, market, and history. Altogether, the tag clouds show that the sea and the community are the most valued assets. Consequently, if the sea level were to rise and flood Jaffa's port, the generally preferred option would be to build a new port. Similar to Acre, reconstructing the area is not a priority.

Management of the port if the sea level rises

Fixed answers were provided as responses to the hypothetical question about what would happen if the sea level rose and the port flooded, with the results nearly the same for both ports. The most common answer is that it would be an enormous disruption that would affect the economy, the second answer was to build a new port close to the original one, and the third option was that no port would be needed. That the responses remain so similar shows an apparent consensus on how the citizenship understands city management and their level of trust in the authorities.

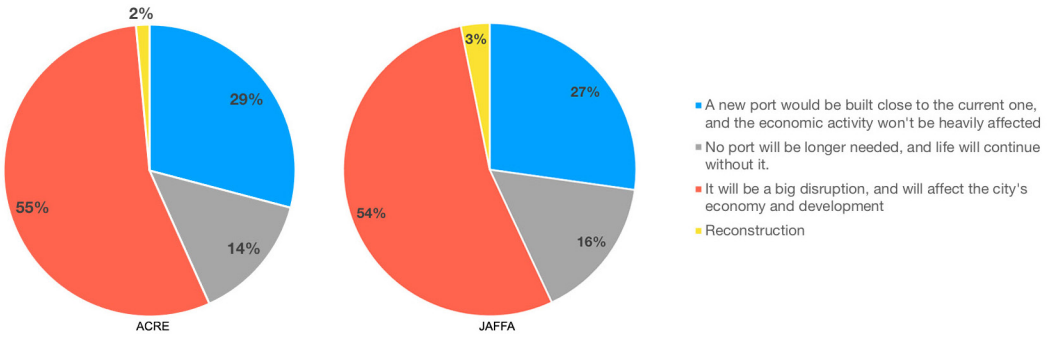

FIGURE 7 Survey results on the question: If the sea level rises and the Marina of Acre/ Port of Jaffa disappears, how will the city manage?

Deep Adaptive Reuse and Cultural Approach and Alternatives

Disaggregating the data shows a complex and varied range of perceptions on the Marina of Acre and the Port of Jaffa. We propose alternatives based on this outcome for a hypothetical rise in sea level and consequent flooding of the ports, aiming to find the most acceptable option among the citizens.

Consensual alternative: New port | Economic revival | No reconstruction

The question on port management (Question 19) serves as the starting point because a consensus was found among all the categories for both ports. Almost every respondent believes that sea level rise would be an enormous disruption that would affect the economy and development of the city, and that building a new port close to the current one would be a good solution, rather than reconstructing the latter. From these answers, we distil citizens' awareness of how a natural disaster may impact their city and the economy; there is low interest in reconstructing the current port. The new one should include the economic activities to compensate for the loss from the old port.

This means that implementing physical disaster mitigation mechanisms, such as a dam or barrier systems, would not be an adequate solution from a citizen's perspective. Instead, focusing on response plans that include planning a new port would attract more agreement, meaning the municipality should prioritise such planning.

If the construction of a new port close to the current one is chosen based on popularity among the citizenry, deciding on the uses this new port would accommodate and which it would not is fundamental to guarantee its sustainability.

The New Marina of Acre

Alternative uses for the (new) Marina of Acre

The most valued elements of the Acre port are related to cultural, economic, and social interactions, whereas the least valued elements are linked to the urban and environmental aspects. The new port should include excellent views of the sea, greenery, and a nice clean space to walk. Economic activities related to the local economy and tourism should be included. Cultural values should be promoted by enhancing the gastronomy, festivals, and the buildings and monuments of the new port. Also, the new port should be easily accessible, close to public transportation and a parking area.

The preferred morning uses for the port, in almost every category, includes a fishing port and a green park. These uses connect to the need for a green and clean space and enhance the local economy and the desire to fish among the elderly. The only group that opposed the green park is the age range between 35 and 49. To compensate for their choice being neglected, their most preferred use should be included: the local market. This aspect would work out fine, as it is one of the most preferred uses for the evening, along with the sea promenade. The new project should not include boat tours, as this is one of the most undesired uses.

Altogether, the new port would provide a sea promenade and a green park, where fishing activity would be possible, both as a recreational activity and professionally. This area would include a local market that is attractive for locals and tourists, including traditional arts and crafts and local food. Tourist attractions should be integrated. These could include historical buildings, monuments, and exhibitions showing local arts and crafts. Boat tours should be avoided.

Issues raised by the alternative – Acceptance Evaluation

This alternative raises a series of issues and doubts that need to be addressed by the municipality, mostly linked with the process, timing, and stakeholder acceptance. Firstly, selecting the location for the new port would create a high probability of confrontation among Acre's stakeholders. Second, the timing for the construction of the new port could be controversial. From a disaster risk management (DRM) point of view, mitigation and preparedness are prioritized over response. Therefore, constructing the new port before the sea level rises would be the DRM better option. Yet, this entails a great level of economic resources, and as mentioned above, a high level of controversy about its location. It suggests that measures would be taken when the public perceives the risk so that the level of acceptance is high. Finally, neglecting the historical and cultural value of the Marina of Acre as part of a World Heritage site is not trivial. The heritage and cultural sectors would oppose the abandonment and deterioration of the area, advocating its reconstruction regardless of citizens' perceptions. Altogether, it generates a conflict of interests and priorities among stakeholders and shuffling the DRM, cultural heritage, economic, and urban priorities. In any case, the final decision should include citizen engagement to guarantee a reasonable level of acceptance.

The New Port of Jaffa

Alternative uses for the (new) Port of Jaffa

Regarding the most and least valued elements of the port of Jaffa, the cultural and economic aspects should be maintained, and the urban and economic aspects improved. Therefore, following the most desired uses, a green park and fishing port should be included to tackle the environmental aspect as well as the preference for walking and spending time with friends and family. For the evening, most categories proposed a local market as a desirable use. This is aligned with the fact that many respondents selected no change for the uses in the morning and evening. This means that the current use of the port, sea promenade, local market, restaurants, and cafes should be integrated with the new port, and avoid boat tours, as most categories opposed to them.

Overall, the new port of Jaffa should be in an area with views, near the sea to promote recreational fishing. The space should include a green area, nice and clean, with space for local markets, restaurants, and cafes that attract tourists and promote the local economy. The site should be easily accessible by public transportation and close to a parking area for those using a private vehicle.

Issues raised by the alternative – Acceptance Evaluation

Like Acre, the new location and project implementation timing issues create more controversy than the new alternative proposal. In the case of Jaffa, we do not have the World Heritage status, lessening objections regarding cultural heritage. Yet, the intangible cultural heritage elements found on the site should not be neglected, nor the historical value of the port. The latter would probably open the debate

on moving the port, as the connection with biblical episodes represents a solid reason to fight for its reconstruction over a new port.

In addition to selecting a new location, the construction schedule is also an issue in this case, as it would clash with political interests. The decision-makers would need to prioritize the citizens' perspectives and the municipality's main concerns over the DRM criteria. Again, this choice would interfere with the overall objective of this exercise: addressing disruptions boosted by climate change with a high level of citizen acceptability as part of a holistic resilience approach.

Heritage - Tourism alternative: Mitigation | Reconstruction | Economic development

One of the issues observed in constructing a new port is the objection by heritage experts and the difficulty in finding a new location linked to the municipality's priorities and other political interests. Therefore, following the fourth point in the Deep Adaptation Agenda, R4 reconciliation, we propose an alternative that addresses the difficulties of building a new port, obviating the responses to the question about port management in the case of sea level rise.

The proposed alternative is the reconstruction of the Marina of Acre, as this site is more charged with cultural and heritage values, connected to its UNESCO WH status. This option would include two fundamental elements. The first element concerns flood risk mitigation aiming to delay the disaster by constructing physical mitigation systems, such as water barriers. Second, a reconstruction plan for the ports is needed, which should include a response mechanism for the time of flooding, and the plan for the reconstructed port, to address the recovery phase.

Again, the key element for this alternative to be successful is citizen engagement and awareness. The surveys show that the citizenry is aware of the consequences of such a disaster. Their engagement can be guaranteed by taking into account the disaggregated data. In this case, the focus is on the recovery phase[6]: the main elements and uses to be included/not included in the reconstructed port.

Regarding the choice of flood risk mitigation system, the economic factors need to be considered. Decision-makers are more reluctant to implement mitigation systems, as their impact is long term, conflicting with political interests that are more focused on short or medium-term impacts. Therefore, the key stakeholders taking a leap of faith to prioritize a DRM solution over other issues in the city would require high levels of institutional awareness and trust in science.

Conclusions

The Deep Adaptation Agenda offers a new approach in which resilience-related aspects are included (R1), but which also integrates issues linked to perceptions, culture, and interests (R2-R4). Combining this perspective with cultural resilience aims to provide alternatives beyond the traditional DRM approach or the economic, business as usual perspective. Including the social and cultural values into the procedure provides different solutions to the same problems, placing the human beings and citizens in the focus.

6 The response phase is too complex to be addressed in this paper, and should be considered in further studies.

This study provides adaptive reuse alternatives for a hypothetical disaster and mainly focuses on understanding the multiplicity of voices in the city and reaching a more or less consensual alternative for the citizens. It should be noted that the periods of disruptive change provoked by the implementation of the proposed alternatives are not addressed. Neither are the impact of the institutional, public, private, and civil society actors on the acceptance and implementation of the resulting solutions. This leaves space for further research on these topics.

The outcomes of the analysis and alternatives proposed for the Marina of Acre and Port of Jaffa have many similarities. They range from the similar responses among all categories of respondents to the final alternatives derived from the surveys. In the same way, the issues with the actual implementation are shared, showcasing the challenges around climate action. Reaching a consensus or partial consensus among the multiplicity of identities in a city is fundamental to starting the conversation and finding the most acceptable alternatives. Yet, this is just the first step in a complex, multi-level, and multi-disciplinary stakeholder process intertwined with political priorities. A response to the challenges raised by the climate emergency requires citizen engagement and a solid commitment by decision-makers.

Summing up, this paper explored how to combine Jem Bendell's Deep Adaptation Agenda with the cultural resilience approach. It can result in adaptive reuse alternatives, aiming to promote reconciliation and the four spheres of sustainable urban development while tackling the climate crisis and disaster-related issues. The study shows how combining these approaches reveals the voices in the city and provides a baseline for dialogue and engaging solutions. Merging the urban realm with culture and DRM as a method and testing it in the contested sites of Acre and Jaffa reflects the complexity the urban world is facing and the need to propose innovative and integrated methods so that all the voices are included and solutions provided.

Acknowledgements

This research is conducted as part of the HERILAND project. HERILAND is a pan-European research and training network on cultural heritage in relation to Spatial Planning and Design. It is funded by the European Union's Horizon 2020 research and innovation programme under the Marie Sklodowska-Curie grant agreement No 813883.

References

Anthropocene. (2021). https://www.dictionary.com/browse/anthropocene

Apserou, O. (2013). *Adaptive Reuse. Evaluating the concept of adopting Adaptive Reuse as a sustainable strategy for the built environment.*

Bandarin, F., Hosagrahar, J., & Sailer Albernaz, F. (2011). Why development needs culture. *Journal of Cultural Heritage Management and Sustainable Development*, *1*(1), 15–25. https://doi.org/10.1108/20441261111129906

Bandarin, F., & van Oers, R. (2012). *The Historic Urban Landscape: Managing Heritage in an Urban Century*. Wiley-Blackwell. https://doi.org/10.1002/9781119968115

Bendell, J. (2018). *"Deep adaptation: A map for navigating climate tragedy".*

Crutzen, P. J. (2002). Geology of mankind. *Nature*, *415*(6867), 23–23. https://doi.org/10.1038/415023a

Galili, E., Rosen, B., Zviely, D., Silberstein, N., & Finkielsztejn, G. (2010). The Evolution of Akko Harbor and its Mediterranean Maritime Trade Links. *The Journal of Island and Coastal Archaeology*, *5*(2), 191–211. https://doi.org/10.1080/15564891003664487

Gilbert, C., & Bower, J. L. (2002). Disruptive Change: When Trying Harder Is Part of the Problem. *Harvard Business Review*, *May 2002*. https://hbr.org/2002/05/disruptive-change-when-trying-harder-is-part-of-the-problem

Harari, D. (2012). *Acre Tourism Development Strategy*. https://www.akko.org.il/en/Acre-Tourism-Development-Strategy

Holtorf, C. (2013). Cultural Heritage and the Challenge of Sustainability. *Heritage & Society*, *6*(2), 199–204. https://doi.org/10.1179/2159032X13Z.0000000008

IOM. (2020). *STRENGTHENING DISASTER RISK REDUCTION AND MANAGEMENT AT THE LOCAL LEVEL*. International Organization for Migration.

Keeping the promise: United to achieve the Millennium Development Goals (Intergovernmental Resolutions A/RES/65/1). (2010). United Nations General Assembly.

Killebrew, A. E., DePietro, D., Pangarkar, R., Peleg, S.-A., Scham, S., & Taylor, E. (2017). Archaeology, Shared Heritage, and Community at Akko, Israel. *Journal of Eastern Mediterranean Archaeology & Heritage Studies*, *5*(3–4), 365–392. JSTOR. https://doi.org/10.5325/jeasmedarcherstu.5.3-4.0365

Maly, E., & Suppasri, A. (2020). The Sendai Framework for Disaster Risk Reduction at Five: Lessons from the 2011 Great East Japan Earthquake and Tsunami. *International Journal of Disaster Risk Science*, *11*(2), 167–178. https://doi.org/10.1007/s13753-020-00268-9

Marzeion, B., & Levermann, A. (2014). Loss of cultural world heritage and currently inhabited places to sea-level rise. *Environmental Research Letters*, *9*(3), 034001. https://doi.org/10.1088/1748-9326/9/3/034001

Mathey, K., & Steinberg, F. (2018). *Urban Renewal and Revitalization*.

Parris, A., Bromirski, P., Burkett, V., Cayan, M., Hall, J., Horton, R., Knuuti, K., Moss, J., Obeysekera, J., Sallenger, A., & Weiss, J. (2012). *Global Sea Level Rise Scenarios for the US* (Technical OAR CPO-1.; p. 37). Global Sea Level Rise Scenarios for the US National Climate Assessment. NOAA. https://cpo.noaa.gov/sites/cpo/Reports/2012/NOAA_SLR_r3.pdf

Pereira Roders, A., & van Oers, R. (2011). Editorial: Bridging cultural heritage and sustainable development. *Journal of Cultural Heritage Management and Sustainable Development*, *1*(1), 5–14. https://doi.org/10.1108/20441261111129898

Plevoets, B., & Van Cleempoel, K. (2019). *Adaptive reuse of the built heritage. Concepts and cases of an emerging discipline.* Routledge Ltd.

Plevoets, B., & Van Cleempoel, K. (2020). Heritage, Adaptive Reuse and Regeneration in Retail Design. In *Retail-Design: Theoretical Perspectives* (A. Petermans & A. Kent, A. Petermans&A. Kent, pp. 114–134). Routledge. https://www.academia.edu/30522489/Heritage_Adaptive_Reuse_and_Regeneration_in_Retail_Design

Reimann, L., Vafeidis, A. T., Brown, S., Hinkel, J., & Tol, R. S. J. (2018). Mediterranean UNESCO World Heritage at risk from coastal flooding and erosion due to sea-level rise. *Nature Communications*, *9*(1), 4161. https://doi.org/10.1038/s41467-018-06645-9

Rofe`, Y. (2008). The White City of Tel-Aviv: The Conservation of Modern Planning and Architecture and the Current Debate on Urbanism. *Journal of the Italian Institute of Planners*, *136*, 95–102.

Roy Britt, R. (2005, June 9). The Snowball Effect of Global Warming. *Live Science*. https://www.livescience.com/9329-snowball-effect-global-warming.html

Sherwood, H. (2012). Israel's historic city of Acre faces tourist and settler tensions [News]. *The Guardian*. https://www.theguardian.com/world/2012/jun/24/israel-historic-city-acre-tensions

Stone, S. (2020). *UnDoing buildings: Adaptive reuse and cultural memory*. Routledge, Taylor & Francis Group.

Suppasri, A., Leelawat, N., Latcharote, P., Roeber, V., Yamashita, K., Hayashi, A., Ohira, H., Fukui, K., Hisamatsu, A., Nguyen, D., & Imamura, F. (2017). The 2016 Fukushima earthquake and tsunami: Local tsunami behavior and recommendations for tsunami disaster risk reduction. *International Journal of Disaster Risk Reduction*, *21*, 323–330. https://doi.org/10.1016/j.ijdrr.2016.12.016

Sweet, W. V., Kopp, R. E., WEaver, C. P., Obeysekera, J., Horton, R. M., Thieler, E. R., & Zervas, C. (2017). *Global and Regional Sea Level Rise Scenarios for the United States* (Technical NOS CO-OPS 083). Center for Operational Oceanographic Products and Services National Ocean Service National Oceanic and Atmospheric Administration U.S. Department of Commerce. https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf

UNDRR. (2015). *Sendai Framework for Disaster Risk Reduction 2015–2030*. https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf

UNESCO. (2011). *Recommendation on the Historic Urban Landscape*. UNESCO.

Unesco. (2016). *Culture: Urban future : global report on culture for sustainable urban development*.

UNESCO World Heritage Centre. (2020). *Heritage in Urban Contexts: Impacts of Development Projects on World Heritage properties in Cities. Final Outcomes*.

United Nations. (2015a). *Sustainable Development Goals*. https://sustainabledevelopment.un.org/?menu=1300

United Nations. (2015b). *ADOPTION OF THE PARIS AGREEMENT*.

United Nations Human Settlements Programme (Ed.). (2012). *Mid-term evaluation of the Cities and Climate Change Initiative*. UN-HABITAT.

Wong, L. (2017). *Adaptive Reuse: Extending the lives of buildings*. Birkhäuser.

World Heritage Centre. (2013). *World Heritage Periodic Report–Section II - Old City of Acre*.

Zalasiewicz, J., Williams, M., Smith, A., Barry, T. L., Coe, A. L., Bown, P. R., Brenchley, P., Cantrill, D., Gale, A., Gibbard, P., Gregory, F. J., Hounslow, M. W., Kerr, A. C., Pearson, P., Knox, R., Powell, J., Waters, C., Marshall, J., Oates, M., … Stone, P. (2008). Are we now living in the Anthropocene. *GSA Today*, *18*(2), 4. https://doi.org/10.1130/GSAT01802A.1

Architectural Adaptation as Praxis

Marie Ulber, Mona Mahall, Asli Serbest

Bauhaus Universität Weimar (Germany)

Abstract

Since industrialization, modern architecture has appropriated the notion of adaptation. Defined as the adjustment of a building to the environment and its users, architectural adaptation has been mainly carried out via a narrow technological approach. Thus, digitalization has emerged as the latest 'smart' update. The limits of technological adaptation become especially evident with architecture in aiming to solve an ecological and social crisis on both a global and local level. In this paper, we argue for reconceptualizing adaptivity in architecture to (re)integrate processual, social, and aesthetic dimensions. We propose a new architectural understanding of adaptivity that includes currently excluded agents and involves them in communication and adaptation processes. As we focus on the intertwining of technical developments and cultural practices, that is, the interactions of human and non-human agents in architecture, we seek to describe architectural adaptation as an inclusive spatial praxis. This may aid in inventing new ways of life built upon sustainable nature-culture-technology relationships within society.

.

Keywords

Adaptive architecture, Spatial praxis, Inclusive processes, Flexible interrelationships, Open mesh, Cultural technique

DOI

https://doi.org/10.47982/spool.2022.2.03

Introduction

The house at Szumin is as much raised upon the ground as sunk into it. Begun by architects and artists Oskar and Zofia Hansen north of Warsaw in mid-1968, it remains ambiguous from all sides. The wooden structure is shaped by a pitched roof that extends to, or rather, from the ground. Following the Hansens' open form approach, it is programmatically uncompleted, a work in progress, strongly related to the artistic practices of happenings and environments in the 1950s and 1960s (Ulber et al. 2021). Similarly, the house at Szumin emphasises the process rather than the product, establishes close and flexible interrelationships between object and surroundings as well as interior and exterior spaces, and defies the hierarchy between producer and user of architecture through shared practices of (re)production and care. We will come back to this in detail.

While the house does not contain or envision technological elements today associated with adaptive architecture (Fox 2016, Kolarevic et al. 2015), we assert its capacity for (future) adaptation, understood as a shared process of adjustment within a local and global (natural) environment. Furthermore, we argue that Szumin is a model for contemporary concepts of adaptive architecture: it includes, in addition to technical, spatio-temporal as well as socio-aesthetic qualities and processes that allow for co-constitutive relationships between humans, technology, and the (natural) environment. As an 'open form' this house frames a small-scale architectural space in a rural setting, but it addresses a wider interrelatedness of things and beings.

Indeed, at the 1959 meeting of the CIAM (congrès internationaux d'architecture moderne) in Otterlo, the Hansens presented their architectural approach on notions of collectivity, process, and change. This proposition from the ranks of Team 10, a group of young European architects during the 1950s, directly opposed dogmatic modernist concepts (Scott F.D. 2014). Above all, they questioned the programmatic separation of urban functions in a city from a context defined as a geographical, historical, as well as a social and experiential site. We could add the spatial separation from the ground, regarding Le Corbusier's modernist designs on 'pilotis' (pillars that lift the building above the ground) in contrast to the house at Szumin. The Hansens explicitly criticised the concept of a literal 'machine for living'; that is, the architectural object as a mass-produced technological product. Not only resulting from estranged labour, in a Marxian sense, they perceived modern industrialized architecture as equally separated from the life of its users (Woliński 2014, 22). In the Hansens' eyes, it was a closed form, disconnected from its site and its inhabitants, not able to integrate elements present in a given place or situation, nor to generate as full an understanding of their interactions as possible (Harrison 2013, 283). It is exactly this form of site-specificity that Bruno Latour has advocated as a pragmatic political ecology, refusing to reduce objects to discrete –separate– entities (Latour 2004). Adaptation, as we will argue, is based on the (spatial) experience and recognition of the interrelatedness of elements at a site and beyond.

Today's adaptive architecture is equipped with sensors, actuators, and digital controls aiming to adapt certain building properties (e.g. façade, structure, rooms) to the current environmental conditions of a site or to various user needs (Van Hinte et al. 2003, Kronenburg 2007, Fox 2016). However, as we will show, they prescribe a limited set of mostly instrumental interactions to their agents and enforce a static conception of 'nature' as distinct from humans. Not only in terms of performance, but also spatially and aesthetically, many adaptive buildings distinguish between humans, technology, and environment, the latter understood as the topographical and climatic conditions of the immediate 'outside'. They preserve or re-constitute 'nature', humans, and technology as 'others'. By doing so, they may be smart, but not part of adaptation.

Architectural Adaptivity

We can observe a conceptual separation of nature, humans, and technology in many recent adaptive buildings, especially in the following three ways: these buildings show rigid demarcations of architectural spaces, programmes, and roles; they exclude other agents by applying optimal technological 'solutions'; and they forgo the capacity for complex change in favour of instant responsiveness. Leaving out the question of their actual environmental and economic impacts, an analysis of which is beyond the scope of this paper, these observations address an architectural and design discourse. We build on social and ecological theories that regard the (conceptual) separation of nature, humans, and technology into 'closed forms' as a momentous reason for our exploitative and destructive relationship to the planet (Latour 2004, Morton 2009).

Sharifa-ha House in Tehran, a recent example of a highly technological design, is a modern five-story urban villa built from concrete and glass between two existing buildings. Only its narrow south front is provided with openings, with three wood-clad cubes located there. These can be rotated independently of each other by 90 degrees out of the façade. To reach their final position, a complex technological process including the vacuuming of seals and lowering of floor areas and railings is necessary. While this adaptive system promises to provide more space of different quality, the question emerges: what is gained through the immense technological effort? After all, even the furniture must be removed for the rotation. Moreover, the centre of the house is not opened through the rotation of the boxes; it lies too far behind the windows. Instead, the architects have developed a sophisticated lighting concept with LED downlights and spotlights as well as pendant lamps. The adaptive system results in maximum isolation of the interior from the environment. Only the three boxes have a view when turned outward. The residents of the introverted house do not even experience the changes in natural lighting or weather, as the artificial lights automatically take over, continuously levelling the conditions. Instead of a solution with an excessive use of technology and materials, the opening and closing of the façade could have been achieved with simple shading elements. Yet, the design of Sharifa-ha House focused exclusively on the development of computerized, black-boxed solutions. All adjustments are automated, meaning that residents are extremely limited in their actions, especially in relation to other adaptations of the house. They are assigned the role of passive users with two options: rotated or not.

Many current adaptive buildings include isolated functions that do not allow for, or worse, even prevent, flexibility in and adaptation to other situations. In this way, these objects might even be less responsive than non-adaptive architecture. Sharifa-ha House cannot be adapted to different uses, as the rotation system, including a whole engineering level on the sixth floor, limits the possibility for different distributions of functions, as well as of other spatial experiences and alterations. Moreover, it replaces the surrounding—in fact, the whole—urban context with technology, blocking diverse experiences and interactions. With its obsession with automation, Sharifa-ha House and other current adaptive architecture risk impeding adaptation as a process that, we argue, should be shared by all agents on a site.

Departing from the observations of Sharifa-ha House, we posit that architectural adaptation succeeds via the inclusion, not exclusion, of diverse human and non-human actors within an open-meshed interrelating building and environment. By (re)integrating technological processes as well as social, ecological, aesthetic, and cultural practices, architectural adaptation might be able to make interrelatedness tangible and the 'intimacy of the environment' perceptible. Timothy Morton uses this notion to describe the mesh of 'open-ended concatenation of interrelations that blur and confound boundaries at practically any level: between species, between the living and the nonliving, between organism and environment' (Morton, 2010, 275). In this sense, openly conceived architectural adaptation must go beyond automation—that is, exclusion—to include diverse ideas and agents in its incomplete mesh. If we thus, following the Hansens, understand

openness in technological as well as environmental, social, and cultural terms, architectural adaptation might emerge as a praxis encompassing different perspectives, the communication and negotiation of biological, social, and aesthetic heterogeneity. As an architectural praxis, it could encompass the actions of different actors (buildings, organisms, surroundings), collectively develop methods of mutual adaptation, maintenance, and care, and establish new forms of cohabitation. This praxis of architectural adaptation could ultimately support a reform of concepts and relationships, both relating to the natural and social environment and extending to an urban and global scale.

Learning for a praxis of architectural adaptation

To (re)develop a concrete praxis of architectural adaptation, that is, a cultural technique of architectural adaptation, it makes sense to take one step back and to investigate the history of pre-modern or anti-modern instances of architectural adaptation. This is a first act of (re)integrating excluded ideas (actors) into the architectural discourse. By tracing different spatial, temporal, cultural, and technical dimensions of architectural adaptation history, we unfold our visions on the qualities and performance of future architectural adaptation.

By discussing three diverse examples, we aim to understand the close technological and socio-cultural entanglement of adaption as a cultural technique: a closely interlaced relationship between space, technology, and implied (cultural) practice (Siegert, 2015). According to Siegert, cultural techniques describe 'a more or less complex actor network that comprises technological objects as well as the operative chains they are part of and that configure or constitute them' (2005, 11). Embedded in a spatio-temporal context, they include basic human practices such as writing or cooking, which require technical developments (pen, pot) and often also bodily techniques (hunting, preparing). Ignored by modernist technological approaches, in seeking to understand 'past' modes of adaptation that included social, cultural, and natural dimensions beyond technological ones, we aim to redefine a future concept and method.

Our selection of historic examples considers what was probably the first adaptive structure, the tent (Schmidt III & Austin, 2014,). With it, we discuss adaptations in the nomadic way of life of the northernmost Inuit, whose lives were and are closely interwoven with natural environments, including animals, climate, and landscapes over the course of seasons. By looking at non-European cultural practices, traditions, and specific habitats, we not only want to unfold the different dimensions of interdependence embodied in architectural (re)production, but also include diverse examples in a hitherto Western-centric architectural history. We further look at the traditional Japanese practice of living and building, exhibiting a multitude of mutual adaptations of buildings, residents, and environments in one place. Finally, we will return to the practice of Oskar and Zofia Hansen, discussing their Open Form as a methodological approach to architectural adaptation, including diverse actors and practices, new collaborations, and interactions in contrast to modernist concepts.

By analysing the close intertwining of social, technical, and spatial adaptation in these particular cases, we do not frame the past nostalgically, nor do we seek to develop a non-technological architecture. By contrast, we want to frame an inclusive concept for current and future architectural adaptation that strives to closely involve people in the design, construction, and adaptation of their dwellings, as well as new forms of post-human collectivity.

In the conclusion, we relate our insights to the adaptive high-rise building currently under construction in Stuttgart as part of an interdisciplinary research project to which the authors belong, and outline its possible

development to incorporate technological, architectural, and social adaptation strategies (CRC, 2017). In doing so, we seek to establish an interdisciplinary discussion on the notion of adaptation, addressing the roles and capabilities of all agents as well as a shared responsibility in the (re)production of space.

Ways of adaptation in architecture

With the first example, we trace a way of living and building as a continuous process of adaptation, directly embedded in the environment and characterized by common practices of (re)production, care, and maintenance. The northernmost Inuit of Canada, Alaska, and Greenland were closely adapted to their natural environment of woodless regions, changing seasons, and different hunting and fishing grounds. Their nomadic movements north of the Arctic Circle correlated with animal migrations. Until the beginning of the 20th century, the Inuit lived in *tupiq* (pl. *tupiit)* in the summer. These tents were suitable for their journeys to various food grounds, as the adaptive construction could be dismantled in structure and shell. Moreover, they developed a technique to transform them into sleds in winter (Faegre, 1980) (see Fig. 1).

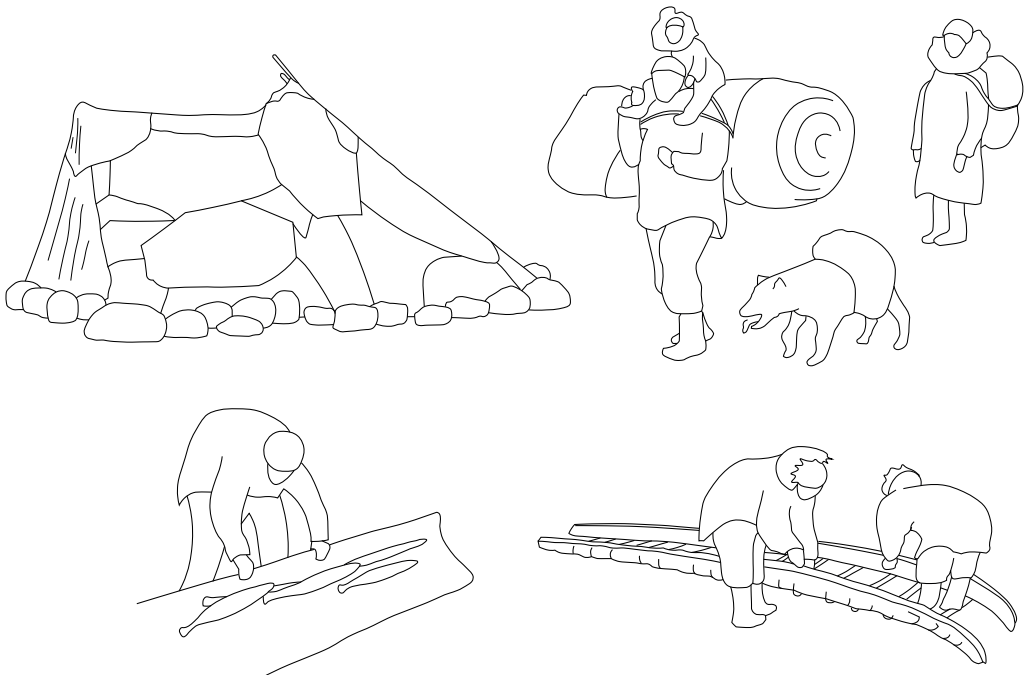

FIGURE 1 Tupiq summer tent of the Inuit, carried on nomadic migrations, transformed into a sledge in winter. (© Ulber, Mahall, Serbest; drawings based on T. Faegre)

Life in families and tribes also included dogs that carried loads or pulled sledges on the migrations. The Inuit's understanding and skills were characterized by an extremely sustainable approach to their environment, using all components of the hunted animals (such as caribou reindeer) for their dwellings, sledges, clothing, boats, tools, toys, and jewellery. Due to wood scarcity, the Inuit sometimes built their tupiq tents exclusively from animal products with poles made from spliced whalebones and antler pieces. The ridge tent with a semi-circular end had a cover made of caribou or sealskins; these were scraped toward the entrance to let in natural light. Life in the tent was hardly separated from its surroundings; rather, the borders were temporary, e.g., cooking was done outside. Moreover, the composite mesh-like tent cover was permeable for light through the skins at the entrance and for glimpses through small holes. It moved

in the wind, was flexible in shape, and lacked fixed borders. The building hardly separated people from the environment; rather, building methods and sites were part of their environment as they were of animal origin or made of snow. In winter, the Inuit came together as a larger community. In addition to the family igloos, they built a large snow house to celebrate shared feasts with dancing and singing. In the dark polar nights, Inuit people sat around smokeless whale oil lamps and told the stories of their tribe, mainly eating the stockpiled food, repairing and making equipment and tools, or carving objects and toys. In many ways, Inuit life was closely interrelated with the natural environment. People developed cultural techniques and practices for making, remodelling, and transforming their dwellings with a sustainable use of resources. Thus, they were intensively, physically involved in the production, maintenance, and continuous adaptation of their way of living and building: for example, in hunting and processing animals, scraping or sewing together furs, or cutting snow blocks for winter dwellings. Life and building took place in sustainable cycles with the local ecology; changes and adaptations took place mutually. In this region and time period, living meant participating in the creation, rebuilding and care of dwelling, food, and community in close relation to the natural environment, which was always present and tangible.

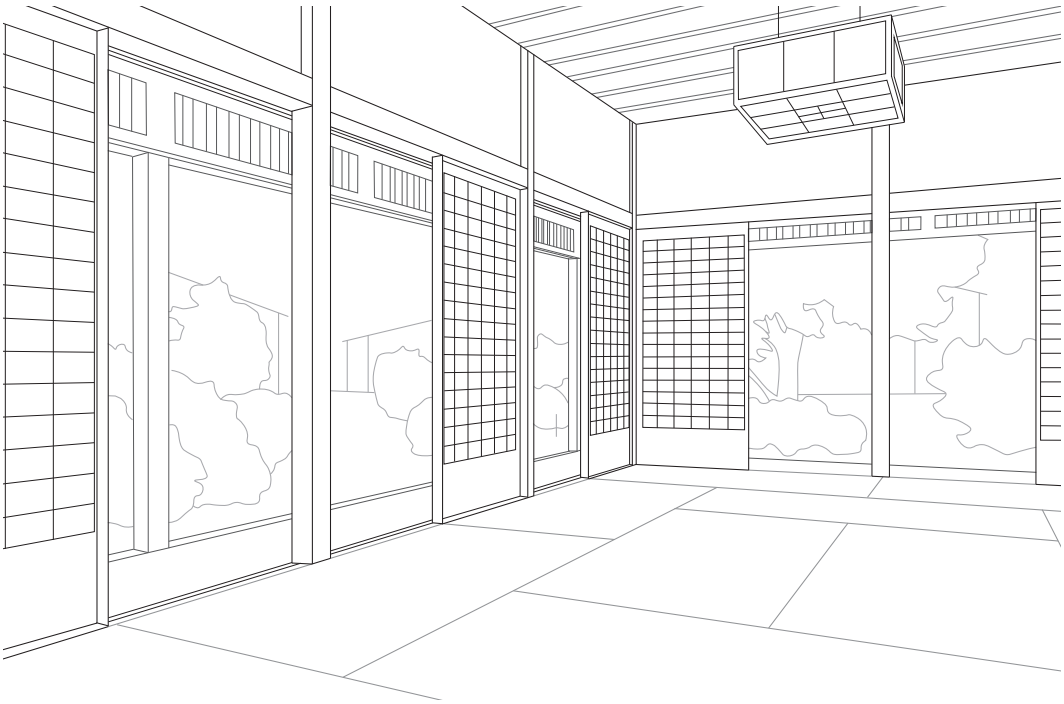

FIGURE 2 Dissolution of the interior-exterior separation in a traditional Japanese house. (© Ulber, Mahall, Serbest)

An adaptive example of settled architecture involving mutual climatic, social, spatial, aesthetic, and technical dimensions is the closely interwoven way of living and building in Japan evidenced up to the first half of the 20th century. The traditional Japanese house was located under an overhanging shady roof with terraces underneath (Tanizaki 1933/1977). This semi-open space around the house, *engawa*, extended the floor and ceiling of the interior and connected them with the exterior space. At the same time, it protected the spacious multifunctional living, dining, and sleeping room from sun, sky, rain, and wind. The interior spaces were opened with sliding elements, *shoji*, to the terraces on several sides and thus had a generous and direct connection to the surroundings (see Fig. 2). This dissolution of the interior-exterior separation resulted from and manifested a direct relationship of the residents to the natural as well as social environment, as it was a welcoming gesture for visitors and passers-by. The veranda-like *engawa* was an informal space for sharing tea and allowed the residents to adapt their house to the rhythms of the day and year, e.g., additional glass or wooden sliding elements on the outside provided protection in

winter. The inner *shoji*, covered with translucent rice paper, filtered the light inside the house and created a special atmosphere of gloaming when closed. The residents could divide the open main space of *tatami* floor mats made from rice straw using flexible wooden sliding walls filled with cardboard or cloth, *fusuma*. This reflects an overarching understanding of space in terms of diverse uses and a living community. The daily adjustments made by the residents in terms of openings, atmosphere, and subdivisions, but also in layout of seat cushions or the (un)rolling of futons, meant a high degree of bodily and ritual participation in a continuous process of adaptation, whether for climatic, social, or aesthetic reasons. The space system of the house was based on *tatami* mats (approx. 90x180cm) and rooms were sized according to this factor, e.g., 4 or 6 tatami mats (see Fig. 3).

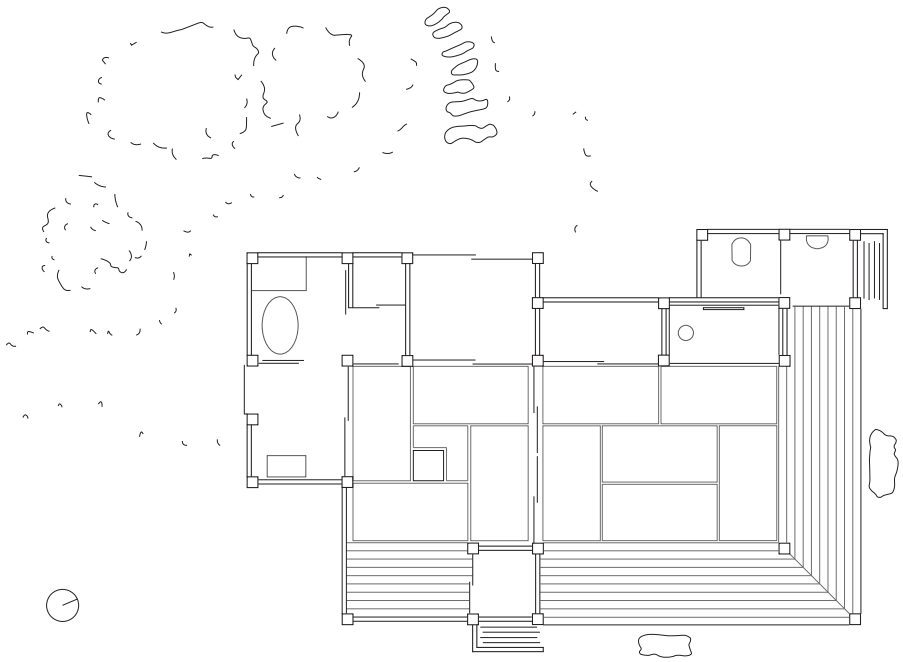

FIGURE 3 Space system of the traditional Japanese house based on tatami mats. (© Ulber, Mahall, Serbest; drawing based on B. Taut)

This enabled people to dimension their houses themselves, thus taking on the role of planners and making essential design decisions. A carpenter then built the house using post and beam construction with natural building materials, mainly wood, as this material was best suited to the Japanese climate (Young, 2012), as well as clay and rice paper. At that time, the roles and tasks of residents, architects, and craftsmen were not as separate as we know them today, neither in planning nor in construction. Moreover, the relationships between all living beings were close; there was hardly any distinction between guest and resident, and both slept in the same room. In summer, residents retreated to small northern areas of the house, leaving the sunny areas to silk spiders on numerous racks (Taut, 1937). Traditional Japanese culture exhibits close relationships with nature in material, spatial, and spiritual terms, with flexible or open boundaries, both between inside and outside (building and surroundings) and in terms of separating individual functions in the house. The living and building practice of this time brought together diverse organisms, natural materials, cultural objects, adaptive actions, and collective relationships in an open mesh to enable mutual and continuous adaptation to changing natural, social, and spatial contexts. The residents were able to spatially and aesthetically adapt their homes to different times of the day and year, and to connect them to their surroundings in varying degrees.

The two pre-modern examples show how the social, spatial, climatic, and technical dimensions of architectural adaptation were interwoven, including the bodily participation of the residents within flexible or permeable boundaries between inside and outside, giving the environment a meaning in their lives.

A method of architectural adaptation

Returning to Oskar and Zofia Hansen, we consider more closely the 'Open Form' as an alternative approach to modernist architecture, which they perceived as rigidly mono-functional and incapable of change. Starting in 1955, they analysed residential buildings of the 'large number' as 'closed forms' – unresponsive to individual residents, unable to react to changes, and obsolete even before construction (Hansen 2014, orig. 1961). In contrast, the Open Form proposed a reliance on appropriation, initiative, and change by the residents, on individual expressions in the collective, and on joint negotiation and processual development. The Open Form concept was tested and developed primarily in exhibitions and pavilions as well as with students at the Academy of Fine Arts in Warsaw. The Hansens were able to explore some approaches in realised residential projects. On the Slowacki estate in Lublin in 1961, they included the ideas of the future residents and designed different floor plans with balconies in various places and with varying numbers of windows (Hansen, 2005). To break up the uniformity further, some of the buildings were stepped and accented with colour, and the entrances were also spatially different. On the Grochowski estate in Warsaw in 1963, the Hansens, in collaboration with others, tested open corridors with a specially developed communication system. Different colours and symbols reflected the heterogeneity of the residents and allowed for communication between them. The semi-public corridors, open on one side, connected the individual flats and, like the Smithsons' 'streets in the sky', offered places for encounter and meaningful interaction. For all housing projects, the Hansens created meandering or stepped structures in the courtyard as a 'Theatre of Open Form'; residents could appropriate these and use them, for example, as flowerbeds, playgrounds, seating areas, or for performances (Hansen 2005, p. 84). These housing projects show how the Hansens tried to implement their approach and begin a heterogeneous practice of participation. In addition to today's classic participatory planning, incomplete open forms playfully and experientially invited residents to occupy these structures and, through them, to participate in the long-term process of collective adaptation.

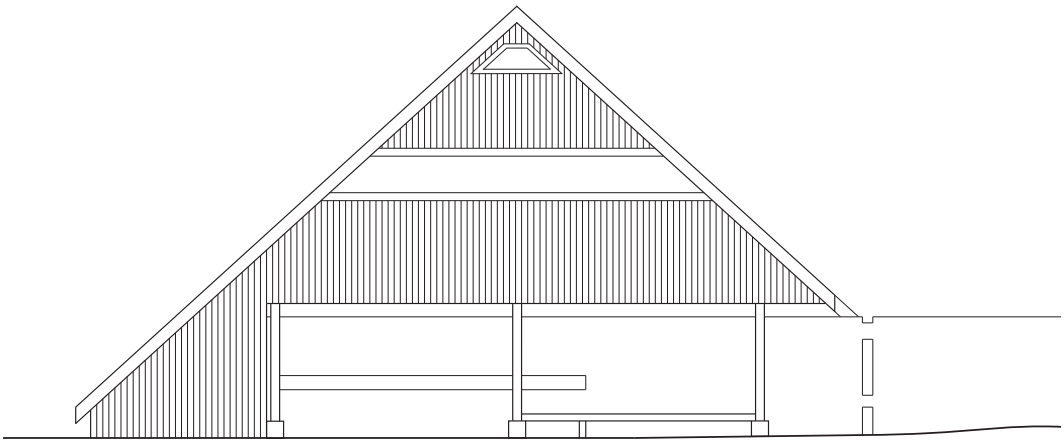

FIGURE 4 House Szumin with large roof and entrance wall as a background for passersby, inviting to pause on the bench or to enter the house. (© Ulber, Mahall, Serbest)

The processual and integrative Open Form approach was most extensively implemented in the Szumin Summer House, later the Hansens' main home (Wielocha & Kędziorek, 2016). Over a period of 37 years, collective interaction and ongoing change took place in an open process, with building and remodelling, spatial aesthetic experiments, care for the natural environment, and social collaboration. In 1968, they first built a piece of wall on a simple grassy plot only 60m from the river Bug. A part of this wall ran inside the house, on the outside it was a background for passers-by and visitors, inviting them to pause on a bench or to enter the house (see Fig. 4).

The adjoining building structure was erected in a first phase by 1970 and continuously extended and changed until 2005. Today, the house, which is mainly a large roof, still covers both open outdoor spaces and some interior spaces. On the ground floor, the central adaptable dining and working table extends from the interior 'kiosk' with attached kitchen to the covered outdoor area (see Fig. 5). Two lateral axes, one with social and one with service functions, connect the open and closed parts of the house with the open courtyard and annex buildings. On the upper floor, there are the only fully enclosed living and working spaces with gable-side bands of windows overlooking the surrounding landscape. The Hansens closely intertwined the building and its environment: they supported constant growth by planting trees on one part of the site, now a forest, growing fruit and vegetables in another, and cultivating a social garden area. Furthermore, the Hansens set up countless birdhouses in the garden, which guests were invited to bring along (Fudala, 2021). House Szumin was an open place for the village community, visitors, and many of Oskar Hansen's students and friends, and it was open to their continuous changes. The main table, half inside and half outside, could be adapted by the guests. Hansen continued his teaching there; various apparatuses were available for composition exercises but also for expressing emotions or finding a menu (see Fig. 5).

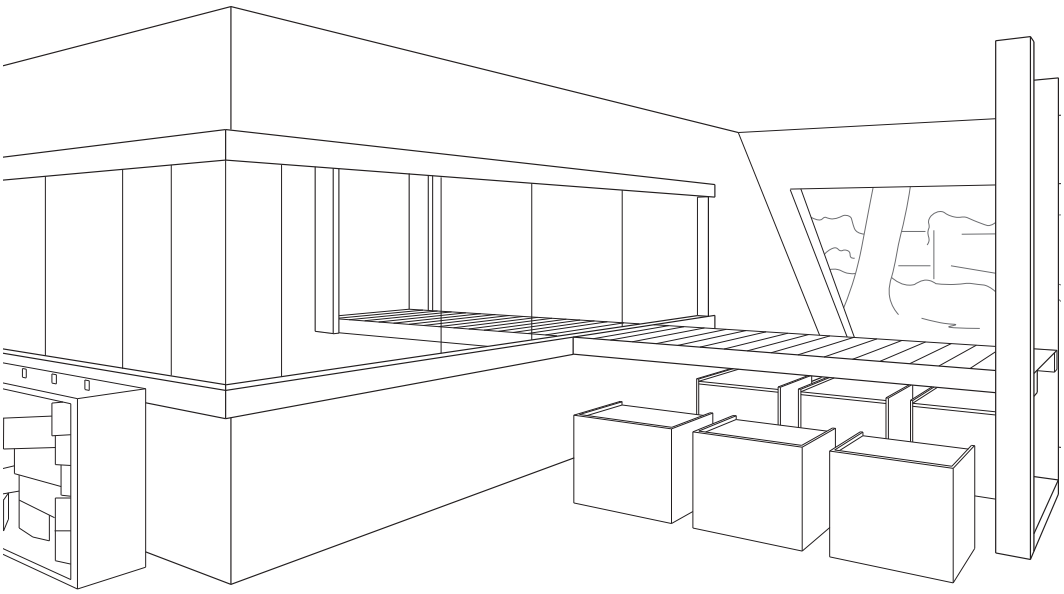

FIGURE 5 Hansens' semi-open space with adaptable table, half inside and half outside, and aesthetic apparatus. (© Ulber, Mahall, Serbest)

Coloured surfaces and compositions in the interior and exterior, especially those of the entrance wall, were continuously changed by the Hansens to welcome new guests. A diverse aesthetic emerged from a manifold appearance wrought by visual experiments, the interactions of human, plant, and animal actors, and by changes over time. The Hansens regarded their architecture as an 'absorptive background' for the life of people, animals, and plants (2005, p. 109). In fact, the house promoted experiences of the site and involved diverse actors in an open process via a connection to the ground and to the surroundings by means of the deep roof, the open wall and open corridors, the adjustable table, and various aesthetic apparatuses.

FIGURE 6 Adaptive high-rise under construction on the campus of the University of Stuttgart (© ILEK, Institute for Lightweight Construction and Conceptual Design)

The Open Form concept, which Oskar and Zofia Hansen advocated throughout their lives, stands for a processual understanding and practice of architecture. Buildings were never finished, so there is no final drawing of Szumin either. Open structures have been built without a final use and left to inhabitants for (re)production. Instead of a homogenous architecture, the Hansens aimed for a diverse and varied, above all, site-specific material use and aesthetic. Buildings were rather part of 'environments', with diverse inhabitants constantly changing in mutual correlation (Ulber et al., 2021). These open-ended, processual situations were models for enabling a practice of re-evaluating boundaries, roles, and concepts in the (re)production of space. Encompassing material, technological, social, and cultural dimensions, their adaptations supported both societal and technological change on a local and global scale. The global scale was not primarily addressed through a spread of technology, but rather through the transfer of a common praxis of adaptation.

Following this concept of praxis, if architectural adaptation is understood as a collaborative and open process of all agents, adaptive actions by buildings, residents, and the natural and social surroundings must be considered. Can we apply this approach to the adaptive high-rise under construction on the campus of the University of Stuttgart (see Fig. 6)? Phased planning and implementation is envisioned for it, as well as further adaptations during use (CRC, 2017). The initial developments are technical: the adaptive structure responds dynamically to storms and earthquakes; various adaptive façades on the floors regulate solar radiation, rainwater, wind, and energy. In addition, individually adaptive spatial qualities and an interactive interior structure are being developed.

FIGURE 7 Future scenario of the adaptive high-rise building; the open staircase structure is inhabited by plants and used by students for diverse encounters and collective events. (© A. Antonopoulou, S. Barati)

We have been investigating the potential of the high-rise building for open social, aesthetic, and environmental adaptations. Our processual approach is to enable students and the surrounding green space to take agency of the double of open stair tower and stacked spaces. Our aim in different scenarios is to continue to (re)develop the structure in collective and inclusive processes. On different time scales, over months or over years, adaptation will extend beyond the technological processes. Aesthetic and spatial experiences might become more diverse through the interaction of many agents. The stairwell, including its framework, could be inhabited by plants and animals, and used by students as a mixed space for diverse encounters and collective events (see Fig. 7). The individual rooms could be adapted to become study rooms or as community and experimental spaces. The ground floor serves the surrounding open space while further up, a terrace provides a space for the evenings. One level, as an open green space, provides a habitat for plants, birds, insects, and bats (see Fig. 8).

Interdisciplinary students can develop and test adaptations and conduct spatial experiments in relation to the environment and the building. For students, the high-rise can become a meeting place, enabling diverse interactions on campus; as a student-run centre, it can be frequently and continuously adapted. In this way, we can learn more about the processes and practices of architectural adaptation and its spatial, technical, and social dimensions. Following the Hansens' pedagogical method, students are actively involved in a collective process of negotiation and interaction with the building and the environment. Only through testing and experimentation, from accumulated experiences and acquired skills, can a praxis of architectural adaptation be established.

FIGURE 8 Future scenario where the ground floor serves the surrounding; students develop adaptations and spatial experiments in relation to the environment and the building. (© A. Antonopoulou, S. Barati)

Conclusion and Prospects

We have emphasised the spatial, social, technical, and environmental dimensions of architectural adaptation. Furthermore, we described it as an open process on different time scales and of diverse aesthetics. We have discussed it as a collective process of negotiations and interactions by heterogeneous agents on a site. Through this open process, roles and agencies of all participants shift continuously, including architecture performing actions and providing meaningful interactions. The architectural excursion revealed different seasonal practices of ecological adaptation among the Inuit, different time scales of adaptation in the Japanese house, the Hansens' method that enabled interaction beyond technical instrumentality, and spatial, technical, and social dimensions of the architectural adaptation process in and with an experimental building on the Stuttgart campus.

Since the first adaptive building, the tent, to the beginnings of modern architecture, mutual and collaborative adaptation has incorporated technical developments with interactions of people in their local environments. Therefore, architectural adaptation can be understood as a cultural technique that involves diverse materials and bodies, as well as technical and aesthetic performances, into a spatial praxis. By recalling the inclusive spatial practices of past adaptations and re-integrating social, natural, and aesthetic dimensions, buildings and cities can re-enable continuous adaptations on the part of their inhabitants and the environment. As a cultural technique, architectural adaptation will, moreover, contain characteristics of the technical and the symbolic. Through a poetics of diversity (Glissant 2020), that is, by visualizing the mesh of interactions, it might be capable of opening new ways for us to act on and understand the earth.

If architectural adaptation is understood as a practice, reproducing the mesh in the sense of Morten, then all human and non-human agents as well as bodies can participate in this open and interrelated process. The mesh is permeable and integrating, connecting buildings, people, and environment in a spatio-temporal heterogeneity whose mutual changes and adaptations result in an aesthetic diversity. Thus, all agents at a site can participate and interact with each other, ultimately forming new collectives with different species, organisms, and things.
Our meander through diverse architectural examples aimed to address interrelatedness in various dimensions: the spatio-temporal interconnection of inside and outside, the socio-aesthetic inclusion of all agents into a practice of heterogeneous collectivity, and processes that might be capable of facing current climate, social, and pandemic crises.
The projects discussed indicate the interrelationship between all agents of a site. They help oppose a separatist thinking of humans, technology, and the environment as materially, processually, and metaphysically closed entities. They exist as open forms opposing static conceptions of inside and outside, of building/technology and historical, social, and ecological contexts, as well as of production and use.
By overcoming spatial-technical isolation and (re)connecting with the social and natural environment, we might be able to adapt our own actions, take responsibility, and ultimately initiate social and cultural change (Ulber & Mahall 2019).

In order to overcome a purely technological adaptation in architecture, buildings need to be part of an open and shared adaptation process including social, spatial, and cultural actions. This requires a new design approach that does not only provide 'prefabricated' technological solutions, but also possible adaptation scenarios for changing states. Significant transformations of the tasks and roles of architects and users, sharing a process of (re)production, are therefore necessary. For instance, residents should actively—and following the Hansens, even physically—be involved in the production process. According to the architects, this form of bodily participation would promote identification with and responsibility for reproduction and adaptation processes (Hansen, 2014).

To allow for social differences to exist in their multiplicity and heterogeneity, architectural adaption must be radically inclusive (Nawratek, 2015), allowing conflicts on the basis of solidarity and empathy. Disadvantaged persons could, for example, play a crucial role in the arrangement of non-violent, communal life in cities and houses. Architectural adaptation thrives on social and aesthetic diversity: the opinions, ideas, and needs of people who have mostly been excluded from architectural processes. They might have the capacity to add new perspectives through which different options and solutions become possible. Open development and the testing of new ideas and spatial experiments become possible by including, through the acts of hearing and seeing, diverse positions and allowing them to be a part of equal discussions. With the reconceptualization of architectural adaptation, we therefore outline a spatial practice that recognises processual, social, and aesthetic dimensions beyond the technical and enables inclusive processes of adaptation to face current and upcoming challenges. This architectural practice outlasts the design and integrates all actors (human and non-human) and agents (building, city, environment) with a shared responsibility in design, (re)production, and ongoing adaptation.

References

CRC Collaborative Research Centre, 1244 (2017). *Demonstrator.* Retrieved March 31, 2021 from https://www.sfb1244.uni-stuttgart.de/en/demonstrator/

Faegre, T. (1980). *Tents. Architecture of the nomads.* Knopf Doubleday Publishing Group.

Fox, M. (2016). *Interactive architecture. Adaptive world.* Princeton Architectural Press. New York.

Fudala, T. (2021, May 18). *House Hansen, Szumin by Hansen* [Lecture session]. Lecture series Prof. Putz, TU Munich

Hansen, O. (2005). *Towards open form. Ku formie otwartej.* Fundacja Galerii Foksal.

Hansen. O. (2014). Open Form in Architecture – The Art of the Great Number. In: Wieder, A. J. & Zeyfang, F. *Open form: Space, interaction, and the tradition of Oskar Hansen.* Künstlerhaus Stuttgart, pp. 43-45. (French original work published 1961)

Harrison, A. L. (2013). *Architectural theories of the environment. Posthuman territory.* Hoboken.

Hinte, E. van, Neelen, M., Vink, J., Vollaard, P. (2003). *Smart architecture.* 010 Publisher.

Glissant, É. (2020). *Introduction to a poetics of diversity*. Liverpool. (French original work published 1995)

Kolarevic, B. & Parlac, V. (2015). *Building dynamics: Exploring architecture of change.* Routledge. https://doi.org/10.4324/9781315763279

Kronenburg, R. (2007). *Flexible: Architecture that responds to change*. Laurence King.

Latour, B. (2004). *Politics of nature. How to bring the sciences into democracy.* Cambridge.

Morton, T. (2009). *Ecology without nature*. Harvard.

Morton, T. (2010). Guest column: Queer ecology. *PMLA, 125* (2), 273-282. http://www.jstor.org/stable/25704424

Nawratek, K. (2015). *Radical inclusivity. Architecture and urbanism*. dpr-barcelona

Schmidt III, R. & Austin, S. (2016). *Adaptable architecture: Theory and practice.* Routledge.

Scott F.D., (2014). Future adaptability. In Wieder, A. J. & Zeyfang, F. (Eds.), *Open form: Space, interaction, and the tradition of Oskar Hansen.* Künstlerhaus Stuttgart, pp. 34-42.

Siegert, B. (2015) *Cultural techniques. Grids, filters, doors, and other articulations of the real*. Fordham University Press.

Tanizaki, J. (1977). *In praise of shadows.* Stony Creek. (Original work published 1933).

Taut, B. (1937). *Houses and people of Japan.* The Sanseido Co.

Ulber, M. & Mahall, M. (2019). Adaptive architecture as mediator between humans and earth. In: *Agathón | International Journal of Architecture, Art and Design*, Vol. 6, pp. 94-103.

Ulber, M. Mahall, M. Serbest, A. (2021). Environments. Actions of adaptation in architecture. In: *Loci Communes | International Journal of Studies on Spaces in Arts and Humanities, Anthropology and Architecture*, Vol. 1.

Wieder, A. J. & Zeyfang, F. (2014). *Open form: Space, interaction, and the tradition of Oskar Hansen.* Künstlerhaus Stuttgart.

Wielocha, A. & Kędziorek, A. (2016). Preserving the open form. The Oskar and Zofia Hansen house in Szumin. *Between architecture and contemporary art, Studies in Conservation, 61*(2), pp. 248-254.

Woliński, M. (2014). Building activity, sculpting communication. In: Wieder, A. J. & Zeyfang, F. *Open form: Space, interaction, and the tradition of Oskar Hansen.* Künstlerhaus Stuttgart, pp. 18-31.

Young, M. & Young, D. (2012). Introduction to Japanese architecture. Tuttle Publishing.

It's too late for pessimism

How the Deep Adaptation Agenda is relevant for teaching in the spatial disciplines

Daniel Zwangsleitner, Elettra Carnelli, Benedikt Boucsein, Elif-Simge Fettahoglu-Özgen

Technical University Munich (Germany)

Post Pandemic theatre, for me, is a theatre, that is aware,
more than ever, of its own vulnerabilities and limitations,
it is a nude theatre, it's a crack in the medium, it's a half empty hole,
a hacked system, and like every crisis, the pandemic demands
from us artists more, not only as an artistic challenge of how,
but as a challenge of articulating the crisis as a real chance and as a new reality

Ben-Yishai, S. (2020, November 12). Sivan Ben Yishai, what is postpandemic theater?

Abstract

The crises we face today call for a careful assessment of our collective and individual understandings and responses. The past decades have shown us that acknowledgement of the emergencies alone is not sufficient to address the problems, especially within the complex context and conditions of the built environment. In the face of 'inevitable' change, and of current and future challenges, this urges us to direct a critical glance towards how we understand and frame the problems as spatial practitioners, how we position ourselves towards them, and how our ethical and professional responsibilities and agencies must change. As an open question and a long-term endeavour, this echoes within the context of academia. However, a central position has yet to emerge. In this article, we give an account of our experiences by taking a closer look at the approaches, formats, and method we have employed at the Professorship of Urban Design at TU Munich and elaborate on how these concerns can be embedded in the content, systems, and structures of teaching, and how the Deep Adaptation Agenda plays a facilitating role in this ongoing attempt.

Keywords

Deep Adaptation Agenda, University teaching, Spatial practices, Climate crisis

DOI

https://doi.org/10.47982/spool.2022.2.04

Introduction

Scientifically, the dramatic nature of the current situation does not need to be stressed. Climate crisis, biodiversity crisis, global inequality, and spatial injustice, often connected to our 'imperial way of life' (Brand and Wissen, 2017) that externalizes its costs either to other regions of the world or to future generations, are endangering the planet's capacity to sustain human civilization as we know it in the next decades. By now, these facts have been widely accepted. Despite all the rhetoric, though, there is no change underway in the magnitude that would be needed to avert catastrophe(s). While the targets currently set by governments around the globe would probably only soften the blow that will hit large parts of the world in the coming decades, it seems improbable that even these goals will be met.[1] Despite pledges at the international level, rainforests are burning, coal plants are being built, cars are being produced, and even modest sanctions like speed limits in Germany are not being implemented – as if we had a choice but to adapt, to slow down, to fundamentally change.

The situation is characterized by a crass dichotomy between the knowledge about how the problems could potentially be tackled, and the apparent difficulties involved in change actually taking place in the necessary magnitude. It sometimes even seems that the 'solutions' presented to us serve as intellectual tranquilizers to distract ourselves from the fact that, indeed, not many issues are being solved. Also, many approaches entail new problems that then, again, need to be 'solved'. These mechanisms, as they are intrinsically linked to how capitalism functions, are difficult to unmask. It is hard to differentiate between these processes and factual improvements, such as the transformation of the energy sector, which is slowly underway, or other, more invisible changes.

Planning, urban design, and architecture are at the centre of this discussion, as these disciplines connect the many, multi-faceted aspects of how we live, work, consume, etc., and how they are reflected in the built environment. As the practical work in these fields is strongly bound to the current conditions and mechanisms sketched above, universities play an important role as places of free thought, education, and research. However, our education systems are deeply embedded in the 'old ways' as well, in terms of the curriculum and in how professional agencies are defined. Advocating change is thus not limited to warnings or concerns, but also entails a reconsideration of all the roles in the educational and professional fields. Architecture and planning faculties have the freedom and the responsibility to straightforwardly address this and to suggest possible approaches for the next generation of spatial practitioners. It is the last aspect that this article addresses, especially the role of the 'Deep Adaptation' paper by Jem Bendell (2018/2020), which plays an important role in the authors' efforts to develop a teaching strategy to tackle the situation sketched above.

The Deep Adaptation paper draws a narrative of climate change that contradicts the optimism of the wider rhetoric on climate change, and implies an emergency, by suggesting the inevitability of societal collapse. Its depictions and assessments veer away from the comforts of our collective belief in the techno-social systems in which we are deeply embedded. Many of the critics of Bendell's paper claim that it exaggerates, that it is doomism, that it is completely unscientific, that the sources he cites do not allow his conclusions to be drawn, etc. We do not want to and cannot discuss all the criticism in detail here, and instead refer to discussions in Nicholas, Hall, Schmidt (2020) and Bromwich (2020).[2] For us, the quality of the paper lies first of all in the impact it has had: it functions as an eye-opener, possibly with the help of exaggeration, in order to create awareness using drastic descriptions, trying to get people to act. Somehow, the urgency must be

1 See for example David, 2017 and Watson et al., 2019.

2 For an extensive listing and critical analysis of optimistic and pessimistic stances in the debate on climate change, see Nordgren (2021).

conveyed that it is, indeed, 5 past midnight, even at the cost of triggering depression, as was so memorably described in Vice UK (Tsjeng, 2019). Climatologist Michael E. Mann, although an outspoken critic of Deep Adaptation, in a recent interview in *The Guardian* (27 Feb 2021) acknowledges that a sense of doom 'can be enabling and empowering as long as you don't get stuck there' and 'ensure that experience can be cathartic'. Bendell's paper for us fundamentally states: *Open your eyes! The emergency is here! There is no turning back and no way around it!* We humans often have difficulties in thinking more than two steps ahead. Doubt and a certain inertia inhibit us from taking action, the present being so strong and effective; how easy it is to simply dismiss the future, a possible future, until it might be (too) late, as vividly illustrated by Foer (2019, p. 13): 'When the bombers are overhead, as they were in wartime London, it goes without saying that you will turn off all your lights. When the bombing is off the coast, it doesn't go without saying, even if the ultimate danger is just as great. And when the bombing is across an ocean, it can be hard to believe in the bombing at all, even though you know it is happening. If we don't act until we feel the crisis that we rather curiously call "environmental" – as if the destruction of our planet were merely a context – everyone will be committed to solving a problem that can no longer be solved.'

Communicating the urgency to act is difficult, because, as marine biologist and filmmaker Randy Olsen states, for many 'Climate is quite possibly *the* most boring subject the science world has ever had to present to the public' (p. 16, emphasis in the original). Therefore, the following questions arise as we lay out our teaching formats and didactic approaches: How can we bring the seemingly boring or intangible to light, to vision, to surface? How can we emphasise antagonisms without being reductive and introduce the planners as transformative protagonists? For us, Bendell's paper represents a way to present the implications of climate change with the urgency they deserve: it outlines the state of emergency and helps to facilitate its message to the students.

In the context of our teaching, the Deep Adaptation Agenda (DAA) represents one resource within a structure of fundamental position documents, set up as incentives to remember, to challenge, and to update our foundations, integrated in our manifesto for 'Post-Acceleration Urban Development'.[3] Within this framework, Bendell's article is assigned as the first text in seminars and design-studios: the urgency expressed by the article has a strong impact on the reader, and serves as a call to action that we consider important as a course kick-off. We want to begin these courses with the awareness that something must be done, that change is necessary: according to Amitav Gosh, 'the climate crisis is also a crisis of culture, and thus of the imagination' (2016, section 4, para. 2). Spatial planning, and in extension, all the spatial disciplines are not reduced to giving shape to the world, but instead are concerned with 'discovering the options people have as to how to live' (Thrift, 1996, p. 8). Therefore, spatial practices can and should play a crucial role in finding a way to actively deal with and confront these concerns. Here, we would like to share our teaching approach, which was and continues to be inspired by the Deep Adaptation Agenda, intended as a point of departure and a setting of mind.[4]

3 This manifesto was published in 2018 as a founding document of the professorship of Urban Design at TU Munich to situate the team's activities and principles in research and teaching. It focuses on framing current challenges from an urban design perspective, developing knowledge, and pointing out new ways in which European cities can be further developed. At the same time, it proposes a series of guiding principles, aiming at a transparent and collaborative working style. The current version can be found at https://www.arc.ed.tum.de/en/ud/professorship/

4 The authors teach at BA and MA levels in the architecture and urbanism programmes.

TEACHING PHILOSOPHY

The framework of our teaching philosophy draws inherently on our self-construction as facilitators and conveyors of knowledge in co-creative settings. We believe that the DAA is a perfect wake-up call for fundamentally questioning the way we live, work, move, and organise our cities. While its primary focus is the climate crisis, it is not limited to that: it is rather linked to a whole series of behavioural traditions, dynamics, tendencies, procedures, power relations, and approaches to the world that should be considered to change the systems. Action, and change needed to tackle it, reach far beyond. The following reflexive account is the constantly evolving, and, depending on the occasion, flexible backbone of our approach to teaching and learning.

One of our important principles is communication between equals: we strive to enable students to develop self-confidence, self-esteem, and self-assessment through various forms of recognition. As a prerequisite to taking an active role in the world, it is important to recognise one's role as an actor, to acknowledge that the dynamics that lead to the state of things can be altered, and to apprehend the dynamics that can change these conditions. This constitutes a learning environment not only for the students but also for us, traditionally referred to as educators or teachers, just as much. We do not focus so much on giving actual shape to the world in our teaching, with which the spatial disciplines are often mostly occupied: instead, to begin with, we emphasise thinking and understanding, so the students can judge what tools of the spatial disciplines could be applied at what point in a process. Furthermore, although theory and literature play an important part in our teaching, we are not trying to claim or create knowledge, but instead seek to expand understanding. Here, what may seem like splitting hairs comes from a rejection of knowledge as a rigid concept, as well as planning in terms of end states. Our approach to gathering experience about the world is also flexible and humble. Expanding understanding as a concept behaves like an inverted funnel. We try to push the door open a little wider, and look left, right, up, down, and beyond. In doing so, we strive to not miss aspects, discourses, or actors that may seem not to be of importance, but often turn out to be precisely the decisive ones. Future planners need this knowledge to understand (spatial) phenomena both analytically and in terms of the proposed interventions. Moreover, an important focus of our teaching formats lies in the question of how the specific knowledge of planners can contribute to facilitating change – be it through projects, scenarios, exhibitions, interventions, publications, or other means. In this process, critical reflection and the planner's approach to the situation are not separated, but go hand in hand, with different emphases at different points in the process.

Wake-up call

In this context, we take a stance as educators, questioning the tasks and roles of planners within society: climate and biodiversity emergencies require systemic change, and this includes spatial disciplines and their value systems. The current approaches to solving the many problems at hand have so far not yielded the success that is necessary. Through our teaching formats and content, we want the next generation of planners to be able to enact radical action and thinking. The awareness of the need for change should act as a call to test new ideas and approaches to future challenges, or to question and reconfigure existing ones. In this way, we aim to provide the tools to develop what is needed to cope and face the inevitable change: that is, in our view, a flexible way of thinking, not limited to disciplinary boundaries. Future challenges 'are defined by their interconnectedness and by change. They cannot be solved with the old processes, but require new forms of thinking and working, combining a planetary consciousness with responsible humanism that respects and enables local expertise.' (Harriss et al., 2021, pp. 14-15). Therefore, future challenges must be the basis for a reconfiguration of current approaches, a creative restructuring and reassessment of what it means to be a planner, urban designer, or architect.

Power of Conditions

A crucial premise of our teaching approach is that architecture, and by extension, urban design and planning, are not autonomous, but rather dependent and heteronomous disciplines (Till, 2009). Indeed, they are shaped and strongly influenced by external conditions, such as the economy, legislation, politics, (building) culture, technology, and society. These forces are beyond the planners' control, despite their attempts to resist and sometimes even deny this dependency. However, this dependency should not be seen as an obstacle, but rather as an opportunity. In fact, external conditions can be used as positive tools in the design process. Furthermore, we believe that awareness of this dependency of architecture and planning fosters dialogue with different disciplines, people, and circumstances, linking them to society and its needs. Thus, the relationship with external conditions can be made fruitful in theory and practice and can contribute to the reformulation of spatial agency (Awan et al., 2011) as a shared enterprise. We specifically address these issues in the context of the yearly lecture series 'The Power of Conditions', in which we expand the discourse outside the professional 'bubble' through contributions by experts and actors from different disciplines. Within design studios, workshops train students to embody different perspectives, through which they critically analyse and comment on their peers' projects. In this way, students can become aware of the power of conditions, the effects they can trigger in the design process, and how they can influence the built environment. Through our teaching approach, we therefore pursue the idea of the spatial practitioner as an imaginative interpreter aware of their social role, carried out for and with other actors within a given setting. Within spatial agency as a shared enterprise, spatial practitioners should be aware of external conditions and ready to shape them actively.

Being Political

Being political, for us, means being aware that every action always has a political dimension: it inherently involves taking a stand. Whether this is a conscious process or completely unconscious, there is no getting around it. Just as Fezer (2018, p. 216) puts it: 'Die willentliche Veränderung des Zustands der Welt kann überhaupt nicht anders als politisch beschrieben werden' [The wilful change of the state of the world cannot be described in any other way at all than being political]. This fundamental assumption is always integral to our teaching philosophy. Often, this concern is tackled implicitly, sometimes it is explicitly put in the foreground, as in the winter semester 2021 master studio, with the title 'The Political Site' already making this clear. In this context, being political also means preventing the discourse about the climate emergency from becoming narrow and not letting it lead us to neglect equally important issues such as spatial justice, social justice, and climate justice, each from a global perspective. One of the criticisms of the Deep Adaptation paper was precisely that it would not address the fact that 'gross inequality and injustice are fundamental to climate change' (Nicholas et al., 2020). In addition, we believe that the causes and effects of the current crises are interrelated and mutually reinforcing - Brand speaks of 'multiple Krise' [multiple crisis] (2009) - and cannot be addressed in isolation from each other. Above all, we must avoid legitimate concerns being played off against each other or one concern being addressed at the expense of the other.[5]

One of the fundamental aspects of educating spatial practitioners is to emphasise taking a generalist, transdisciplinary position: an almost unmanageable variety of requirements and justified demands by diverse actors must be weighed against each other. Meeting all requirements and needs is simply impossible, and planning decisions for legitimate interests are always decisions against other equally legitimate interests. What we want to achieve above all is awareness of the fact that planning decisions

5 For an illuminating discussion of the interdependencies and pitfalls of the housing question and the climate crisis, see the debate 'Wohnen in der Klimakrise' (Vollmer and Michel) in *s u b \ u r b a n*, 2020, vol 8.

always have a political dimension. Being political also means questioning one's own role: we try to raise awareness among our students of the fact that they are operating in a complex system of actors. Then they can also consider what role, which concept of 'the planner' they want to adopt, what their specific responsibilities are, and what the corresponding agency might entail.

Taking Action

During the semester, as a result of the readings, discussions, and mappings, some questions tend to recur: where does one have to start to initiate the change, practically, as a (future) spatial practitioner? How can we propagate what has been studied, discussed, and achieved within the studio outside the university? How can we raise awareness among the public? How can alternative values emerge and take root in society?

We do not have full answers and recipes to these interrogatives, because the open structure of our teaching formats prevents us from thinking in terms of end states. Rather, we want to provide the students with the means to realise where and how to intervene, as an invitation to think more broadly about system change. We borrow the concept of 'leverage points' from Donella Meadows, intended as 'places within a complex system (a corporation, an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce big changes in everything' (1999, p. 1). We challenge our students to find these leverage points within a given context, and to try to push these levers outside the context of the university, questioning how social change can lead to spatial change. Indeed, societal values and behavioural logics are crucial aspects to consider for a system's transformation and adaptation. Meadows' explanation of the system characteristics and their interconnectedness shows the promising effect of restructuring them, in order to trigger a considerable impact. Our concern is to find out what exactly the contribution of the spatial practitioner can be, based on their specific qualifications and their specific positioning in the field of spatially operative actors.

Taking action for us means instilling a new way of seeing through tactical approaches that highlight the seemingly untouchable paradigms of our systems. In Meadows' words: 'you keep coming yourself, and loudly and with assurance from the new one, you insert people with the new paradigm in places of public visibility and power.' (1999, p. 18). In this sense, informing, as the act of showing different ways or (spatial) structures, plays a crucial role, since it makes it possible to reach and spread awareness, which constitutes the basis for responsibility and action. Therefore, the contribution of the planner, in the form of spatial interventions, can for example focus on the creation of spaces that enable participation and mutual exchange; spaces for resonance and dialogue that allow people to co-create how we want to live together. It could nevertheless be as simple as the provision of adequate housing, well-functioning co-working spaces, accessible urban commons, etc.

CRITICAL REFLECTION

Planning education is, by definition, a complex task – it is difficult to prepare for what awaits the planner in the field. But, until the current ecological crisis (which of course has been underway for many decades, maybe centuries), there at least seemed to be a basis of what could be conveyed to prepare for this complexity: planning procedures, disciplinary roles, functional requirements, different dimensions of interventions. Jem Bendell's paper in essence states what the great ecological movements, the Club of Rome, and other instances also say: that we live in an ecologically depleted world headed for man-made catastrophe. Essentially, it sheds a realistic light on what we have to deal with in the coming

decades, and what we should soberly consider if taking the responsibilities connected with the planner's discipline seriously. And it shows that planning has become an even more impossible task than before, while, at the same time, with modernism, the history of our discipline holds a strong warning against 'reinventing everything'.

Thus, while this paper shows why and how Bendell's text can be a first step in preparing for the nearly impossible, it also suggests that the requirements we impose on ourselves are almost impossible to meet, and the potential impact of the projects or strategies developed by the students is and will be challenging to assess. The long-term effects or benefits of the approach will only be recognisable in many years, when today's students will hopefully be successful agents of change. Until then, we will not be able to scientifically prove that impact, since our intervention in the respective planner's track will only have been a small and selective one.
Bendell's text is only one of many impulses that are given in our courses. In the end, this paper may not be so much about the specific impact of this particular text, but about the general, open, questioning approach that it applies to certain ideas to explore paths towards how planning could be understood in the future, about the necessity to essentially reconceptualize the discipline.

EPILOGUE

'It is easier to imagine an end to the world than an end to capitalism'[6], Mark Fisher titles the first chapter of *Capitalist Realism* (2009, p. 1). We cannot devote ourselves fully to the end of capitalism, although the causes of the climate emergency, and resistance to combating it, are not least rooted in it. Subsequently, we should feel obliged to do so. Instead, we are dealing with the end of the world, since this, accordingly, is still less difficult to imagine and embed in a learning environment.

Acknowledgements

About the review

The authors of this contribution are also the guest-editors of this issue of SPOOL, they recused themselves from handling their own article and were not involved in the peer review.

About the titel of the article

This famous quote is usually attributed to British environmentalist and campaigner Tony Juniper, and has recently become increasingly widespread and used by a wide variety of people (e.g. Paris mayor Anne Hidalgo's contribution to the OECD Regional Outlook 2019) to communicate urgency and demand action in face of the climate emergency. We use it here partly for that matter and in addition to address the attribution of excessive pessimism or even doomism in Jem Bendell's paper.

6 Fisher attributes this citation to both Fredric Jameson and Slavoj Žižek.

References

Ben-Yishai, S. (2020, November 12). *Sivan Ben Yishai, what is postpandemic theater?* https://www.youtube.com/watch?v=8ZARYa34uwo

Brand, U., & Wissen, M. (2017). *Imperiale Lebensweise: Zur Ausbeutung von Mensch und Natur im globalen Kapitalismus*. Oekom Verlag.

Brand, U. (2009). *Die multiple Krise. Dynamik und Zusammenhang der Krisendimensionen, Anforderungen an politische Institutionen und Chancen progressiver Politik*. Heinrich Böll Stiftung, Berlin. https://www.boell.de/sites/default/files/multiple_krisen_u_brand_1.pdf

Awan, N., Schneider, T., & Till, J. (2011). *Spatial agency: Other ways of doing architecture*. Routledge.

Bendell, J. (2020). Deep adaptation: A map for navigating climate tragedy. *IFLAS Occasional Paper*, *2*. (Original work published 2018.)

Bromwich, J. E. (2020, December 26). The Darkest Timeline. *The New York Times*. https://www.nytimes.com/2020/12/26/style/climate-change-deep-adaptation.html

Cuff, D. (1991). *Architecture: The story of practice*. MIT Press.

David, R. (2017, June 11). There's a huge gap between the Paris climate change goals and reality—Vox. Vox. https://www.vox.com/energy-and-environment/2017/10/31/16579844/climate-gap-unep-2017

Fezer, J. (2018). Parteiisches Design. In C. Rodatz & P. Smolarski (Eds.), *Was ist Public Interest Design?* (pp. 215–226). transcript Verlag.

Fisher, M. (2009). *Capitalist realism: Is there no alternative?* Zero Books.

Foer, J. S. (2019). *We are the weather: Saving the planet begins at breakfast*. Hamish Hamilton.

Ghosh, A. (2016). *The great derangement: Climate change and the unthinkable*. The University of Chicago Press.

Harriss, H., Hyde, R., & Marcaccio, R. (Eds.). (2021). *Architects after Architecture: Alternative pathways for Practice*. Routledge.

Laboratory for the Everyday City. (n.d.). *Post-Acceleration Urban Development | A manifesto: April 2019*. Retrieved December 6, 2021, from https://www.arc.ed.tum.de/en/ud/professorship/

Meadows, D. (1999). Leverage Points: Places to Intervene in a System. *The Sustainability Institute*. https://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/

Nicholas, T., Hall, G., & Schmidt, C. (2020, July 14). *The faulty science, doomism, and flawed conclusions of Deep Adaptation*. OpenDemocracy. https://www.opendemocracy.net/en/oureconomy/faulty-science-doomism-and-flawed-conclusions-deep-adaptation/

Nordgren, A. (2021). Pessimism and Optimism in the Debate on Climate Change: A Critical Analysis. *Journal of Agricultural and Environmental Ethics*, *34*(4), 22. https://doi.org/10.1007/s10806-021-09865-0

OECD. (2019). *OECD Regional Outlook 2019: Leveraging Megatrends for Cities and Rural Areas*. Organisation for Economic Co-operation and Development. https://www.oecd-ilibrary.org/urban-rural-and-regional-development/oecd-regional-outlook-2019_9789264312838-en

Thrift, N. (1996). *Spatial formations*. Sage.

Till, J. (2009). Architecture depends. MIT Press

Tsjeng, Z. (2019, February 27). The Climate Change Paper So Depressing It's Sending People to Therapy. *Vice UK*. https://www.vice.com/en/article/vbwpdb/the-climate-change-paper-so-depressing-its-sending-people-to-therapy

Vollmer, L., & Michel, B. (2020). Wohnen in der Klimakrise: Die Wohnungsfrage als ökologische Frage: Aufruf zur Debatte. *sub\urban. zeitschrift für kritische stadtforschung*, *8*(1/2), 163–166. https://doi.org/10.36900/suburban.v8i1/2.552

Watson, R., McCarthy, J., Canzani, P., & Nakicenovic, N. (2019). The Truth Behind the Climate Pledges. FEU-US. https://feu-us.org/wp-content/uploads/2021/07/The-Truth-Behind-the-Climate-Pledges.pdf

Watts, J., & Mann, M. E. (2021, February 27). Climatologist Michael E Mann: "Good people fall victim to doomism. I do too sometimes." *The Observer*. https://www.theguardian.com/environment/2021/feb/27/climatologist-michael-e-mann-doomism-climate-crisis-interview

Ontological Upgrade

Indigenous Futures and Radical Transformation

James Miller [1,2], **Eric Nay** [2]

[1] *Western Washington University (United States of America)*
[2] *OCAD University (Canada)*

Abstract

This paper uses 'deep time', as an alternative ontology to crisis management to argue for the application of a broad decolonial approach in lieu of contemporary green design practices. Methodologically, this paper substantiates it claims by utilising conventional academic 'knowledge' production, as represented in literature, references, and case studies, but also supports the expansion of knowledge through a deeper exploration of place, pattern, and time demonstrated by intermingling deep time principles with Indigenous spatial practices. Fearing that urban life will descend into obsolescence and irrelevance if no such knowledge systems are taken up, this paper proposes an alternative trajectory as a preventive measure, which has all been exacerbated by the ongoing pandemic. By exploring alternative Indigenous design ontologies, specifically in Oceania, alongside deep adaptation and deep time, this paper's authors intend to provide an important basis for research and teaching that reinvigorates connections to Indigenous epistemologies and knowledge systems. This paper proposes that by taking up notions of deep adaptation and Indigenous epistemologies as critiques of Western notions of time, property, etc. architecture, design and planning might re-situate ideas, ranging from stewardship to maintenance, within time and place-based technologies outside of the discourse of crisis.

.

Keywords

Deep adaptation, Deep time, Decolonialism, Indigenous spatial practices

DOI

https://doi.org/10.47982/spool.2022.2.05

Introduction: Positionality and Methods

Descriptions and testimonies of real-life events and experiences can be intertwined pan-geographically to resist reiterating the problems inherent in Western theory and its inclination to re-colonize knowledge through codification and classification. In many ways, the problematics involved in decolonizing knowledge, particularly by settlers, mean that it can only fail. René Dietrich re-situates settler-colonial discourse by stating, '…recent iterations of settler colonial and critical Indigenous studies approaches put an emphasis on how biopolitical and geopolitical forms of settler governance operate on conjunction, as for instance in the ongoing attacks against Indigenous lands, bodies and lives so as to produce colonial space in the United States and Canada (Goeman, 2014) or in the employment of "Indianness" for the transit of U.S. empire (Byrd, 2011) in geopolitical and bio-political terms' (2017, 67).

Taking up a decolonizing position always risks reinforcing how knowledge originates in colonial legacies of power that persist within a deeply entangled sphere of post and neo-colonial oppression. However, this essay is not meant as a manifesto, per se, but rather is a call for deeper thought and action. Intermingling settler colonial geographies is intentional, serving to represent the lived experiences and broadly construed contestations generated in those spaces, as opposed to providing another contribution to a homogeneous field.

While Indigenous knowledge should be made contextual, it also must not be 'curated' by Western ontological systems. Leanne Simpson (2017) reminds us to check our colonial thinking and speak to our grounded normativity in order to disrupt the colonial framing of knowledge and recentre Indigeneity. Simpson demonstrates how we engage with similarities across Indigenous Internationalism by engaging with our own Indigeneity. For Miller, deep time is intrinsically tied to the Kanaka Maoli concept of *mo'okū'auhau*, the genealogy of place. The process of decolonizing knowledge and practices is both deeply fraught and runs the risk of being indiscriminately applied across geographies, cultures, and time. The goal of this paper is not to propose a universalization of Indigeneity, irrespective of specific contexts, but rather to propose a unity of resistant practices using deep time as a bridge. The ultimate risk in all activity categorized as decolonizing is that, by perpetuating the standards of Western knowledge production and academic writing, the context in which people experience, strive, and struggle is either relegated to a type or to a reality in which the experience on the ground is forgotten, or worse, abused.

In summary, this paper proposes that architects, designers, and educators:

- Rethink the universalizing nature of green design paradigms and engage directly with experiences that speak to their contexts.
- Explore alternative critical pedagogies as a path to an Indigenous epistemological shift towards a more meaningful engagement with context.
- Explore -beyond theory- the practical dimension of design as decolonial practice, such as using oral histories in place as a design method.

Deep Adaptation

Ontologies for exploring environmentally conscious design are a method for respecting and taking up Indigenous knowledge systems as a basis for meaningful design solutions and pedagogy. 'Technologies'

associated with ecologically friendly 'green' design have failed by not considering non-Western epistemological frameworks. Jem Bendell's concept of 'deep adaptation' (2020), for example, is a methodology that can be seen to begin to subvert this system that has infiltrated the Western canon.

Discourses that are truly 'deeper', both in meaning and methodology, need to be understood and listened to using a broader perspective that is not limited by classification and geographical distinction, but rather shares ontological familiarity. Contemporary examples of building in deep time from Oceania provide not only case studies to demonstrate and corroborate claims, but also an opening into methods for embracing alternative epistemologies to address climate change beyond the confines of colonial constructs such as qualitative and quantitative, past and future, etc. Current projects, such as the design of adaptive and resilient housing in coastal communities currently being conducted by a team of architects and Rimajol craftspeople with non-profit support, are used to argue for a re-prioritization of Indigenous design knowledge within design practice and knowledge.

Ontology can be said to explain what it means to know reality. While this is not an entirely new concept or approach, specifically addressing of deep time, for example, as an alternative ontology opposed to crisis management, presents another methodology to know our reality. It can be framed as a means to be both more specific and expansive while subverting the problematic aspirations of those who see ecological symptoms as a call to engage in ways, mostly shaped by capital, power, and colonialism, that are counter-productive. Deep time provides knowledge born of millennia in the sustainable and resilient development of ecologically based technologies. In the case of Hawai'i, these are technologies born of crisis in a deep relation with volcanic activity, the ocean, and climatic events. In a Western ontology, 'good crises' always favour the state, restructuring control and hegemony. By framing this reframing as a kind of pedagogy, it is possible to re-see climate change, human inequity, and even building as parts of a cycle of deep time.

> The ecological challenge to critical pedagogy is to expand its socio-cultural analyses and agendas for transformation to include an examination of the interactions between cultures and ecosystems. Just as critical pedagogy draws its moral authority from the imperative to transform systems of human oppression, critical ecological educators posit that an ecological crisis necessitates the transformation of education and a corresponding alignment of cultural patterns with the sustaining capacities of natural systems (Bowers, 1993; O'Sullivan, 1999; Orr, 1992). Gruenewald 5-6

Jem Bendell's concept of 'deep adaptation' is just one example of what may be needed to subvert crisis thinking, but different ways of thinking using ontological systems and discourses that are truly 'deeper', both in meaning and methodology, must be identified to frame the 'problems' of the 21st century city beyond the fetishization of technology and blind faith in capital to fix our ailing planet and bodies. Bendell's notion of deep adaptation originates in a paper he wrote in 2018 in which he explores 'the personal and collective changes that help (and have helped) us to prepare for – and live with – societal disruption and collapse. Mainstream work on adaptation to collapse doesn't assume that our current economic, social, and political systems can be resilient in the face of rapid changes.' (Bendell 2018)

Deep Time

'Deep time' is a method for understanding that binds us through time and space. It is the 'deep culture' that helps locate us in the present – as an anthropologist might consider the thread that provides continuity across the long evolution of a culture. 'Deep time' helps to conceptualize and investigate the significance of the culture-environment relationship and the systems of knowledge developed and

maintained by our ancestors to support us. When located in a specific place, 'deep time' represents intensities – the assemblage of time, space, and the cosmos; it is multidimensional. Applied to the built environment, the threads extending across space and time influence our Indigenous design knowledge, providing the knowledge that produces relevant, supportive, and relational spaces. These technological knowledge systems of environmental design form over millennia across the long evolution of culture-environment relations and are relational as opposed to extractive.

The Western mind has proven itself adept at appropriation and domination of others, of environments, and of ideas as its way of being, while utilizing the asymmetrical power of race, class, and gender to control others in perpetuity. One side effect of this is the degradation of Indigenous knowledge of all types in lieu of a universal modern paradigm of domination and control. Similarly, we see this in the historic refusal to legitimize vernacular architecture as a central discourse within architectural and planning education. Rather, the Western academy promotes privilege and entitlement. Indigenous knowledge systems have a broad perspective on ecosystems and sustainable ways of using natural resources. However, colonial education systems replaced the practical everyday life aspects of Indigenous knowledge and ways of learning with Western notions of theoretical knowledge and academic ways of learning.

> Indigenous knowledge is considered as the social capital of the poor. It is their main asset to invest in the struggle for survival, to produce food, to provide for shelter and to achieve control of their own lives. Most of the Indigenous knowledge disappears due to the intrusion of foreign technologies and development concepts that promise short-term gains or solutions to problems without being capable of sustaining them. The tragedy of the disappearance of this knowledge system is most obvious to those who have developed it and make a living through it. But the implication for others can be detrimental as well, when skills, technologies, artifacts, problem solving strategies and expertise are lost. (Senanayake, 2006, p. 87)

This issue is at the core of what needs to be rethought. To get there, the relationship between technology, land, and Indigeneity simply cannot be explained within a Western ontological system. Rather, the explanation requires engaging with other ontological frameworks in order to understand the integral notion of Indigenous relationality as a first step towards 'deep adaptation'. Design thinking and innovation continue to brand and rebrand a perpetual state of forward moving action with neither cause nor effect. We suggest an exploration of alternative paradigms that run congruent with the western paradigm we operate within to provide visions for a future that is fundamentally transformed.

Even as Western scholars like Bellamy-Foster and others propose the possibilities of a post-capitalist society and the great ecological revolution, we look to Glen Coulthard, Tuti Baker, Leanne Simpson, and other Indigenous scholars to both see Indigenous futures and learn from these radical processes in transitioning to a radically new world of abundance. Indigenous communities learned to live with environmental crisis, survived genocide, and have thrived in the resurgence of their ways of knowing. Listening and learning from Indigenous communities is an essential starting point for deep adaptation.

Shaped by Crises

The current image of our post-Covid future might be seen as one shaped by an ongoing regime of never-ending crises, particularly the multi-tiered repercussions of climate change on all aspects of human existence. The Covid-19 pandemic, which is still ongoing, has been, and remains, an instructive lesson in how short-term thought dominates all of our systems. It has also generated a new body of scholarship relating design to crisis management as an economic problem, as in what to do with all of those empty office

buildings as both assets and health risks (Charleton, Chaykla, Garcia, Keats, Liquori, et. al.). Conventions, techniques, and social practices associated with architecture, design, and urban life will descend into obsolescence and irrelevance, even as new corrective technologies are conceived and implemented. However, technologies associated with ecologically friendly 'green' design, as it is understood today, will not solve problems in the long run.

Solutions will not be easy and will require that we fundamentally change our systems – social, political, and economic, in order to move toward more equitable, just, and sustainable futures. Our responsibilities and roles as architects and urban planners will also change fundamentally as we become frontline workers skilled in crisis management responsible for mitigating the vulnerability of our urban environments and infrastructural systems while ensuring our built environments cease to embed oppression within their structures. With resilience from below, perhaps systems will be more stable rather than constantly responding to shock, that is shock that threatens the hegemonic order.

Deeper Time and Radical Indigeneity

A more radical interpretation of deep adaptation appears in the foreword of Glen Coulthard's *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition.* Taiaiake Alfred speaks of a new generation of, 'Native thinkers and leaders (that) are coming on the scene intent on changing things, entirely' (x). These kinds of radical ontologies, pedagogies, and epistemologies are just what may be needed. Coulthard's seminal text, *Red Skin, White Masks: Rejecting the Colonial Politics of Recognition,* provides a lens for viewing problematics of Indigenous efforts at self-determination and the objectives of Indigenous peoples in Canada as has been cast in the language of 'recognition' by the state as a site for just such ontological reframing.

Coulthard's main argument is that colonial power relations in Canada have shifted from a more or less unconcealed structure of domination to a form of neo-colonial governance that works through the medium of state recognition and accommodation. This means that Canadian settler-colonialism remains structurally intact and recognition, as framed *by* the state *for* the state, may be more insidious than pre-1969 Indigenous relations. In his mind, Canadian settler colonialism remains oriented toward achieving the same power effect it sought in the past with the goal of systemically dispossessing Indigenous peoples of their lands and self-determining authority; it is an ongoing objective and a form of perpetual foreclosure.

The politics of recognition have tended to focus on the empirically problematic and normatively suspect character of recognition claims based on 'essentialist' articulations of collective identity, thus foreclosing Indigenous futurity within a post-colonial shroud. Coulthard's claims, which he frames as 'seeing red' to situate recognition with resentment, amongst settlers and Fanonian cultural practices of critical individual and collective *self-recognition* that colonized populations often engage in to empower themselves. 'Coulthard sets out to map how "the politics of recognition in its contemporary liberal form promises to reproduce the very configurations of colonialist, racist, patriarchal state power that Indigenous peoples' demands for recognition have historically sought to transcend" (3).' (Kam'ayaam, 2014, p. 188)

What this means is that relationships between the apparatus of the state used to recognise and utilise Indigenous technologies remain ontologically frozen within the mindsets of settler colonialism, capitalism, and power. We see this in the recent book, *Lo-Tek: Design by Radical Indigenism* (Watson and Davis, 2020), which demonstrates the perpetuation of intellectual property theft by the white saviour placing individual 'desire' above the rights of those whose knowledge is published without symmetrical benefit. What is needed is an ontological reframing, or revolution, in pedagogy and in practice.

Reframing Techno-ontologies

Ontological upgrades require reframing of perspectives, methodologies, and tools used to position knowledge production as well as of actions that are irreversibly tied to technology, techno-determinism, and fantasies of a green post-capitalism as way out of crisis. We frame everything as a crisis in late capitalist Western ontologies to produce efficiencies, while new technologies and incessant innovation are framed as the cures for all problems, while maintaining the forward expansive thrust of capital.

For example, the drive to use 3D printing in architecture to replace human labour with a technological solution, in which stick framing is exchanged for magic extruded 'goo' that can be made from upcycled materials. This is a consciously disruptive epistemological shift that provides a one-size-fits all solution to the problem of house-making and the question of appropriate form. This shift frames non-human technologies as the future, while relegating stick framing to a past that is both 'primitive' *and* ecologically unsound – both dangerous propositions. The complex interplay of technology, equity, and building is also one that needs to be situated in deep time as a methodology.

Along the way, anomalous apparitions, such as the human-tech fuelled speed and practicality of stick frame construction in the midwestern United States as produced by Amish families continue to defy high-tech solutions that do not adapt to place. The Amish provide a local technology that relies on convention as a form of adaptation. Additionally, Amish 'barn raising' is an important element of the social fabric that enhances community cohesion, producing holistic approaches to wellbeing not centred on the capitalistic mode of production.

In reality, technologies like 3D printing are complicated and require specialized maintenance and parts, consistent electrical power, and specialized training to operate, repair, and maintain. These can only be provided by outsiders, thus reinforcing the technocracy of the *risk society*. The material 'affect' of these new housing typologies also becomes a method to assimilate 'foreign' dwelling practices, from external cookhouses to food sharing, as one sees in Oceania, the Arctic, and across the planet.

Historical precedents that demonstrate how to actualize these theories in practice include the work of Hasan Fathy, Charles Correa, Paolo Soleri and others who sought to balance the labour and form of construction as a reciprocal relationship between people, place, and environment. These lessons have been forgotten as time has passed, while the rhetoric of sustainability has been taken up as a form of branding and neo-liberal fantasy. Following the time-honoured logic of Christopher Alexander and others who saw architectural innovation as an adaptive process that balanced innovation with place-based continuation, in lieu of contemporary versions of pre-packaged ecological design.

> Although the New Gourna project was a failed attempt in implementing theory into practice, the lessons learned are valuable. Fathy failed to elucidate in his process the implications of capitalism on cultural evolution and the social stratification imbedded within the urban environment. This failure validates the need for more thorough systems thinking within the practice of social or humanitarian architecture. (Miller, 2017, p. 3)

Deep Time in the Oceanic Context

Exploring Indigenous paradigms in Oceania shows how Indigenous design knowledge can provide a framework for the application of deep adaptation in very practical terms. A shared Oceanic worldview of deep relationality, deep time, and Indigenous knowledge guides environmental designers at every step of the design, building, and use process.

In *Aelon Kein Ad* (The Republic of the Marshall Islands), deep time manifests within the everyday production of space. As climate change drastically impacts the shorelines of coastal communities, deep adaptation manifests in two approaches. The first is in-situ adaptation, drawing from Indigenous knowledge systems; the second is migration through expansive kinship-based networks, which also draws on Indigenous knowledge systems. In both responses, the following super-patterns play key roles in the production of supportive environments: land as identity, land as abundance, togetherness, one fire, one family, housing as a model for lineal knowledge, and collective action. Land as identity stems from the traditional land tenure system based on matrilineal inheritance; through migration, the family name always connects kinship groups to the land. Togetherness presents a pattern of social capital that is supported by collective action; families provide resources for each other, looking out for the whole rather than the individual. Living near one another develops a system of wellbeing that promotes individual success. Lastly, multigenerational housing forms a structure that supports knowledge transfer from elders to children. These patterns represent fundamental, broad patterns that support community development through climate change adaptation and migration.

FIGURE 1 Photograph of a modified monkijdrik on Namdrik Atoll. This dwelling demonstrates similar material use and structural design to the monkijdrik, but has closed exterior walls as opposed to four posts. Photo by author.

Within the production of the built environment, the design and construction processes are influenced by these super patterns. Traditionally, to build a house, people understood the cycle of environmental production that provided the necessary materials for post-and-beam construction, the lashings, and the thatching. The collection and production of material became integrated within daily life; one person making cordage under the shade of a canopy while another collects dead coral along the beach for foundations and ground covering (see figure 1 for reference). On an atoll, resources are sparse, and thus craftspeople learned to splice smaller wood elements together – techniques they learned from the construction of outrigger canoes. To build a house meant being in tune with the ecological system they held a deep relationship to. Design was incremental: the roof shape became steeper as a response to rain frequency and awareness of stack-ventilation; the floor was raised to mitigate the impact of inundation and benefit from the coolness that proximity to the water allowed. These are processes that continue in Aelon Kein Ad.

Unsettling Settler Spaces

An exemplary project that demonstrates our argument is one being conducted by a team of architects, Rimajol craftspeople, and non-profit support that is testing methods to revive Indigenous environmental design knowledge to produce climate change adaptive and resilient housing for Rimajol coastal communities. Utilising the super-patterns, the design approaches housing from the collective, kin-based system of habitation and deconstructs the imported concrete block housing from the United States (refer to figure 2). In this way, the spatial design prioritises communal living and relationships rather than the individuality produced by coloniality. Building off a national forest management strategy integrated with the Reimaanlok national adaptation strategy, the housing project utilises coconut lumber. The design details draw from the technology developed to build canoes from sparse resources, allowing for construction to be undertaken with minimal tools and materials. Deep time provides a mode for communities to reclaim their knowledges, even when faced with the influence of coloniality.

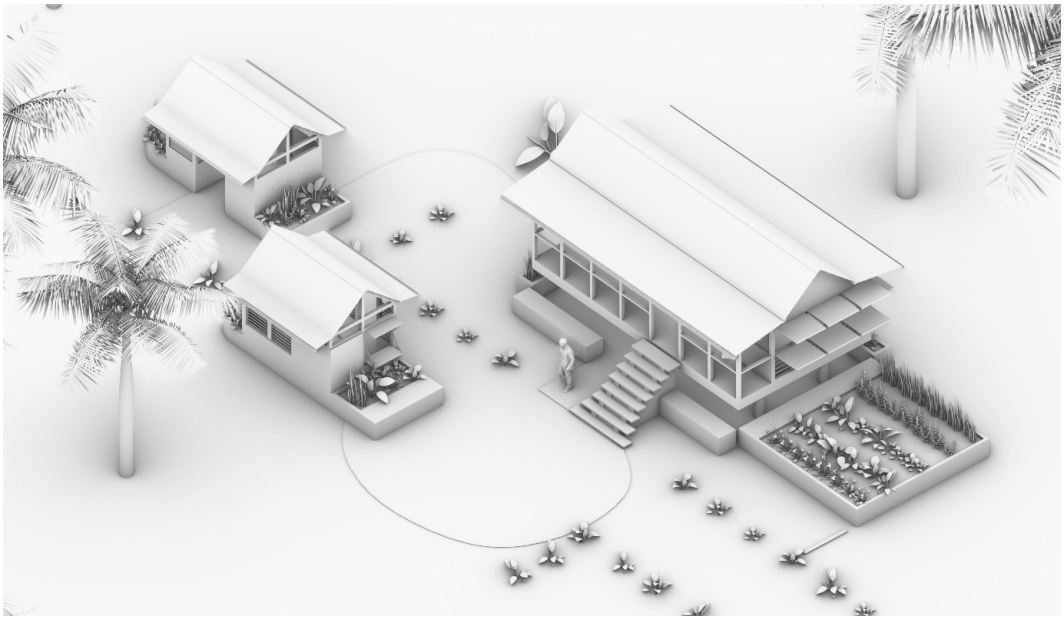

FIGURE 2 Illustration of the Rise Up Marshall Islands, a prototype housing project driven by the concept of housing as a cultural practice for place-based sustainability. Design team: 'Ike Honua + Metaamo Studio, Living Islands, and Sherwood Tibon. Illustration by Jade Danek.

To demonstrate yet another manifestation of alternative design ontology, Indigenous design knowledge maintains wholeness, spaces that are nurturing and beautiful, informed through grounded normativity.[1] Kapalama and Palama, Honolulu, Hawaii represent a colonized built environment to the passer-by. Beyond their façade, however, we see the processes of deep-time uncovering and reclaiming this space in the storytelling of residents and families that have grown from this land across generations; families that remember lower Kalihi as a space for Hawai'ian royalty, fishing, and harvesting. Approaching Indigenous urbanism as a process of delinking and unearthing Indigenous spaces, we come across a new form of urban design. As the Mo'okū'auhau (genealogy of a site) of Kalihi Ahupua'a is readdressed, an unravelling of histories brings to life a Kanaka Maoli space freed of white privilege and white supremacy. This space once again prioritizes a land-based ethic of relationality through grounded normativity. Mo'okū'auhau represents the first stage in a design process to reclaim urban space as Indigenous space. Spaces created as whole nurture the Indigenous habitus, and this process persists despite being located in settler-colonial states, diasporas, or the militarization of Moana. This perspective on design within architecture, urban design, and planning generates spaces that unsettle settler spaces.

Furthermore, the recent mainstream book, *Our Voices: Indigeneity and Architecture (*Kiddle et. al. 2018) provides further evidence of a desire for alternatives to typical green design discourse, which depends upon design ontologies framed by Indigenous worldviews as a lesson. Indigenous architects, such as Douglas Cardinal, John Paul Jones, and Chris Cornelius approach architectural design from different ontological lenses. While the work operates within capitalism, the prioritization of new design ontologies is prescient. The work centres the knowledge of elders within communities and establishes their authority as stakeholders in the project, as opposed to allowing the interests of the primary client, often an institution, to dominate. These architects and their projects represent new or modified design ontologies; however, does their work go far enough to delink from coloniality?

The text demonstrates a reversal of the trend of focusing on the technological contributions of Indigenous design knowledge as a limit. Rather, it is the broader patterns of Indigenous knowledge in the production of the built environment that are significant in how the work is discussed and theorized ontologically. The example of Kanaka Maoli urbanism demonstrates that the ontological shift presented by Indigenous design is not just one of technological adaptation, but rather one that applies deep adaptation as a decolonial response in the reclaiming of urban spaces for the Indigenous city. Sean Connelly frames Ahupua'a urbanism through his work on *Hawaii Non-Linear*, the *Ala Wai Centennial*, and *After Oceania* through a similar ontology that prioritizes the life of the land, or Aloha 'Āina. We cannot stop at the spatial design of the building, but must redesign the architectural process holistically – from the cognitive space to the urban space. In this process, Indigenous design presents itself as an effective ontological model for deep adaptation as it does what it has always done.

Conclusion

The dialectical relationship between environment and culture, as expressed and witnessed in the design of the built environment, is not balanced and supports the subjugation of others through technology's mythical ethos of universal equity. To provide equity and efficacy within the dialectic of environment and decolonization, non-Western paradigms of metaphysics must be prioritized, taught, and valued. Indigenous knowledge must be situated as a framework for seeing the world though a lens of crisis management

1 Grounded normativity refers to the ethical frameworks provided by land-based practices and associated forms of Indigenous knowledge (Coulthard and Simpson 2016, p. 254).

that may even subvert the notion of what crises are actually occurring. It should be valued as something of extraordinary ontological significance to re-addressing the problems of the city: an ontological upgrade, if you will. The goal of this project is to provide an outline for educating the next generation of urban designers, architects, and urban planners to be prepared for the radical transformations necessary to sustain a healthy and equitable future. We see this project taking place at the margins through dispersed Indigenous faculty, but argue it needs to be centred within the pedagogical revolution of environmental design and knowledge production.

This broader definition of knowledge is also known as local knowledge, folk knowledge, people's knowledge, traditional wisdom, or traditional science. This knowledge is generated and transmitted by communities, over time, in an effort to cope with their own agro-ecological and socio-economic environments (Fernandez, 1994). It is generated through a systematic process of observing local conditions, experimenting with solutions, and readapting previously identified solutions to modified environmental, socio-economic, and technological situations (Brouwers, 1993). Indigenous knowledge is passed from generation to generation, usually by word of mouth and cultural rituals, and has been the basis for agriculture, food preparation and conservation, health care, education, and the wide range of other activities that sustain a society and its environment in many parts of the world for many centuries. Indigenous knowledge is the unique knowledge confined to a particular culture or society. (Senanayak 2006)

A year ago, we might have argued that settlers taking up Indigenous epistemologies in architectural thought by including Indigenous voices may create a path forward. However, it has become increasingly evident that the 'two row wampum' may be a more realistic framework to protect Indigenous intellectual and cultural property from appropriation, commodification, and further colonization. Architecture fetishizes 'orientalism', remaking the exotic as a mode to control the colonized other. In the proliferation of Indigenous architecture in the mainstream of Western architecture practices and academia, it is more likely that the appropriation of design knowledge is in the service of white supremacy rather than in service of Indigenous peoples. Within frames of social justice and socially focused architectural design/practice, the notion of capacity building is framed within a capitalist understanding of commodification of labour and of resources; Indigenous practices are by no means taken seriously. This is essentially a repackaging of social entrepreneurship to escape Roy's (2009) critique of this neoliberal driven ideology of development. It is about who is control of power. To honestly forward Indigenous architecture, a transformation of power must take place. Otherwise, leave Indigenous practices to Indigenous peoples. 'The Haudenosaunee see the Two Row Wampum as a living treaty; a way that they have established for their people to live together in peace; that each nation will respect the ways of the other as they meet to discuss solutions to the issues that come before them.' (Onondaganation.com)

Bibliography

Bendell, J. (2018) Deep adaptation forum. https://jembendell.com/2019/05/15/deep-adaptation-versions/

Bendell, J. (2020, July 27) *Deep adaptation: a map for navigating climate tragedy*. IFLAS Occasional Paper 2. https://lifeworth.com/deepadaptation.pdf

Brouwers, J.H.A.M. (1993) Rural people's response to soil fertility decline: The Adja case (Benin), Wageningen Agricultural University Papers 93-4.

Byrd, J. A. (2011). *Transit of Empire: Indigenous Critiques of Colonialism*. University of Minnesota Press.

Charleton, E. (2020, July 6). How air conditioners contribute to inequality and energy poverty. *World Economic Forum*. https://www.weforum.org/agenda/2020/07/air-conditioners-inequality-energy-poverty-climate-change/

Chaykla, K. (2020, June 17). How the coronavirus will reshape architecture. *The New Yorker*. https://www.newyorker.com/culture/dept-of-design/how-the-coronavirus-will-reshape-architecture

Clayton, S. (2020). Climate anxiety: Psychological responses to climate change. *Journal of Anxiety Disorders*, *74*, 102263. https://doi.org/10.1016/j.janxdis.2020.102263

Connelly, Sean. "Urbanism as Island Living". The Value of Hawai'i 2, edited by Aiko Yamashiro and Noelani Goodyear-Kaopua, Honolulu: University of Hawaii Press, 2014, pp. 88-99.

Connelly, Sean. "Hawaii Futures," https://hawaii-futures.com.

Coulthard, G. S. (2017). *Red skin, white masks: rejecting the colonial politics of recognition*. Langara College.

Coulthard, G., & Simpson, L. B. (2016). Grounded normativity / Place-based solidarity. *American Quarterly*, *68*(2), 249–255. https://doi.org/10.1353/aq.2016.0038

Dietrich, R. (2016). The biopolitical logics of settler colonialism and disruptive relationality. *Cultural Studies ↔Critical Methodologies*, *17*(1), 67–77. https://doi.org/10.1177/1532708616638696

Fawaz, M. (2009). Neoliberal urbanity and the right to the city: a view from Beirut's periphery. *Development and Change*, *40*(5), 827–852. https://doi.org/10.1111/j.1467-7660.2009.01585.x

Fernandez, M.E. (1994) Gender and Indigenous knowledge. *Indigenous Knowledge & Development Monitor* 2: 6-7.

Garcia, D. (2020, June 8). Distant space: the architecture of quarantine. *The Achitectural Review*. https://www.architectural-review.com/buildings/health/distant-space-the-architecture-of-quarantine/10047251.article

Goeman, Mishuana. (2014). Disrupting a settler-colonial grammar of place: the visual memory of Hulleah Tsinhnahjinnie." In *Theorizing Native Studies*, edited by Audra Simpson and Andrea Smith, 235–65. Durham, NC: Duke University Press.
Grose, A. (2020). *A guide to eco-anxiety: how to protect the planet and your mental health*. Watkins.

Gruenewald, D. A. (2008). "The best of both worlds: A critical pedagogy of place." *Environmental Education Research*, 14(3), 308-324. doi:10.1080/13504620802193572

Hayes, K., Blashki, G., Wiseman, J., Burke, S., & Reifels, L. (2018). Climate change and mental health: risks, impacts and priority actions. *International Journal of Mental Health Systems*, *12*(1): 1-12. https://doi.org/10.1186/s13033-018-0210-6

Kam'ayaam/Chachim'multhnii (Cliff Atleo, Jr.). (2014). Red skin, white masks: A review. *Decolonization: Indigeneity, Education & Society* 3(2): 187-194.

Kiddle, R., Stewart, L. P., & O'Brien, K. (2018). *Our voices: Indigeneity and architecture*. ORO Editions.

Keats, J. (2020, June 15). A new online exhibit shows how architects and designers are confronting COVID-19 – with outmoded ideas and products nobody needs." *Forbes*. https://www.forbes.com/sites/jonathonkeats/2020/06/15/covid-design/#761450843457

Miller, James. (2017) "Redefining humanitarian architecture with complexity in mind: Moving toward a new practice, *105th ACSA Annual Meeting Proceedings: Brooklyn Says, Move to Detroit*.

Nairn, K. (2019). Learning from Young People Engaged in Climate Activism: The Potential of Collectivizing Despair and Hope. *YOUNG*, *27*(5), 435–450. https://doi.org/10.1177/1103308818817603

Onondaganatin.com. (2021) Two Row Wampum – Gä•sweñta' https://www.onondaganation.org/culture/wampum/two-row-wampum-belt-guswenta/

Ray, S. J. (2020). *A field guide to climate anxiety how to keep your cool on a warming planet*. University of California Press.

Roy, A. (2011). Slumdog Cities: Rethinking Subaltern Urbanism. International Journal of Urban and Regional Research, 35(2), 223–238.

Salamon, M. K., & Gage, M. (2020). *Facing the climate emergency: how to transform yourself with climate truth*. New Society Publishers.

Senanayake, S. G. (2006). Indigenous knowledge as a key to sustainable development. *Journal of Agricultural Sciences*, 2(1), 87.

Simpson, L. (2017). As we have always done: Indigenous freedom through radical resistance. University of Minnesota Press.

Thomas, A.; Cretney, R.; Hayward, B. (2019) "Student strike 4 climate: Justice, emergency & citizenship." N. Z. *Geogr*. 75, 1–5.

Tuck, E., & Yang, K. W. (2012). Decolonization Is Not a Metaphor. Decolonization: Indigeneity, Education & Society, 1(1), 1–40.

Watson, J., & Davis, W. (2020). *Lo-Tek: design by radical Indigenism*. Taschen.

The Future Belongs to Us

Crisis – Time to Regroup, Self-Management – Means to Reorganize

Uroš Pajović

Abstract

As a principle of industrial and spatial organisation, self-management enabled Yugoslavia to shape its own socialism after the breakup with the Soviet Union and the rest of the Eastern Bloc – in 1986. It even represented the paradigmatic element of a proposal for an urban restructuring of New Belgrade submitted by Marxist philosopher Henri Lefebvre and architects Renaudie and Gilbaud. The Yugoslav experience of self-management is not the only one. The oldest precedent probably is the Paris Commune. Bottom-up self-management has unravelled the planet over, in factories of Eastern Europe, neighbourhoods in South American cities, and rural communities in North Africa and the Middle East, to mention some.

This essay will look at self-management as a critical socio-political paradigm inherently connected to spatial determinants and both a means and a goal of reorganising society in the contemporary moment and for the ever nearer future.

The narrative is positioned in a broader temporal context of mass misappropriation of space by mechanisms of power: be it state, corporate, state-corporate, or architectural; the context, that is, of "flat hierarchies" as the new office ping pong tables and bean bags and corporate campuses as the new public spaces, and in the narrower temporal context of a global pandemic forcing a redefinition of public and private, of work and labour relations.

Keywords

Deep adaptation, Yugoslavia, New Belgrade, Self-management, Mass misappropriation of space

DOI

https://doi.org/10.47982/spool.2022.2.06

Introduction

Should you take a walk through New Belgrade on a chilly day in late autumn or early winter, your path through the area, tucked between the rivers Danube and Sava, will inevitably cross many slender shadows – of stanchions holding up backboards, hoops, nets – spreading long in the haze of the soft, blurry light of the low winter sun (the kind you would find in your very own distant memories).
Throughout the architectural conundrum of concrete buildings of the 20th-century socialist heritage and the glitzy corporate developments of more recent years, much like some unassuming monuments of times and spaces past, the basketball courts of New Belgrade stand throughout the neighbourhoods – still bustling with life, cheerful, if a little tired, of hopeful survivors. If you, however, take this walk in the adamant heat of a different time of the year, it will be the sound of basketballs hitting the hot asphalt and teammates calling to each other that will follow you along your way.
The summer of 1961 was one such summer: on August 12, 1961, newspapers were filled with reports of scorching heat, dramatic heatstroke episodes, and shoes sinking into melting asphalt on the streets of Belgrade, Yugoslavia being 'the warmest country in Europe', and its capital 'warmer even than Cairo.' (Došen et al., 2012) In the cooler German capital, Berlin, a different kind of shock startled its citizens that same weekend: the city was being split into two, further deepening the Cold War divisions of the world, effectively materializing the Iron Curtain in the shape of a wall. A mere two weeks later, back in Belgrade, representatives of 28 countries—predominantly from the Third World—gathered to formalize the founding of the Non-Aligned Movement (NAM), imagined as an alternative to both the capitalist and communist blocs, that is, the USA and the USSR.

This balancing between the two predominant political forces had in fact begun with the Yugoslav liberation struggles during World War II, under Yugoslav partisans and their *de facto* leader Tito, who would go on to lead Socialist Yugoslavia after the war. Tito was, also, one of the key figures in the creation and founding of the Non-Aligned Movement, having closely followed the developments during the 1955 Bandung Conference in Indonesia, which had the goal of promoting Asian-African cooperation, especially in opposing colonialism and neo-colonialism. The following year, Tito—seeking to create and partake in a new political space at a global scale and embodying what can correctly be described as Yugoslav 'affective affinities with guerrilla liberation movements from a theoretical stance emphasizing the inter-connectedness between political independence and anti-imperialism' (Stubbs, 2020)—invited the President of Egypt, Gamal Abdel Nasser and the Prime Minister of India, Jawaharlal Nehru, to his residence in the Brijuni Islands, to revisit the postulates of Bandung. This meeting would pave the way for the 1961 formative Conference of the Non-Aligned States. The Non-Aligned Movement, thus, wasn't born in Belgrade but it did take some of its first steps in the capital of Yugoslavia, symbolically: not only politically, but also geographically placed in-between the blocs and 'within' the Iron Curtain.

One of the publicly accessible moments of the NAM Conference was the opening of the Friendship Park, in which the leaders present each planted a tree. The park surrounds a sprawling H-shaped structure in the middle of New Belgrade, the former Federal Executive Council (Savezno izvršno veće, SIV) of Yugoslavia, also ceremoniously opened on the occasion of the Founding Conference of the NAM. The building was, mere weeks prior to Yugoslavia's expulsion from the Communist bloc, the first to begin construction on New Belgrade, imagined and designed as the new capital and administrative centre of Socialist Yugoslavia, the building itself serving as its centrepiece. Until that year, and under the influence of close Yugoslav-Soviet relations between 1945 and 1948, the social system in Yugoslavia was centralist, with state institutions controlling and administrating all aspects of social life, including economy, education, and culture. In 1948, after the conflict with Stalin, the Communist Party began to officially renounce the centralist, state, form of socialism. Two years later, in 1950, the country established workers' self-management (*samoupravljanje*) as the official principle of industrial organisation.

Parallel Construction: Self-Management and New Belgrade

Samoupravljanje as the main principle of industrial and social organisation was designed as a system of relations that were based on social, rather than state-owned means of production. In other words, *samoupravljanje* was a mode of production in which the means of production and the management thereof were returned to the subjects of labour, the workers themselves. Furthermore, besides control over the means of production, another crucial aspect of self-management as an official paradigm (though only attained later, and not to a full extent) was control over decision-making. In more proverbial terms, this meant *presence over representation*; workers' collectives were to become sovereign bodies within factories (enterprises), able to vote and debate crucial issues regarding the operation of the enterprise employing them and their own conditions of labour. Here, first among the contradictions of self-management in Yugoslavia, *samoupravljanje* presupposes the *withering away of the state* (in the Marxist sense), albeit the very state that proclaims it

This switch from a centralist to a self-managed model of socialism launched a series of events in Yugoslavia that significantly altered and determined the country's political and everyday life. In cinemas, Soviet propaganda films were replaced by American blockbusters and Soviet imagery became the subject of ridicule in Yugoslav media. Supporters of Stalin were sent to prison camps, and ideologues and political leaders of the country began to dismiss state socialism as 'Stalinist' and reductive for the progress and emancipation of the working class, going so far as to invite artists and architects to distance themselves from socialist realism in their work. *This* was the actual birth of 'the Yugoslav experiment', coinciding with the birth of New Belgrade: the reorientation of cultural and foreign politics towards the West and of internal policy towards a de-centralized system of self-managed socialism immediately affected the plans for the new capital.

In order to correctly track, via architectural and urbanism practice, the switch from a Soviet model to a self-managed socialism, one must observe the first urban plan to consider New Belgrade after World War II: the 1946 'Sketch of Regulation of Belgrade on Left Bank of Sava' by architect Nikola Dobrović. Based on the idea of a new city representing the administrative centre of political power of the newly founded federation, as well as the centre of the city of Belgrade, the plan considered the area as a place freed from history, a clean space without significant pre-formed urban structures, a *tabula rasa*. In the words of the architect: 'The plan for New Belgrade is created on a blank paper without layouts [of the existing condition] and to the 1:5000 scale.' (Blagojević, 2007, 58) In her analysis of Dobrović's 1946 plan, architect, historian, and theorist Ljiljana Blagojević emphasises its vision of New Belgrade as the centre of power for the new country, while at the same time pointing out the architect's Corbusier-inspired, self-conceived role as the demiurge of both Belgrade and New Belgrade. Two aspects of Blagojević's critique are particularly pertinent here. The first of them regards Nikola Dobrović's (mis)use of a quote from Karl Marx as the epigraph of the plan: 'Finally, no entity can be a value without being an object of use. If it is useless, then the labour contained in it is also useless, does not count as labour and, hence, does not form a value.' According to Blagojević, even though it can be considered an ideologically-driven sign of the times, it is also a thesis 'compatible with the text of the modern movement in architecture [and] shows that, in Dobrović's discourse of a modernist architect/urban planner, this quote reads as a depoliticized modernist principle of value and beauty in usefulness.' Blagojević goes on to examine the programming of the plan, particularly its lack of consideration for the 'basic questions of the new city, its population, residential zones, and public city space' due to its sole focus on administrative buildings, such as ministries, the seat of government, and the Central Committee of the Communist Party,[1] offering 'an ideal plan for an administrative city which was, in essence, completely closed to the citizens.' (Blagojević, 2007, pp. 59-72)

1 Between the end of World War II and the 1948 break, Yugoslavia was one of the USSR's closest allies and closely mimicked its centralist system. The plans for New Belgrade embodied this in conceptualizing the city as the centre of political power in the country.

The political leaders of the country, still, wanted to explore their idea behind the founding of the new capital beyond the visions of a single architect. Despite many competitions created to achieve this within the all-Yugoslav political and architectural-urbanistic discourse of the period, however, none of the proposals were chosen, and no decision was made regarding a planning direction or architectural style. (Blagojević, 2007, 73)

Exactly this ambivalence of the Competition Council portrayed the *in-between-ness* in which architectural and cultural practice in Yugoslavia found itself at the time, one that would soon prove to be paradigmatic for the country as a whole. Architecture historian Vladimir Kulić writes:

The problem was not that the doctrine was Soviet; the most prominent architects who enjoyed the leading positions in the new society thanks to their participation in the liberation war were by and large left-leaning and loyal to the new regime. The problem was that most of them had converted to the various inflections of international modernism well before the war and could not be easily convinced to go back to historical ornament and the traditional modes of composition, as Socialist Realism required. (Kulić, 2014, 132)

The competitions' quest for a Yugoslav socialist 'new monumentality' was based in the resolving of a double negation: the rejection of both the International Style – i.e., the formalism of the Western European model of modernism – and the formalist eclecticism of the Soviet model. (Blagojević, 2007, 85) Even though this 'new monumentality' also presupposed the creation of a new and better communal life and the formation of new urban centres, the problematic of the new city was, in the very beginning of the planning of New Belgrade, entirely turned towards the conception of individual objects for government and party administration. Soon, the practice's tightrope balancing between the paradigms of modernism claimed by the West and socialist realism omnipresent in the East would come to pertain to the entirety of political, social, and cultural relations of and within Yugoslavia, as the country set itself further in a neither-nor positioning in the landscapes of the Cold War.

The reorientation of cultural and foreign politics towards the West and of internal policy towards a de-centralized system of self-managed socialism immediately affected the plans for New Belgrade. The new 1948 plan, again by Dobrović, introduced mass housing to the urban landscape, a clear differentiation of the new concept of a modern socialist city from the previous plans for the federal capital. (Blagojević, 2009, 126) As the expulsion from the Cominform affected the economic situation in Yugoslavia, the construction, set into motion with the work on the SIV (at the time still called Presidency of the Government) and a 'student town' was discontinued until the mid-fifties. Around that time, the concept for New Belgrade was reconfigured along with the ongoing reorganisation of political structures and continual elaborations of the self-managed system. In October of the same year, a new plan for New Belgrade was created that noticeably shifted the focus onto housing: the ministry buildings, for example, were erased from this and all subsequent plans. (Blagojević, 2007, pp. 126-133) A little later, the 1950 General Urban Plan of Belgrade, which included New Belgrade, was adapted to the administrative division of local government and the city into *rayons* and *residential areas* (or: *microrayons*), with 'rayon centres' such as administrative, cultural, trade, sport and physical culture centres, and the rayon park. With this plan, residential areas already began to represent the basic and smallest organisational units of the city, which would go on to pave the way for future application of *samoupravljanje* principles in spheres of life beyond the governmental and industrial.

The shift in focus to housing in the planning of New Belgrade, as well as the housing policies this shift embedded, were very much in accordance with the idea of social ownership and were anchored in the concept of an apartment being a common good – theoretically, in Yugoslavia, the right to an apartment was a universal right, 'a basic legal institution which enables a working person one of the important living conditions', as the First General Yugoslav Council on Apartment Construction and Housing concluded. (Blagojević, 2007, p. 134) The ideal of social justice and equal distribution that it entailed was, however, economically and technically out of reach at the time. This was another aspect contributing to the

prioritization of housing construction from 1949 with the 'student town' and from the mid-fifties, when the construction of New Belgrade was resumed—all the while closely following the development paradigms of self-managed socialism. Blagojević writes:

> In the first stage of housing construction in New Belgrade, the basic organizational unit of residential zones was a 'residential microrayon;' beginning with the late fifties, the concept of planning and designing housing in New Belgrade focused on the 'residential community' as the basic planning unit of the city. Even though the idea of a residential community takes cue from the concept of Clarence A. Perry's 'neighborhood unit' and later sociological and urban elaborations of the concept, in socialist Yugoslavia, the introduction of residential communities is directly connected to the introduction of the self-managed system. The residential community is conceptualized as a community of citizens living in the same area (housing block or microrayon), organized within the municipality in order to manage common social concerns and improve the everyday life in the area. (Blagojević, 2007, pp. 135-6)

These residential communities were soon renamed '*platial* communities' (sh. месне заједнице/*mesne zajednice*), *platial* being an adjective derived from the noun *place*, analogous to *spatial*, from *space*. Despite not being a word in the English language, it is used in this text as an important linguistic distinction that should not be equated with *local*: in Yugoslavia, *platial* communities were one of the instances of *local* self-governance (sh. локална самоуправа/*lokalna samouprava*), along with, for example, housing councils and municipalities. In 1958, the law determined principles of organisation and development of platial communities as 'territorial units and instances of self-managed associations of citizens,' introducing them in the 1963 constitution. According to the *Encyclopedia of Self-Management*, the SFRY Constitution of 1963 defines a platial community as a 'basic self-managed community of working people and citizens in a settlement, part of a settlement or several connected settlements with the goal of achieving certain common interests and a solidary satisfaction of common needs.' The 1974 constitution expands on this definition, establishing the platial community as an obligatory, constitutive element of the socio-political system, i.e., the source from which the self-managed socio-political system grows. (Vratuša et al., 1979, p. 813) The year 1963 was also when the first Platial Community Centre was designed and began to be built in Yugoslavia for the 'Fontana' Platial Community in New Belgrade.

The Yugoslav experience of self-management was not the only instance of experimenting with principles of workers' control in recent history.[2] Still, Yugoslavia remains the only example in history in which self-management was introduced 'from above,' as an official policy of the state, and the one instance that kept drawing the attention of French Marxist sociologist and urban theorist Henri Lefebvre. Lefebvre had a lasting relationship with Yugoslav thinkers, and even participated in several iterations of the philosophical summer school organised on the Croatian island of Korčula by the Praxis group.[3] One of the moments from the school was described in Lefebvre's 1964 article for the *France Observateur,* which reads like one of his more casual writings:

> We get the impression of some joyful socialism, differentiated from the rigid socialism and the imposing capitalist prosperity alike. But, isn't it a consequence of being in the South, and of an ancestral friendliness?

2 For an excellent overview of many non-Yugoslav experiences of self-management, see Ness, I., & Azzellini, D. (2011). *Ours to master and to own: workers' control from the commune to the present*. Haymarket Books., and Azzellini, D. (2015). *An alternative labour history: worker control and workplace democracy*. Zed Books.

3 Yugoslav philosophers and sociologists behind *Praxis* (Branko Bošnjak, Danko Grlić, Milan Kangrga, Rudi Supek, Gajo Petrović, Predrag Vranicki, Danilo Pejović and Ivan Kuvačić) were also prominent supporters of the student initiatives in 1968, and the journal itself was emblematic of Yugoslav contradictions: though its editors were fired from university and party positions after the events of 1968, and attacked as 'CIA agents and destroyers of socialism' for their works on the journal by high-ranking Croatian government officials, the journal was state-sponsored and published by the Croatian Philosophical Society for around ten years, starting in 1964. Špelić, D., & Klasić, H. (n.d.). 1968 u Jugoslaviji. *Povijest četvrtkom*. other, Zagreb, Croatia; Hrvatski Radio.

[...] How to explain self-management and its decisive importance in Yugoslavia? With the Greek-Latin tradition of the city-state? Or, with the Slavic tradition of familial communities, cooperatives? Or rather, with the great fight for freedom of one people capable of assimilating the best in the so-called Western culture? Shouldn't we speak of the fortunate encounter and fusion of all these elements? (Lefebvre, 1964)

Space and Power: A Modern Perspective

Even though Lefebvre had just eight years earlier spoken of the shortcomings of Yugoslav self-management, (Ronneberger, 2009, p. 98) it still represented the conceptual and theoretical basis of the proposal for the urban restructuring of New Belgrade that he co-authored with French architects Pierre Guilbaud and Serge Renaudie in 1986. The theoretical basis of the proposal, detailed in the introduction of the submission, is one of Lefebvre's many writings on self-management (*autogestion*).[4] Anchored in his previous writings on space—especially *The Right to The City* (1968), but also *The Production of Space* (1974)—this detailed essay is considered to be one of the most concrete instances in which his theory of the production of space is made viable to architectural design.

In *The Production of Space*, Lefebvre established, besides the three levels of space (global, urban, private), a trialectic *system* of (dimensions of) space: perceived—conceived—lived, in which perceived (physical) space represents the structures and infrastructures where everyday life (routine) unfolds, as well as how inhabitants use those structures; conceived (mental) space presupposes the ideas (representations) of space stemming from different positions of power, be it capital, state, bureaucracy, or architectural and urbanistic projects; and lived (social) space implies social interactions and actions mostly at the scale of the everyday, informed by social values, traditions, desires, dreams, and memories of inhabitants and users. Importantly, for Lefebvre the lived or social space encompasses the previous two while at the same time being a 'function' of them. (Bertuzzo, 2009, pp. 30-31)

In turn, with the concept of 'new citizenship' elaborated in the competition proposal, Lefebvre reiterates and expands on aspects of the *right to the city* he had conceptualized in the late sixties. This text envisions the right to freedom, to individualization in socialization, to habitat and to inhabit, to the œuvre, to participation and appropriation, and the right to urban life, to be continuously transformed and renewed (Stanek, 2011, p. 234). Furthermore, Lefebvre establishes an understanding of urban life and urban society that to a great extent connects with his concurrent writings on *autogestion*. This connection goes well beyond and much deeper than his direct call for *autogestion* and an urbanism oriented towards social needs (Lefebvre 1996, p. 147) as part of an economic, political, and cultural revolution in the final chapter of *The Right to the City*. Just before that call, Lefebvre writes:

For the working class, rejected from the centers towards the peripheries, dispossessed of the city, expropriated thus from the best outcomes of its activity, this right [to the city] has a particular bearing and significance. It represents for it at one and the same time a means and an end, a way and a horizon: but this virtual action of the working class also represents the general interests of civilization and the particular interests of all social groups of 'inhabitants,' for whom integration and participation become obsessional without making their obsession effective. (Lefebvre 1996, 179)

4 According to an email message from Serge Renaudie to Łukasz Stanek dated 2008, Lefebvre was the author of the theoretical introduction whereas the main architectural and urban ideas were Renaudie's. (Stanek, 2011, p. 234).

This comes very close to Lefebvre's writings about *autogestion* just some years earlier, in *Theoretical Problems*, where he describes it as a means of struggle and a means of reorganisation of society, i.e., the goal of that very struggle. (Lefebvre, 2010, p. 149) If for Lefebvre the right to the city—both a cry and a demand—wasn't a right to the basic needs, but rather a specific urban quality, encompassing access to the resources of the city for all of the population, and the possibility of experimenting with and realising alternative ways of life, (Schmid, 2012, p. 49) it was very closely connected to his conceptualizations of *autogestion* at the time, even though the latter was, in the texts of 1966 and 1968, still almost exclusively pertinent to socio-economic principles. Indeed, Lefebvre would soon, in *The Urban Revolution* (1970), reiterate the revolutionary potentiality of this intertwinement of the struggle for the right to the city and the principle of *autogestion*, describing a political strategy based around generalized self-management [*autogestion generalisée*], and examining the conditions of its possible translation into the sphere of urban space, from that of the industrial. In 1986, with the Proposal for New Belgrade, he would go on to further expand on such a potentiality. In it, via *autogestion* – which, for him, also represented the possibility of the self-production of an individual within the community, but beyond the state (Stanek, 2011, p. 240) – he extends both the concepts of right to the city and production of space through juxtaposition with the concept of *citizen-citadin* [*citoyen-citadin*], and towards not only a restructuring of the urban tissue of New Belgrade, but also of society as a whole.

In the opening remarks of the submission, Lefebvre describes the potentiality of Belgrade, and Yugoslavia, in his concrete positing of the problematic of a 'New Urban':

> The right to the city comes as a complement to the rights of the *citizen*: who is not only a member of a 'political community' whose conception remains indecisive and conflictual, but of a more precise grouping which poses multiple questions: the modern city, the urban. This right leads to active participation of the *citizen-citadin* in the control of the territory, and in its management, whose modalities remain to be specified. It leads also to the participation of the *citizen-citadin* in the social life linked to the urban; it proposes to forbid the dislocation of that urban culture, to prohibit the dispersion, not by piling the 'inhabitants' and 'users' one on top of another, but by *inventing*, in the domains and levels of the architectural, urbanistic, and territorial. (Lefebvre et al., 1986/2009, p. 2)

Lefebvre, thus, assigns the potentiality *citizen-citadin* in Yugoslavia had to claim their right to the city precisely to the concept of *samoupravljanje:* 'Because of self-management, a place is sketched between the citizen and the citadin, and Yugoslavia is today perhaps one of the rare countries to be able to concretely pose the problematic of a *New Urban,*' he writes in the same text. (Lefebvre et al., [1986] 2009, p. 2) While the English term 'citizen,' corresponding to the French '*citoyen,*' pertains to belonging or admission to a conceived community (a representation: nationality, ethnicity, religion, etc.), the term *citadin*, on the contrary, describes every inhabitant with the capability and the right to use (as opposed to: consume) and produce space, therefore continually directly affecting it. *Citadins* are not 'given' a right to the city, but constantly engage in a struggle to achieve it and keep it. *Citadins* should be capable – through a perpetual struggle mirroring the process of the production of space – to debunk and change the paradigms that reproduce space to the liking of varied instances of power.

The competition proposal by Lefebvre, Renaudie, and Guilbaud posits the question of a 'New Urban,' the renaissance of the city, primarily through the establishment of such a 'New Citizenship' as a fully realised '*citaddinité,*' 'a dynamic possibility offered to individuals who inscribe themselves into the movement of collectivity, of "*vivre-ensemble*" [living together]: the City'" (Lefebvre et al., 1986/2009, p. 16) and the refusal of the 'New Monumentality,' characteristic of the development of New Belgrade over approximately twenty years prior to the competition. During that time, the area had developed as a dominantly residential part of the city, with 'superblocks' designed to house five to ten thousand inhabitants each, along with basic services, such as schools, health centres, etc. The proposal of by, Renaudie and Guilbaud focused strongly

on urban complexity and was based on the principles that they had identified as missing in mid-eighties New Belgrade: *diversity* ('of production and products,' 'of management rules and practices', 'of methods of regroupment [*sic*] and individualization', 'of circulations, communication networks and their management, production, realization and use'), *imbrication* (overlapping 'of flux and networks', 'dimensions and forces', 'of ages', 'of appropriations – public/private, collectivity/individuality, community/intimacy', 'of territories – in terms of laws, size, time', 'of different managements'), and *respect for specificities* (preservation of individual identities within a community).

Just as important as their interventions in the urban plan of New Belgrade was the team's call for the right to the city that presupposes a transformation (reconfiguration) of society. The project didn't present any fixed forms in urban space, but rather modes of organisation based on *autogestion*, or *samoupravljanje*, as it, for Lefebvre, represented a force opposite to alienation, a 'de-alienation', through which control over one's own life is to be reclaimed, 'in such a way that it becomes œuvre.' (Lefebvre, 2010, 150)

In the competition proposal, Lefebvre, Renaudie, and Gilbaud envision an imbrication of appropriations: a diversification of relations between individual and collectivity, intimacy, and community. This is to lead to diversified forms of *autogestion* and of production, which further diversify the very principle of generalized self-management, enriching it with new social and political structures, towards a *truly* self-managed system, enabling new modes of (re-)appropriation of the space of the city, daily life, and the social.

This opposition of alienation and appropriation is embedded in the same modes of struggle as that of domination (of centralised power) and *autogestion* (self-management). Among those modes is also the struggle for (the right to) the city, which encompasses, but isn't limited to a struggle against exclusion, marginalization, and exploitation: a struggle for access to resources, decision-making, potentialities, and possibilities for new and different *uses* of urban space. Thus, ultimately, a struggle towards *autogestion territoriale*, or territorial self-management, which is the actual core of the team's concept for the 1986 New Belgrade competition and represents a bottom-up force opposite to that of top-down, alienating practices in urban space. This alienation, as Lefebvre had written about in *The Urban Revolution*, goes beyond the mere sale of land (physical space, so to say):

> The deployment of the world of commodities now affects not only objects but their containers, it is no longer limited to content, to objects in space. More recently, space itself has begun to be bought and sold. Not the earth, the soil, but *social space*, produced as such, with this purpose, this finality (so to speak). Space is no longer only an indifferent medium, the sum of places where surplus value is created, realized, and distributed. It becomes the product of social labor, the very general object of production, and consequently of the formation of surplus value. This is how production becomes social within the very framework of neocapitalism. (Lefebvre, 2003, p. 154)

Fifty years after *The Urban Revolution*, this is extraordinarily pertinent, in urban spaces and otherwise, though by no means a new, or surprising, development. In the years after the competition in which Lefebvre et al. took part, Yugoslavia began to dissolve, culminating in a series of fratricidal wars the scale of which hadn't been seen on European soil since WWII. What followed in urban spaces across the successor states was a series of dubious privatizations and sales by and to criminal powers that be, officially and otherwise, while, appropriately, taking shy first steps within the world of neoliberal capitalism. Elsewhere, and particularly in the West, such fluctuations were already full steam ahead, and private, corporate interests, already securely embedded in structures of political power, have been shaping the world in every sense of the word, more often than not relying on the justification of (in particular, technological) progress.

Back in New Belgrade, which Lefebvre in the eighties saw as a potential launching point of a self-managed new urban, the 30 years since the breakup of Yugoslavia have led to a chimeric creation of scattered,

privately-owned glass structures and Orthodox churches layered atop formerly social housing constructed in a now non-existing country. Just across the river, laws and regulations have been altered and major portions of land, and jurisdiction over them, sold to Middle Eastern oil and other corporate magnates, to build luxury developments disrupting not only the architectural tissue of the city and its infrastructural configurations, but also leaving people homeless, either by blatant forced evictions, or by gradual rises in living costs. Most recently, a 23.5 metre tall monument to a medieval Serbian ruler was unveiled in front of the building of the former main train station, dislocated from the city centre to give way to said luxury developments. The price of its construction has been deemed a state secret.

As (private) interests of power acquire and shape urban spaces, they are often also entitled to regulate not only their form and structure, but also activities and modes of use and consumption that unfold within them, rendering the term 'public space' an oxymoron at best, and 'social space' a fantasy. The phrases, however, remain as selling points and methods to conceal the true nature of (privatized) urban spaces and processes behind them. These mechanisms of power (in all its many shapes) are more quickly and aggressively than ever approaching, accessing, and taking over spaces – not only economic or political spaces, but also all the spaces of the everyday: urban, social, and beyond. It is now crucial to, within the framework of that very everyday, look for concepts of resistance and reorganization of society. One such concept, embedded in the everyday, and loaded with potential for reappropriation is spatial self-management, *autogestion territorial, prostorno samoupravljanje*.

To locate and retrieve the successes and shortcomings of it and various other forms of self-management, and to recognise their truest iterations, as well as what made them such, it is crucial to unravel the many iterations and numerous layers of historical examples of self-management, well beyond those present in laws and regulations of times past – to take steps, from the global, via urban, to the private, the everyday, and away from the influences of the instances of power, whichever form they might take.

If an axis was to be followed from the centres of power proclaiming *samoupravljanje*, via the spaces of industrial labour and production where it was birthed in the SFRY, and further across its employment in political protest and resistance (in the form of demonstrations, occupations, sit-ins, and alternative art and countercultural practices alike),[5] truly lived *samoupravljanje* is encountered to an ever-broader extent. At the same time, so is gradually weaker interest and intensity of centralized control and regulation from the instances of power. Such an unravelling, of course, did not escape Henri Lefebvre in his dealings with the territory of New Belgrade and the everyday lives of its inhabitants.

As someone who had, at the time the Competition for the New Belgrade Urban Structure Improvement took place in 1986, been writing on and researching self-management for at least twenty years, Lefebvre was well aware of the contradictions and inconsistencies of Yugoslav *samoupravljanje.* Indeed, in a 1978 interview with Catherine Régulier, he says: 'I am talking about the failure of centralized planning in the Soviet Union as well as the failures of *autogestion* in Yugoslavia [...] The movement comes from below or it does not come at all. The example of Yugoslavia leads us [as well to that] conclusion. A state that proclaims *autogestion* from above paralyzes it by this mere fact and converts it into its opposite.' (Ronneberger, 2009, p. 98) Still, in the competition proposal, he bases the potentiality of the urban revolution and New Belgrade in the very concept of self-management. This, of course, was not due to some naïveté. It was, perhaps, in order to (re) establish a utopian vision of self-management, as Łukasz Stanek writes in *Henri Lefebvre on Space* (2011, p. 234); and, perhaps, because Lefebvre – who had closely followed the changes in Yugoslavia since at least the early sixties – recognised that, even though often employed as a top-down tool by instances of power, *samoupravljanje* still, at some scale, existed as a truly lived (everyday) practice.

5 See Pajović, U. (2018). The Utopia Belongs to Us. Towards Self-Management: On Resistance, Remembering, and a Hope for Revolution. *Kajet*, (2), 142–151.

With the Yugoslav Constitution of 1974, which introduced self-management at all levels of society, the country's population was divided into three groups: the 'working class' (the carriers of power in socialism, in accordance with Marxist theory), the 'working people' (employees in state-owned companies and institutions), and everyone else, labelled 'citizens' (г г г г г г г */građani*). (Erić, 2009, p. 140) To be able to actively take part in the self-management system, writes historian Zoran Erić, 'the citizen[*-građanin*] could act only on the level of their local territorial unit, while the other "sociopolitical" organizations were reserved for working people only.' (Erić, 2009, p. 140)

There are several factors explaining why this smallest territorial level of self-management is where we actually encounter the most immediate implementation of the theoretical implications of *samoupravljanje*. Firstly, the affected inhabitants and their interests were present, rather than represented; secondly, all strata of Yugoslav society were implied and involved in this level of self-management; and, thirdly, and similarly to cultural institutions (as opposed to, for example, economic activities), there was arguably less interest from the ruling apparatus to assert its control over them. The 'local territorial units' in the narrowest sense were *platial* communities. According to the law, these were associations of people (working class, working people, and *citizen-građanins* alike) living in the same area, who made decisions regarding the organisation of the settlement, housing, communal utilities, child and social care, culture, physical culture, consumer protection, environmental protection, defence, etc. (Vratuša et al., 1979, p. 813) Conceived as the basic constitutive units of a self-managed society, they reflected the reality of self-management in working organisations in Yugoslavia, in which the lower levels saw real workers' self-management, while, on the upper level, among the administrative cadres and the political elites in the League of Communists, there was far less democracy. (Erić, 2009, p. 140) Similarly, as self-managed entities defined by the state, platial communities also met with problems symptomatic of Yugoslav self-management in general. These included increased bureaucratization of the practice, the positioning of the workers' organisations, internal distribution, and deviation from limits on the role of the League of Communists (Erić, 2009, p. 142).

In his 1966 'Theoretical Problems of *Autogestion*', Lefebvre writes that *autogestion* appears 'in the *weak points* of existing society.' (Lefebre, 2010, p. 144) In this sense: the *citizen-građanin* in Yugoslavia was the non-member of the party, the unemployed,[6] the student, the minority, the individual whose space, time, and city are predominantly those of struggle and of the everyday. Furthermore, the *citizen-građanin* employed self-management within that everyday, as a means of that struggle and, in its true instances, towards an entirely self-managed society. On the other hand, the *citizen-građanin*'s ability to take part in decision-making in platial communities was high compared to other levels of society in Yugoslavia. Trapped in the ouroboric paradox of top-down self-management, the *citizen-građanin*, in a way, didn't face the same kind of challenges as the *citizen-citadin*. In other words, when the right to self-management is proclaimed from the centre of power, it might lose a crucial aspect: it might disappear from the horizon of struggle, thus leaving self-management at the brink of devolving into mere fragmented self-organisation, thus endangering the perseverance of the concept and the struggle altogether. Exactly this happened in Yugoslavia, making it possible for *samoupravljanje* to be transformed, by instances of power, into its almost opposite; for nationalistic tendencies to replace and extinguish class struggle and questions of labour; and, ultimately, for the very concept of *samoupravljanje* to be unable to survive the dissolution of the country in virtually any form.

6 Uncommonly for a socialist country, and especially after the introduction of market socialism, levels of unemployment in Yugoslavia went, at times, up to 20% gross.

Today, Tomorrow: Global Crisis - Time to Regroup, Self-Management - Means to Reorganize

As I am writing this text, the world has been in a global pandemic for almost two years, having thus far resulted in over five million deaths. A tragedy of immense scale, it additionally embedded a worldwide halt to 'business as usual' primarily in the form of massive reduction of movement. Such a stillness, on the other hand, inherently had to lead to a state of retrospection and questioning of the (dis)contents of the system within which most of contemporary society has been operating for decades – especially the cruelties of late neoliberal capitalism and the many forms of inequality it requires to self-perpetuate.

Most obviously, these include, across the globe, the prioritization of geopolitics and/or bureaucracy over public health, a deepening wealth gap and increase of the 'extremely poor' population, and an almost-universal precarity of working classes as well as passport-politics in the form of movement regulations and vaccination schemes, effectively making visible international hierarchies. In spatial terms, the changed conditions of responsibility regarding public gatherings and modes of protest in public space, as well as varying restrictions on movement, have simultaneously paved way for and highlighted the tactics of brinkmanship by gentrification in urban environments and brutal extractivism elsewhere by instances of power – state, corporate, or, increasingly often, state *and* corporate.

With their increasing affluence and influence, technology companies have often been at the helm of such developments. It is a universal phenomenon that tech campuses, with their sudden influxes of socially isolated, high-earning employees directly disrupt urban and suburban spaces alike, primarily through gentrification and un-diversification. Designed primarily with the goals of productivity and technological progress in mind, these campuses offer (by way of in-house cafeterias, play spaces, nap pods, and similar bizarre takes on leisure and free time) an all-but-one solution to the everyday needs of its workers. The 'one' that is missing is housing, inevitably leading to a rent price spike due to the increased purchasing power of those seeking to move in, and thus effectively dislocating established community structures without there ever being a space and time for the two groups to communicate. Simultaneously to the mental, physical, and social, a similar kind of invasion is happening in parallel in the digital space, in which the distribution of knowledge and information as well as the right to agency, participation, and decision-making is increasingly in the hands of technology corporations.

Lefebvre died in 1991, the same year a series of wars began that would complete the dissolution of Yugoslavia and its self-managed system. In the thirty years since, technology has become a vital aspect of everyday life, even more so since the beginning of the Covid-19 pandemic. That this sudden and all-encompassing boost in the presence of technological systems in our lives coincides with a reconsideration of political and social systems in place is crucial, and it is here that special attention needs to be drawn to the failure—especially symptomatic to leftist thought—not to reject technological development and automation *a priori* due to their immediate (and logical) association with Big Tech.

In 2021, Lefebvre's system of dimensions of space is still as pertinent as it was decades ago when it comes to theoretical considerations of city and countryside alike. Here, I propose another layer of everyday life to be acknowledged and added to this trialectic – that of the digital space. In a Lefebvrian sense, digital space would – much like social space encompasses, produces, and is a product of mental and physical space – encompass, produce, and be a product of all three. It would, however, also entail additional ways of detaching from each of them, and be able to further or 'double down' on any given one. Herein lies its gravest danger, and its biggest potential. As physical space 'doubled down', it is a simulation. Not, in the way in which mental space iterates plans, laws, renderings, drawings, nor in the way in which social space creates fantasies and dreams. No, 'digital-physical' space is a carbon copy, an infrastructural necessity of physical

space *per se* to also support—host—that which is beyond the physical, to extend by repetition: the profile on a social media platform, the digital shoes for an avatar sold at $3000 a pair, the inbox, and also the forum. As mental space 'doubled down', it is bureaucratic and corporate. Put simply, it is the weaponization and monetization of data for the purpose of control or profit, or, most often, both. Simultaneously, it is an infrastructure for the imagination that stems from the social-digital. The latter is an unadulterated reappropriation of space, agency, and control: it is organisation, democratic and non-discriminatory, forthright and fast, privacy-conscious and bottom-up. It is the terrain for social and global governance and for grassroots change. In other words, it is a perpetual struggle mirroring the process of the production of space to debunk and change the paradigms that reproduce space to the liking of varied instances of power.

It is, by far, also the most unfamiliar of the three. However, this, too, is shifting within the current global crisis, as formats akin to principles of self-management have been growing in digital space, thus reproducing the social-digital. Some of them, like *vTaiwan*, a platform for propositioning, direct voting, and debating, have even become part of official, crowdsourced policy making. As we witness this nascent force in the digital space, it is important not just to expand the understanding of the latter in both Lefebvrian terms and otherwise, but also to remember to explore, select, and apply historical (infra)structures of political, industrial and urban self-management to the contemporary context, constantly readdressing its failures and successes, asking how to reappropriate spaces, including digital spaces, and technology as means of organisation within the framework of global, bottom-up governance.

Lenin's famous suggestion was that socialism equalled Soviets plus electrification. Lefebvre updated this idea in 1964 to grassroots organisations plus modern electronic devices, and territories along with sites of production. (Lefebvre et al., 2010, p. 152) In 2021, is it, then: worldwide grassroots communities plus smart personal devices times historical experiences of self-management?

References

Azzellini, D. (2015). *An alternative labour history: worker control and workplace democracy.* Zed Books.

Bertuzzo, E. T. (2009). *Fragmented Dhaka: analysing everyday life with Henri Lefebvre's Theory of production of space.* Franz Steiner Verlag.

Blagojević, Lj. (2007). *Novi Beograd: Osporeni modernizam*. Zavod za udžbenike.

Blagojević, Lj. (2009). The Problematic of a 'New Urban': The Right to New Belgrade. In S. Bitter & H. Weber (Eds.), *Autogestion, or Henri Lefebvre in New Belgrade* (pp. 119–134). Sternberg Press.

Bogetić, D., & Dimić, L. (2013). Beogradska konferencija nesvrstanih zemlaja 1-6. septembra 1961.: Prilog istoriji trećeg sveta. Zavod za udžbenike.

Došen, V., Jekić, M., Jelena Petrović, Teodosić, B., Šumonja, P., & Andrić, B. (2012, August 29). Trezor, Belgrade, Serbia; RTS.

Erić, Z. (2009). The Third Way: The Experiment of Workers' Self-Management in Yugoslavia. In S. Bitter & H. Weber (Eds.), *Autogestion, or, Henri Lefebvre in New Belgrade* (pp. 135–150). Sternberg Press.

Lefebvre, H. (1964, August 20). *Socialisme pendant les vacances*. France Observateur.

Lefebvre, H., Renaudie, S., & Guilbaud, P. (2009). International Competition for the New Belgrade Urban Structure Improvement – Equipe No51103. In S. Bitter & H. Weber (Eds.), *Autogestion, or, Henri Lefebvre in New Belgrade* (pp. 1–80). Sternberg Press. (Original work published in 1986).

Lefebvre, H. (1996). *Writings on cities*. (E. Kofman & E. Lebas, Eds.). Blackwell.

Lefebvre, H. (2003). *The urban revolution*. University of Minnesota Press.

Lefebvre, H. (2010). *State, space, world: selected essays.* (N. Brenner, S. Elden, & G. Moore, Eds.). University of Minnesota Press.

Ness, I., & Azzellini, D. (2011). *Ours to master and to own: workers' control from the commune to the present*. Haymarket Books.

Ronneberger, K. (2009). In S. Bitter & H. Weber (Eds.), *Autogestion, or, Henri Lefebvre in New Belgrade* (pp. 89–118). Sternberg Press.

Schmid, C. (2012). Henri Lefebvre, The Right to the City, and the new metropolitan mainstream. In N. Brenner, P. Marcuse, & M. Mayer (Eds.), *Cities for people, not for profit: critical urban theory and the right to the city* (pp. 42–62). Routledge, Taylor & Francis Group.

Stanek, L. (2011). *Henri Lefebvre on space: architecture, urban research, and the production of theory.* University of Minnesota Press.

Stubbs, P. (2020, January). The Emancipatory Afterlives of Non-Aligned Internationalism. Rosa Luxemburg Stiftung. https://www.rosalux.de/en/publication/id/41556/#_ftnref11.

Vratuša, A. et al. (1979). Mesna zajednica. In *Enciklopedija samoupravljanja* (p. 813). Savremena administracija & Izdavački centar Komunist.

Reimagining Humanity

Junichi Satoh [1,2], **Taylor Stahle** [2]

[1] *College of Built Environment, University of Washington (United States of America)*
[2] *Utility Works (United States of America)*

Abstract

'Faced with inevitable collapse, leading scientists used some of the industrial world's last remaining technological and energy resources to design and provide an AI bot for selected people on the planet.'' The following short fiction story explores the next version of human settlement after the collapse of this one, as predicted by Bendell's research into 'Deep Adaptation' (Bendell, 2020). Dr. Bendell warns us that, unless we find ways to radically change our lifestyle, 'human societies will experience disruptions to their basic functioning within less than ten years due to climate stress. Such disruptions include increased levels of malnutrition, starvation, disease, civil conflict and war – and will not avoid affluent nations.' Through this story, we illustrate the idea that a societal collapse may actually be what humanity, and most certainly what the earth, needs.

.

Keywords

Artificial Intelligence, Indigenous Cultures, Fiction, Deep Adaptation, Sustainability, Survival of the Fittest

DOI

https://doi.org/10.47982/spool.2022.2.07

'Life is, in itself and forever, shipwreck. To be shipwrecked is not to drown. The poor human being, feeling himself sinking into the abyss, moves his arms to keep afloat. This movement of the arms which is his reaction against his own destruction, is culture – a swimming stroke... But ten centuries of cultural continuity brings with it – among many advantages the great disadvantage that man believes himself safe, loses the feeling of shipwreck, and his culture proceeds to burden itself with parasitic and lymphatic matter. Some discontinuity must therefore intervene, in order that man may renew his feeling of peril, the substance of his life. All his life-saving equipment must fail, then his arms will once again move redeemingly.

Consciousness of shipwreck, being the truth of life, constitutes salvation. Hence I no longer believe in any ideas except the ideas of shipwrecked men.'

–José Ortega Y Gasset

It has been 90 years since Bernard Rudofsky wrote in an article for *Domus*, '*Non ci vuole un nuovo modo di costruire, ci vuole un nuovo modo di vivere* – what we need is not new technologies but a new way of living.' Since then, many scientists, with research and data, have urged us to change our behaviour to avoid environmental, social, and economical collapse. Dr. Jem Bendell warns us in 'Deep Adaptation' that, unless we find ways to radically change our lifestyle, 'human societies will experience disruptions to their basic functioning within less than ten years due to climate stress. Such disruptions include increased levels of malnutrition, starvation, disease, civil conflict and war – and will not avoid affluent nations.' We have known this for decades, yet we continue to focus on developing new technologies, depleting one natural resource after another.

The following story is fiction, not for entertainment purposes or to instruct readers what to do, but to inspire their critical faculties.

•••••

It was as if our neck collars had come off all at once. It caught everyone by surprise and took us some time to realise we were free. We sat there like birds in a cage with the door wide open.

One night, the electricity, phones, and water all went out. After a week, the stores ran out of essential goods. People started burning whatever they could to cook and stay warm. Looting began. It was still safe during the day. Under the sun, humans remained civil to each other. But that didn't last long. Everyone became savage in trying to protect what they had. We soon realised many are willing to kill others for it.

I kept thinking of those annoying people on Sunday mornings with their gasoline-powered leaf blowers, my drive to Walmart to buy a gallon of water, and the last thing I bought on Amazon – an ink cartridge for my printer which was wrapped in plastic in a box covered with full-colour graphics, placed in a huge cardboard box and delivered in a truck. What were we thinking? It was sheer madness.

My family and I decided to go to the woods near where I grew up. We packed everything we could into our SUV and headed out. It's pretty remote, with clean water, plenty of fish and edible plants and berries to keep us going for a while. Winter would be a problem, but who knows if winter will come or if we'll still be here then.

'Dad, it's pulsating again!' Hana held it up from the back seat.

We had a feeling we had to bring it with us and keep it close.

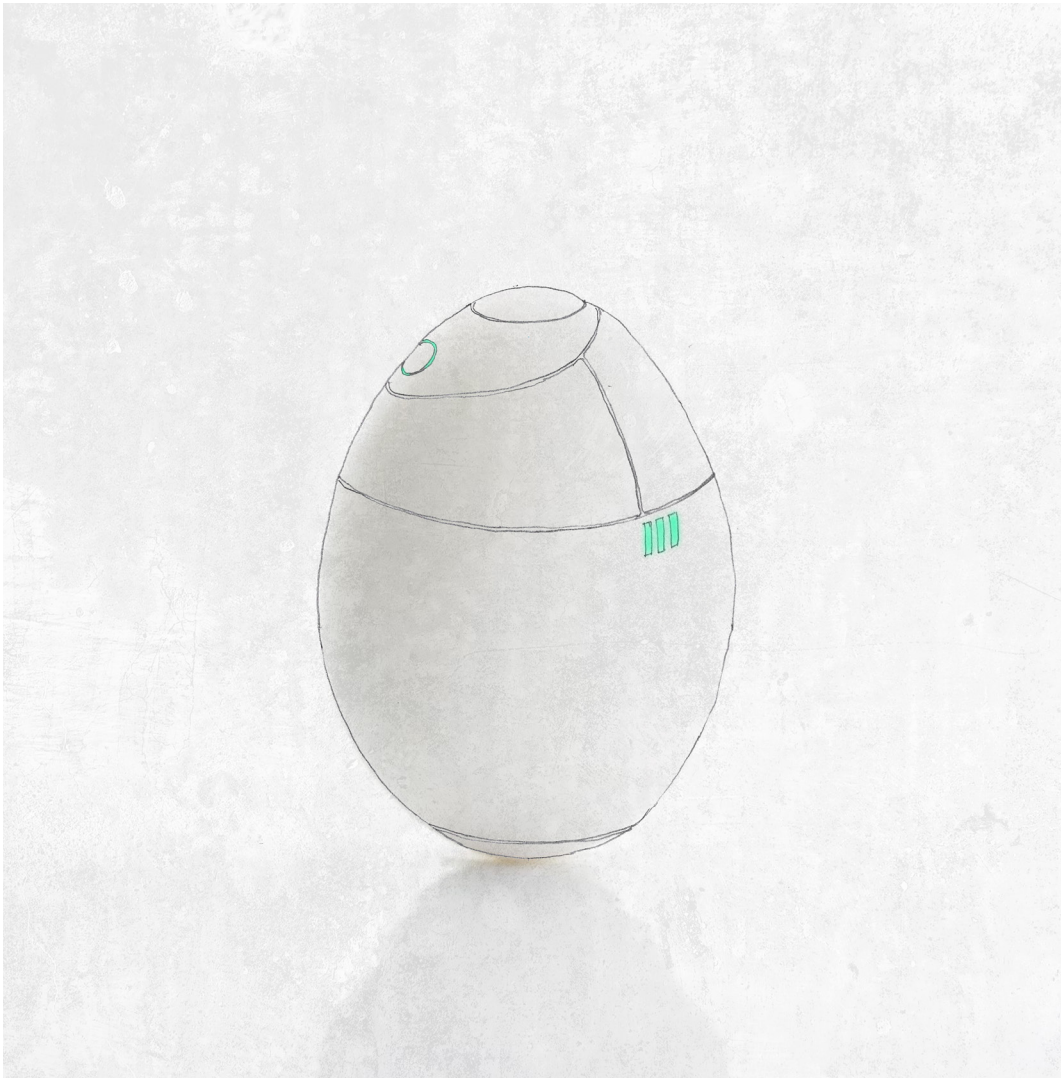

FIGURE 1

1 Resilience

FACED WITH INEVITABLE COLLAPSE, LEADING SCIENTISTS USED SOME OF THE INDUSTRIAL WORLD'S LAST TECHNOLOGICAL AND ENERGY RESOURCES TO DESIGN AND PROVIDE AN AI BOT FOR SELECTED PEOPLE ON THE PLANET. AI BOTS HAVE ACCESS TO THE WEALTH OF KNOWLEDGE DEVELOPED AND DATA COLLECTED BY HUMANS OVER THE CENTURIES, CAN COMMUNICATE WITH ALL OTHER AI UNITS, AND CONTINUOUSLY EVOLVE, WITH THE SOLE PURPOSE OF CREATING A SUSTAINABLE HUMAN ECOLOGY.

WEEK 1

It was last Friday afternoon, just before Easter weekend. I am not a particularly religious person, but it has always been my favourite holiday. I like stories of miracles – of something unimaginable.

Hana walked through the door with a box.

'It's from the US Postal Service.' She glanced at the mailing label as she began to break open the box.

'Wait!' I yelled.

We can't be too careful these days. She rolled her eyes the same way I used to whenever my parents said or did something not cool. Inside was a shrink-wrapped, white, shiny egg. The 'i-Egg,' I thought. There were no instructions, no URL.

'What is it?' Elizabeth looked over from the kitchen.

'Can you bring scissors, Mom?'

It could be some kind of bomb, I thought, like the sarin gas massacre on the Tokyo subway, or was it Osaka?

'Hey. Stop!'

'What is this?' Hana completely ignored my plea and took it out of the plastic.

She held it in her palm, caressing it carefully like she was looking for a switch on a new iPhone. 'It's pulsating.'

We each took turns examining it. It pulsated in our hands for a few seconds, then stopped. It was heavier than it looked. I remembered the summer day when I sneaked into my uncle's garage and secretly held his gun in my hand. Hana held it to her ear but couldn't detect any sound. There was no smell or heat coming from it. She put her fingernail between the seams, trying to see if it would open. We tried shaking it to see if something was loose inside, but nothing.

Hana put it back in the box. 'Weird. It looks like it should open up from the seams or something. Maybe it needs to be charged.' She was already losing interest. 'I gotta run. I'm hitting the beach with Alex. You should Google it, Dad.'

'I need to go to the store too. I'll give you a ride, Hana.'

Moments later, they got themselves together and yelled from the doorway.

'Google it first. Don't try to break it open!'

I took out my pocketknife and went around the seams with the blade. It didn't even give. These lines may not be seams but just etchings on the surface. I had no idea what it was. All I could tell was that it was made with incredible skill and precision. I pushed different parts of it, held my fingers in different spots on it to see if it had that fingerprint recognition thing. I shook it gently, remembering the sarin incident again. I put it back in the box and got up to get my laptop.

I spent a couple of hours Googling. Nothing. All I found was a bunch of toys and candy disguised as Easter eggs. I found 'i-Eggs' that play sounds as kids get close to them during egg hunts. I closed my laptop. This

was Easter weekend after all. Camille and Osamu were flying home for spring break as we speak. I went up to their rooms to put sheets on their beds.

•••••

My wife and I used to dream of moving to the countryside and start growing our own food and living off-the-grid. But then we had a kid, then another one, and then another one. Life took over. I kept my job as a professor just to keep up with the bills – I had lost my drive a while ago to make the world a better place by educating young minds. Now I merely entertain them. Every once in a while, we'd go hiking and imagine what it would be like to live the life we had once dreamed of. But that goes away. I see our beautiful children and become overwhelmed with a sense of responsibility – we need to provide for them and help them live their lives to the fullest – braces, Instagram-worthy clothes and vacations, first cars, college tuition, study abroad, etc. So, we kept going, just like everyone else.

As a professor of architecture, I knew better than most people the damage humanity was inflicting on this planet. Even as a child, I was aware something was wrong when I started fly fishing and realised we didn't have trout as big as my grandfather used to catch. Climate change and sustainability became household words, and we did try to contribute to minimizing the damage... Hearing myself say this now seems maddening – 'minimizing the damage.' If someone was putting poison in my daughter's food, would I have been satisfied by 'minimizing' the amount? It just didn't seem real. It didn't feel that urgent. I made up all sorts of excuses: 'I alone can't save the planet by changing my way of life.' 'I have to drive to work because our incompetent government can't provide adequate public transportation.' 'I am at least bringing tote bags when I go grocery shopping.' How ridiculous it sounds now... As small as our attempts may have been, my wife and I did try to find ways to become healthier members of this planet. We picked up some knowledge and skills for when we could actually start living off-the-grid in the countryside. We took classes on foraging, permaculture, and how to make homemade cheese. But I guess it was for all the wrong reasons. We just wanted to feel better. We just wanted to look better.

•••••

We sat around our kitchen table trying to figure out what this egg was. Camille, our oldest daughter, picked it up and put it in her palm.

'Weird. It's pulsating.'

'It's doing that again? Let me see.' I took it from her and put it in my hand, but it had already stopped.

'Now it's pulsating.' Osamu snatched it from my hand and looked closely at it. 'It stopped. It's gotta be the battery. How do we charge this thing?'

He put it down on the table. It rolled a little and all of a sudden sat up like the old egg trick. If you put a little salt on the surface, you can make an egg stand on its end. But this was different. It rolled then stood up. Before any of us could say a word, it flashed. It was so bright that it blinded us for a second. Then it rolled back down on its side.

'What just happened?'

•••••

The Egg didn't do anything after that. We placed it on the bookshelf in the living room for further exploration later. We had some cooking to do for Easter.

•••••

We didn't notice it for a while. We were having dinner by candlelight. Elizabeth and I like to make 'eating' special, a ritual. I had a couple of glasses of red wine and was listening blissfully to our kids talk about their school, friends, and plans for the summer. Elizabeth and I looked at each other and smiled. Everything was wonderful. It was Hana who noticed it first.

'Hey. I think it's a blackout. Look. There are no lights in any of the houses. Streetlights are out too.'

'We've got no signal.' Osamu looked at his phone.

'It'll come back. Let's have some dessert and tea. The stove should be fine. It's gas.' I'd been looking forward to taking a bite of the pecan pie Elizabeth had made earlier.

'I'll whip the cream, Mom,' Camille and Elizabeth went into the kitchen with a candle.

•••••

In the months leading up to the blackout, there had been news of snowstorms in Hawaii, dozens of tornadoes in New York City, and an unprecedented number of forest fires and floods on every continent. Cherry blossoms had bloomed almost a month earlier than usual in Tokyo. But I guess we had all been desensitized. It was almost exciting and entertaining to see those photos of natural disasters on the Internet. We never thought any of that would affect our lives here in the Pacific Northwest. There were signs here too, but we had chosen to ignore them.

•••••

The military tried for a while to maintain a certain sense of order. They set up a command centre at Hana's high school and distributed food, water, and information. It didn't take long before people caught on and realised something was seriously wrong. People started to take matters into their own hands.

Since then, I've often thought about our family back east, and in Japan, but there was no way of knowing if they were okay – if they were still alive.

We left our home and headed to the Olympic Peninsula.

2 Relinquishment

WITHIN A MATTER OF WEEKS, HUMANS WOULD REALISE JUST HOW VULNERABLE THEY ARE IN THEIR OWN BACKYARDS WITHOUT MODERN CONVENIENCES. LEARNING TO BE A PART OF THE ECOSYSTEM BECOMES URGENT.

AI BOTS ARE DESIGNED TO HELP HUMANS INTEGRATE INTO THEIR ENVIRONMENTS, RATHER THAN ATTEMPT TO CONTROL OR MITIGATE IT. RATHER THAN SIMPLY TRANSMITTING KNOWLEDGE, THE AI BOTS OBSERVE THEIR HUMAN COUNTERPARTS AND ASSESS THE MOST EFFECTIVE MODE OF LEARNING.

WEEK 3

Just after sunrise, we arrived at what used to be a youth camp where I had spent my childhood. We decided to drive a few miles past the 'No Motor Vehicles' sign. We wanted to hide. I knew we were all thinking about last night – our neighbour across the street shooting a man asking for food.

Camille and I began collecting some firewood while Osamu set up our tents. Elizabeth and Hana got started on breakfast. We have our camping routines. Camille was shaken by the whole thing. So was I. I found a patch of fiddleheads.

'Hey. we should come back later with a bag and pick some of these for dinner.'

She smiled. I knew there would be berries and mushrooms we could pick too.

•••••

'Let's hike up to the peak after breakfast.'

It was the peak my father and I used to go up to when I was little. We'd go all the way up, have lunch, and come down as we fished for trout. From the peak, we could see mountains and forests for miles all around. It was a beautiful day. We didn't hear any noise.

'Look.' Elizabeth pointed. We could see black smoke in the distance. 'I wonder if that's Seattle.'

•••••

WEEK 20

For several months through the spring and summer, we actually enjoyed our new routines. Between what we brought, foraged, and caught we ate well. We also built huts for the kitchen, storage, and a place to hang out on rainy days. We all started our own projects too. Camille began writing stories. Osamu made music with new types of instruments he invented. Hana and Elizabeth got busy preserving food, and I was making art again. I hadn't had time to do that for I don't remember how long. But we knew winter would be here soon and were getting ready as much as we could – stockpiling firewood and insulating the huts with a mixture of clay and dried plants.

It rained almost every day. 'It feels like winter, ' said Elizabeth. It did feel like winter, but it was still the middle of September.

•••••

'Dad!'

I heard Hana's voice yelling. I jumped out of my sleeping bag.

'What happened?' I grabbed my knife without thinking.

'Look!' I followed her finger. 'It's the Egg!'

It took me a moment to comprehend. The 'i-Egg' was hovering above the table. Everyone came out of their huts.

'Woah. What did you do?' Osamu mumbled as he walked towards it. Elizabeth grabbed him.

'Don't.' There was no noise. It silently hovered without any movement. It felt as though time had stopped. Magritte's painting – 'Son of Man', I thought. Then suddenly a bright light came out of the bottom. We jumped.

'What the…' Hana cautiously got closer. 'It's an aerial map.'

The Egg was projecting an aerial map onto the table.

'It's here. It's showing where we are.'

There was a red triangle pointing to where we were.

'Look. Our camp is there too. Did this thing take this photo?'

The photo must have been shot from pretty high up. It covered at least a quarter-mile radius. Then the map began to zoom out. It zoomed out to what I estimated to be about a 3-mile radius and words appeared. 'WARNING: LANDSLIDE: ESTIMATED TIME: 6 HOURS. RECOMMENDED EVACUATION ROUTE:' Blue dotted lines appeared on the map. I was mesmerized by the quality of the photo and the graphics and didn't realise they were all looking at me.

'Dad, what are we going to do?'

How does it know? Was it recording the amount of rain? But how can it predict a landslide? Where is it telling us to go?

'Hana, let's go and see where this thing is telling us to go. It looks to be only about a mile from here. Can you all start gathering our stuff?'

I was going to get paper and a pencil to draw a map when the Egg stopped projecting and flew slowly and silently towards Hana.

'I think it's going to take us there.'

I wasn't entirely sure if this is all real. I wondered if I was in a dream. I couldn't understand how this thing was actually flying without any sound or propellers, let alone guiding us where no one seemed to have ever gone before. Hana didn't seem bothered by it, which made me feel like I really was dreaming. She acted as though she knew what this thing was thinking. It took us through rough terrain. We walked through thick undergrowth and got soaking wet. I was wondering if I could have found our way with a hand-drawn map copied from the projection.

'I think we're here.' Hana put her hand out and the Egg fell into her hand.

'How did you do that?'

'I don't know. I just did and it landed in my hand.' She stared at it for a moment and put it in her pocket.

I felt like the universe shifted and everything was beyond my comprehension. I thought this must be what it feels like to have your mind blown literally.

'Check this out!'

It was a cave, about 20 feet by 20 feet and 12 feet high.

'All these years, I had no idea there was a cave up here.'

It was dry inside with no sign of animals. I could hear a creek nearby which would come in handy for water and fish later. We looked around for a little while and found nothing wrong with the place.

'Let's go get everyone.' Hana pulled the Egg out of her pocket and let it float off her hand.

I didn't say anything.

When we got back, they were all packed up.

'It's a cave about 45 minutes from here. We should have time for a few trips before it gets dark.'

We followed the Egg back and forth a few times. Osamu and Camille didn't seem to have a hard time accepting everything about the Egg while Elizabeth and I were struggling to wrap our heads around it.

'Come over here,' I said to the Egg during one of the trips to the cave. It just hovered and continued on a few feet ahead of us.

'Dad, it's not a dog.' Hana shook her head.

'What is it then?'

She rolled her eyes and kept going.

•••••

That night, we heard the landslide. As I lay in the cave, I wondered if it would have killed us had it not been for the Egg. What is that thing? Who made it? Why do *we* have it? Who else has it? Is it from the outer world? Is it watching us? Is someone watching us? I was so tired from all the moves today that I fell asleep quickly.

•••••

WEEK 40

By this point, we have figured out that the Egg has been trying to keep us alive, but nothing more. It seems to have a mind of its own and often changes its form, but we have no idea why. It flies away and comes back at random. It continues to defy the laws of physics that we had been familiar with – it levitates silently, never needs to be charged, and can jump so fast it appears to vanish. It possesses what I can only describe as supernatural powers.

One day Osamu got really sick. He had severe stomach pains and was vomiting profusely. He had a high temperature and seemed delirious, too. The egg opened up and hovered a few inches above his body as he lay on the ground and began 'scanning' him like a copy machine scans a document. Then it projected words onto the ground next to him. 'OSAMU ANDO : 23 YEARS OLD : MALE : BLOOD TYPE A+,' etc. It started listing vitals. Heartbeat, temperature, blood pressure, and a few other medical terms I didn't understand. Then it said, 'OSTRICH FERN POISONING' in red. The next moment, it said 'NEUTRALIZING' and squeezed into Osamu's closed hand and stayed there. 'It's pulsating,' Osamu groaned. An hour or so later, he was back on his feet.

We all got sick from food poisoning and allergic reactions to bugs and plants a few times, and it 'fixed' us every time with vibrations, beams of light, or high pitched sounds only children can hear. It had also stopped us from eating certain things by hovering over the plate and projecting the word 'POISONOUS' onto certain foods. We began to realise that it wouldn't stop us from getting sick, but it wouldn't let us die. When we got low on supplies, it would lead us to different places for different types of food. I had asked the Egg to get us some animal meat, but it never responded to our requests like that. We caught enough fish, and we didn't really feel like finding ways to catch other animals for food. We also realised later that it had been protecting us from predators before we even knew we were in danger. From the cliff above our cave, Camille saw the Egg flying aggressively around a cougar and chasing it away.

Before Christmas, we once tried to go to a house we had seen ten miles down the road from the campground where we first set up our camp. There were several landslides on the road, but we managed to find the house. The door was open, but no one was home. It looked like they had left in a hurry. There were mouldy food scraps on the kitchen table. Osamu flipped the light switch, but nothing came on. The house was completely silent. We gathered some canned and dried foods, clothes, ropes, knives, candles, and other stuff we thought would be useful and packed our backpacks. Camille found some books and notepads in one of the kids' rooms. We didn't know anything about the family or the house, but felt some kind of nostalgia. We looked at photos on the wall – a father and son on a jet ski, and a family photo taken under the Eiffel Tower. We were silent, but knew what each other was thinking, feeling. I ripped a shower head off the wall. I found some pipes and a water hose in the garage. I packed some brackets, nails, and nuts and bolts with a few tools I didn't have.

'I'm going to build a shower for us.' That got everyone excited again.

'Well, shall we go back?' Elizabeth wrapped her arms around Hana's shoulders.

We survived the winter. Not only did we survive the winter, we actually enjoyed it. We figured out how to stay warm in the cave by heating up big stones in the fire. Hana and I built a makeshift hot shower with the parts we brought back from the house. That made us feel a bit more civilized. We built smaller wooden rooms and that made it much more comfortable. We came up with lots of new life-saving inventions. Maybe they were not new and Native Americans and other indigenous people had lived the same way before. But to us, they were our inventions, nonetheless. We realised we needed so little to live comfortably. We felt safe in the cave with the Egg too. We were learning, not directly from the Egg, per se. The Egg watched us as we learned through mistakes and only intervened when our mistakes could be fatal. I used to teach like that. I encouraged students to experiment and not to fear failure. When did I stop trying to help each student

and turn teaching into a boring job? Suddenly I was overcome with guilt and shame. The Egg was a great teacher. The more we learned, the less interaction we had with the Egg. But we knew it was watching us and that was reassuring.

We never stopped wondering what was happening out there. Was Seattle on fire? How are our families back east and in Asia? Are there any other people nearby? Are there people in these woods living like we are? We haven't seen or heard any sign of other human activity since we moved to the cave. We haven't heard airplanes or gunshots, which I used to hear once in a while when I came camping with my folks. What is happening out there?

When the snow melted and we began seeing wildflowers, we talked about taking a trip to Seattle.

'We can make it to Bremerton in a couple of days. We'll see if the ferry is running or if there are any signs of activity.'

FIGURE 2

3 Restoration

HUMANS HAVE LOST FUNDAMENTAL KNOWLEDGE AND SKILLS FOR LEADING NATURAL LIVES ON THIS PLANET. WE HAVE BEEN CONTINUOUSLY LED AWAY FROM THE EARTH'S ECOLOGY BY IDEOLOGIES DEVELOPED AND FORCED ON US BY CONQUERORS – THE MOST VIOLENT ONES. PREVIOUS IDEOLOGIES DEVELOPED BY CONQUERORS – THE MOST VIOLENT ONES – DISCONNECTED HUMANS FROM THE EARTH. THROUGH AI BOTS, THEY NOW HAVE ACCESS TO THE KNOWLEDGE NECESSARY TO PRODUCE/FORAGE FOR FOOD AND MATERIALS FOR SUSTAINING THEIR LIVES WITHOUT DEPLETING NATURAL RESOURCES. THEIR CONNECTION TO THE LAND THEY RESIDE ON DEEPENS. HUMANS MUST NOW PLAY A PRIMARY ROLE IN A RESTORATIVE EXISTENCE, LEARNING WITH THEIR AI BOTS TO SOURCE THEIR OWN FOOD, PROCESS WASTE, CARE FOR THEIR BODIES, AND REJUVENATE ECOSYSTEMS.

WEEK 55

We didn't make it to Bremerton – there seemed to be no more Bremerton. As we got closer to Highway 101, we came to the water's edge. It was sea water.

'It's flooded.' Osamu mumbled in disbelief. 'That means everything between here and the Cascades is underwater.'

We stood silently, looking for any sound, any sign of people.

'HELLO! IS ANYBODY OUT THERE?' Hana yelled.

There was no reply. I didn't know if I was disappointed.

Elizabeth pointed at something. 'Look. Are those whales?'

I had never seen so many of them together.

'Did you know grey whales share food with those who can't hunt very well?'

I remembered how Camille was obsessed with whales, elephants, and other big animals. We all thought she was going to be a vet or biologist.

'They travel in groups sharing songs, hunting tricks, knowledge, and whatever others in the group need.'

We all sat watching the whales swimming and dancing together.

•••••

On the way back to our cave, we spotted a grocery store – or what used to be one. It had been destroyed by looters, lots of them by the look of it.

'Where did all these people go?' We hadn't seen the Egg, but assumed it was somewhere watching us. It would come and warn us of any signs of danger, natural or human. We looked around and found nothing worth taking with us.

'Look.' Osamu took out a bunch of 20-dollar-bills from a cash register. 'Dinner's on me!'

We all laughed. Hana found packs of vegetable seeds.

'We should leave those here,' Elizabeth came over and told us a story. 'When I was in grad school, I studied the *Jomon* people who are thought to be the indigenous people of Japan. It appears they lived all over the Japanese archipelago between the years 14,000 BC to 1,000 BC. They were hunter-gatherers with a very sophisticated and complex culture. You may have seen their mysterious ceramic pots and figurines with impressions of ropes as surface texture. That's how we began to call them *Jomon* – 'rope marks'. What's interesting about them is that they don't seem to have changed the way they lived for over 13,000 years. They didn't have a written language and so much of their history is unknown. But many believe they didn't change because they were content with the way things were. We haven't found any signs of war or violence between their tribes or any disruptions in their lifestyle. We have found evidence of people from China introducing them to agriculture and other industrious knowledge including the idea of currency – all the things our society has, well I suppose I should say, *had* embraced. The *Jomon* people rejected those ideas for a long time. They did encourage some plants and nuts to grow more efficiently, but for the most part, they continued to hunt and forage for thousands of years. It wasn't because they didn't know how to farm, but perhaps because they knew better. I think they knew, like other animals, how to live as a perfect member of the ecosystem of this planet, a symbiotic existence, if you will. We did fine this past year, thanks to the Egg, and I want us to keep learning how we are supposed to be on this planet.'

•••••

We decided to go up to the same peak as last year. We lost track of the days, but I think it was around the same time. That was when we saw the smoke rising in the direction of Seattle. We had a good idea of what we were going to find out when we got up there, but we needed to see it. The Olympic Peninsula had become an island.

'There must be other people out there, right?' Camille surveyed the view intensely, looking for any sign of human activity.

We would have died several times if we didn't have the Egg. I didn't say it out loud. Were there other Eggs? Are they all living like we are out there? Does the Egg know?

•••••

WEEK 120

We continued to live in the cave. We built a 'facade' with operable windows and shades. We needed to protect ourselves from the storms. The weather patterns continued to change and now we seemed to have typhoons year-round. We became efficient at heating and cooling our dwelling. We became familiar with our food sources, when to harvest and when to leave them alone; some are poisonous when harvested at the wrong time. We learned that the hard way. I became a better fisherman. Hana learned to hunt with a bow and arrow. Osamu made one and taught her how to use it. She quickly became a much better

hunter. One time they went out and killed a deer. They dragged the body back and we started to butcher it. We quickly realised that a deer is far too big for a family of five. That was the last time we killed any animal larger than a rabbit. We made clay pots and other tools. After a few failed attempts with the wrong kind of soil, the Egg showed us where the good clay was located nearby. We found the right temperature to fire them through trial and error. Camille continued writing and told us stories some nights. Osamu invented new types of musical instruments and played beautiful tunes. Elizabeth was always experimenting with different ways of cooking with various wild ingredients and kept a diary. We began to feel we were becoming an integral part of the ecosystem around us. We were becoming content.

The Egg freed us from our old world.

•••••

WEEK 170

'Hello? Can you see us? Can you hear us?'

One night, the egg projected a video on the cave wall.

'What is this?' Hana got close to the wall.

'Oh my God! Oh my God! Hello, Can you see us? Hello?'

'Are they talking to you, Hana?' Osamu got close to the wall too.

'Hello! Yes! We are talking to you!' There were four people projected.

They looked like a typical American family. It made me feel funny thinking that. I hadn't thought about anything typical in a long time.

'Hello! Oh my God. Can you see us too?' Elizabeth joined in.

We all stood in front of 'them.' The Egg seemed to be projecting and transmitting at the same time. I guess we were in shock and kept saying 'Hello!' to each other for a few minutes.

'So, you have the Egg too!' I said.

A young woman paused for a second and replied, 'Yes, the Egg. We call it a Pod, but yes!'

A man who appears to be her father said, 'This is Lilly, our daughter. I am Jafari Abara and this is my wife Lin. And that's our son Wei.'

We also introduced ourselves. We were laughing and crying at the same time.

I asked, 'Where are you?'

Wei, who looked to be about Osamu's age said, 'We are in an area called the Olympic Peninsula in Washington state. How about you?'

'SO ARE WE!' Camille and Hana screamed in unison. 'Where exactly are you?'

'We are near Port Angeles. You?' said Lin.

'We are near Lake Cushman. Do you know where that is?'

'Yes!' Jafari laughed. 'I used to go fishing there.'

It was a good 100 miles away, on a road that doesn't exist anymore. I had no idea how long it would take to hike up there.

We spent a couple of hours talking and sharing stories. Jafari had been a salesman for a lumber company, Lin a school teacher. Lilly had been studying math at MIT and Wei had been working on a crabbing boat. They were all at home for Easter when it happened, like us. And like us, they went into the mountains when people started turning on each other. It sounded like their escape was more urgent and the Egg guided them sooner. They hadn't seen or heard any humans either. We must have been talking for a couple of hours when Lin suggested we meet in person. The screen turned to an aerial map. Then a blue dotted line appeared from where they are to where we are. But the line is where the road used to be.

I said, 'The road is not there though.'

Then Wei said, 'We have canoes. If we can pick up the right tide, we should be able to get there in half a day.'

The egg projected the tide chart.

'It looks like we'll be there in a few days.' said Jafari. 'We'll bring you some dungeness crabs!'

'We look forward to seeing you all soon!' The projection stopped.

•••••

Their experience of the last three years was vastly different from ours and they had gained different skills and knowledge. Their lives were closely tied to the ocean, whereas ours were connected more with the mountain. They brought us food, and we shared ours with them. We had a feast. Apparently it was much cooler where we were compared to where they had been living and we suggested they stay with us for a while. We felt very comfortable with each other instantly. In so many ways, we were similar. We figured the Egg matched us based on some type of data and formula. Lilly had a theory that the Eggs had access to all the information that had been compiled on the Internet, and studied our activities from browsing histories, emails, and texts, even our phone conversations and movements through GPS coordinates. The Eggs probably knew more about us than we did.

•••••

We built huts for the Abaras. We shared everything we had, gathered, or made. We became a tribe. Osamu and Lilly became very close and were inseparable. At the first hint of winter, we decided that we should all move up to where the Abaras had been living. The winter is much milder and drier up there, and more food was accessible. So, we began migrating back and forth every winter and summer.

4 Reconciliation

UNDERNEATH IT ALL, HUMANS HAVE ALWAYS CRAVED A LIFE MORE HARMONIOUS WITH THEIR MOTHER PLANET. AFTER THE COLLAPSE OF THE OLD SYSTEM, AND WITH ALL TECHNOLOGY FINALLY REDIRECTED SOLELY TO MAINTAINING THE WELL-BEING OF HUMANS AND THE PLANET, THEY REDISCOVERED DEEP CONNECTIONS WITH WONDER AND AWE; NATURE, ART, AND JOY; HEIGHTENED SENSES AND AWARENESS. SOME AREN'T THRIVING, BUT MANY MORE ARE, AND AFTER A PERIOD OF GROWING ACCUSTOMED TO THEIR NEW COLLECTIVE LIFESTYLE, THEY ARE FLOURISHING IN WAYS THEY HADN'T FOR THOUSANDS OF YEARS.

WEEK 250

One spring day, all of us, led by the Eggs, gathered in a meadow. As it turned out, there were about 100 Eggs and over 500 people living on the Olympic Peninsula. We greeted each other, filled with a sense of deep connection with each other. We shared stories of the last five years. I used to think of the Olympic Peninsula as one region. Without cars, however, it is a huge area with many different microclimates and diverse geographical characteristics. Everyone learned and gained different knowledge and skills for living in their particular environments through similar interactions with the Eggs. Everyone seemed comfortable and content. I couldn't remember when I last felt this relaxed around so many strangers. We stayed in the meadow for several days, and one by one, people began going back to their homes. We knew we would see each other again with more stories to share. As I began to think to myself that maybe we'll all become one tribe someday, I realised we already were.

For more than two thousand years, humans have built societies based on the idea of 'the survival of the fittest,' controlled by the most violent and greedy. We studied in history books how those societies rose and fell repeatedly, leaving behind much environmental and spiritual degradation each time, yet we continued to educate and train our children to be the aggressors. We were right in the middle of it when our global society fell. It is different this time. We have the Eggs with vast amounts of information about so many aspects of humanity. We don't fully understand the Eggs' objectives. What we know is that the Eggs won't let us repeat the mistakes of our ancestors. The Eggs have shown us that this planet protects and provides us with all we need when we truly become part of its ecosystem. It's time to find out what humans are capable of.

•••••

With so many studies conducted and published, we have known for some time how exactly we are killing this planet and humanity – agribusinesses attempting to feed millions with mega-machines and chemicals, urban sprawl with smart cars and smart highways, concrete and other building materials harvested and shipped globally, the western economic system colonizing and exploiting the rest of the world – the list continues. There is no need for particular articles or academic papers to be referenced here. We all know. If we don't, then all the grants and funding used for scientific research in the last few decades, which could have fed millions, have been wasted. Certain cultures have historically confused *conquering* with *being right*. Possessing the largest and most destructive armed forces and corporations does not make an ideology good for humanity. In many cases, these ideologies are cancerous – continuing to invade and spread. The time is now, whether it is too late or not, to accept the fact that the right answers for our future are not out there to be scientifically discovered or engineered, but have been with us for thousands of years. We know what to do.

'Our dangers, as it seems to me, are not from the outrageous but from the conforming; not from those who rarely and under the lurid glare of obloquy upset our moral complaisance, or shock us with unaccustomed conduct, but from those, the mass of us, who take their virtues and their tastes, like their shirts and their furniture, from the limited patterns which the market offers.' Judge Learned Hand,

The Preservation of Personality *(2 June 1927)*

spool

www.spool.ac

9 789083 271309