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Castán Broto, V., Olazabal, M. and Ziervogel, G. (2024) Disrupting the imaginaries of urban action to deliver just adaptation. *Buildings and Cities*, 5 (1). pp. 199-214. ISSN: 2632-6655

<https://doi.org/10.5334/bc.456>

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Disrupting the imaginaries of urban action to deliver just adaptation

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COLLECTION:
URBAN ADAPTATION:
DISRUPTING
IMAGINARIES &
PRACTICES

EDITORIAL

ubiquity press

HIGHLIGHTS

Urban adaptation relates to how people imagine plausible and desirable urban futures. Adaptation imaginaries refer to collective representations of how society should act and towards which goal in the context of unprecedented climate change impacts. However, the existing narratives of adaptation action tend to entrench actions that may not be beneficial in the long term and may lead to maladaptation and inequities. This is the case, for example, of flood protection barriers that displace natural barriers, such as mangroves, or water distribution networks that supply water by depleting reserves elsewhere. New adaptation imaginaries will facilitate just adaptation and enable radical changes in the relationship between humans and their environment. One step to do so is to disrupt the dominant understandings of adaptation. The aim of this special issue is to demonstrate the multiple ways in which such disruption can happen. Three areas where disruption can happen are: (1) in international political narratives, (2) in the relationship between climate change and urbanisation and (3) in the implementation of action on the ground when action encounters the realities of infrastructure and service delivery. This special issue argues that the first step in delivering climate change adaptation is to foster new ways of imagining what adaptation is needed and how it should be delivered. First, there should be efforts to understand the assumptions embedded in dominant imaginaries of urban adaptation. Second, there is a need to understand how urbanisation changes how we imagine urban areas and their resilience. Third, radical attempts to reimagine adaptation are already taking place in daring adaptation practices. Fourth, disruptive frameworks exist to challenge dominant imaginaries, but there is a need for more practical, embedded experiences of urban adaptation alternatives.

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KEYWORDS:

cities; climate adaptation;
climate justice; disruption;
environmental discourses;
future visioning; path-breaking;
resilience; transformative
adaptation; urban governance;
urban planning

TO CITE THIS ARTICLE:

Castán Broto, V., Olazabal, M., &
Ziervogel, G. (2024). Disrupting
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Buildings and Cities, 5(1),
pp. 199–214. DOI: [https://doi.
org/10.5334/bc.456](https://doi.org/10.5334/bc.456)

1. INTRODUCTION

The 2022 report of the Working Group II of the Intergovernmental Panel on Climate Change (IPCC) identified urbanisation as a critical driver compounding the risks of climate change (IPCC 2022). Around 850 million people live in settlements in low-elevated coastal areas, being directly exposed to changes in sea level (Reimann *et al.* 2023). The World Health Organisation (WHO) estimates that climate change will cause 250,000 additional deaths per year from undernutrition, malaria, diarrhoea and heat stress alone, with urban areas being most at risk (WHO 2023). Yet, adaptation efforts remain insufficient to address current climate risks, let alone future ones. A recent systematic review found that most adaptation action is fragmented, local and incremental, and that evidence of risk reduction is negligible (Berrang-Ford *et al.* 2021). Moreover, a large body of evidence has documented adaptation limits, thresholds beyond which adaptation is no longer possible, in almost every aspect of adaptation, but with a noticeable absence of evidence about adaptation limits in urban areas (Thomas *et al.* 2021). There is much hope, particularly in policy circles, that transformative adaptation can tackle the root causes of poverty and inequities and advance prosperity in line with the United Nations' Sustainable Development Goals (Lonsdale *et al.* 2015). However, the evidence of transformative adaptation is scarce (Simon *et al.* 2022; Slater & Robinson 2023). Moreover, there are concerns that within current adaptation strategies, the social costs of transformative adaptation may be too high (Schipper *et al.* 2021).

The departure point in this special issue is whether asking for 'more of the same' is sufficient to address the global demands for urban adaptation. Aside from the call to every institution and every individual to take adaptation action, there is also a need to change the perspectives that frame adaptation actions. Empirical evidence suggests that there has been a homogenisation of action discourses in climate change politics (Westman *et al.* 2023). Such homogenisation may lead to repeating a restricted number of urban adaptation practices across contexts and locations, that is, 'normal', or just dominant urban adaptation. Comparative evidence suggests that current urban adaptation may not be sufficient or adequate to address the increasing risks posed by climate change (Olazabal & De Gopegui 2021). Delivering transformative and just adaptation will first require transforming dominant ways of thinking adaptation (Amorim-Maia *et al.* 2022). This task is particularly urgent in urban areas, where planning systems and urban development strategies offer opportunities to deliver practical action for transformative adaptation.

Two conceptual pillars support the theoretical contribution of this special issue. The first is the concept of imaginaries as the narratives and metaphors structuring social life. The second is the idea of disruption as a means of social change. The following section explains both theoretical concepts.

The thesis advanced through these concepts is that disrupting adaptation imaginaries may help move towards more transformative and just urban adaptation. The special issue focuses on three hypotheses about the kinds of disruptions that can change (and perhaps are already changing) adaptation practices which are discussed in subsequent sections: disruption of the international narratives of climate action; disruptions through the acknowledgement of the new adaptation demands of rapid urbanisation; and disruptions linked to the practical encounter with material realities on the ground. The papers in this special issue contribute empirical and theoretical evidence of emerging disruptions. However, as the final section of this introduction shows, further research is needed to understand how adaptation may happen beyond what is understood as 'normal' adaptation.

2. IMAGINARIES AND DISRUPTIONS

The art of imagining consists of forming mental images of the world without needing a sufficient basis to corroborate that those images correspond to factual realities. Imaginations are sets of those images, often associated with specific meanings. These imaginations are central to solving problems creatively and generating art and cultural artefacts. However, something *imaginary* exists only in the imagination and lacks factual reality. There is a gap between actual realities

and the way they are imagined. On the other hand, *imaginary* can also be used as a noun, rather than an adjective, to refer to the collective imaginations that shape social and institutional life at a particular moment in history and human thought and crystallise into shared mythologies and narratives about the present and the future.

The desire to make the world a better place generates a will to improve that is often crystallised in problematisations of existing situations, calculated responses, and a commitment to enhancing the capacities of others in attempts to regulate social life and its relationships with the world (Li 2007). This will to improve has been central to deploying climate policy, adaptation planning and articulating new forms of climate urbanism (Bulkeley *et al.* 2014; Bulkeley 2022).

Imaginaries play a crucial role in creating the conditions that generate such will to improve. Socio-technical imaginaries provide the cultural resources that mobilise science and technology in prescriptions for attainable and desirable futures (Jasanoff & Kim 2009). These socio-technical imaginaries can be thought of on a national scale, although they are not confined to it (Jasanoff 2015). For example, Jasanoff & Kim (2009) examined the socio-technical imaginaries that informed past energy transitions in the US, Germany and South Korea and observed that different perceptions of risks (manageable through technology, negotiated with different publics) underpin political attitudes towards other forms of energy (Jasanoff & Kim 2009, 2013). Adaptation planning, however, relates closely to the construction of climate change as a global issue and national responses tend to follow the decisions of international climate negotiations mediated by the United Nations Framework Convention on Climate Change (UNFCCC). Those imaginaries are thoroughly global. Moreover, many adaptation practices at the local level have been developed through international programmes, whether funded through bi- or multilateral overseas development assistance or mediated by international peer-learning exchanges, such as those mediated by city networks that follow similar imaginaries to those mobilised in the UNFCCC (for examples, see Heikkinen *et al.* 2020; and Owen 2020). Thus, adaptation imaginaries are commonly shared beyond the national scale and embedded in emerging discourses of global development that emphasise the interconnectedness of territories beyond national states (*cf.* Horner 2020).

Is it possible to transform such global adaptation imaginaries? Most analyses of socio-technical imaginaries often take these as given as they shift through dynamic historical processes. The philosopher Castoriadis (1987) deployed the concept of social imaginaries to understand the symbolic dimensions of social change. Castoriadis argues that society constructs the symbolic realm without controlling its master narrative but, at the same time, enjoying multiple degrees of freedom in modifying and appropriating that symbolic, such as in the case of language which can be used creatively in multiple contexts transgressing the grammar that makes it understandable (Castoriadis 1987). The symbolic realm emerges in dialogue with a wider landscape of imagined possibilities, many unreal, in social imaginaries. New forms of imagination expand existing imaginaries and create the potential for symbolic shifts. For example, there have been calls for generating new storylines of climate change through engagement with literary fiction or indigenous accounts of environmental change (Whiteley *et al.* 2016; Whyte 2018). Art is also seen as a means to conceive scientific narratives across multiple ways of interpreting climate change and the ways to tackle it (Olazabal *et al.* 2024).

However, in the context of urgency, the question is not only how to add to existing imaginaries but also how to change them radically. Transformative adaptation requires nothing less than a change of paradigm in the way socio-ecological relations are conceptualised and managed. It is insufficient to add to existing imaginaries: they must be shaken from the bottom up. One possible strategy is to think of disruption. The literature on socio-technical transitions has explored how relatively stable systems of technologies, institutions and social practices (called 'regimes') can change rapidly, entirely reconfiguring the relations that sustain them (*e.g.* Smith *et al.* 2005). Socio-technical regimes establish what is 'normal', but a new technology or practice may challenge what is normal and force radical change. In particular, there are disruptions that provoke a discontinuity in the way societies and economies operate, showing the inadequacy of technologies, business

models or institutions to the point that they are progressively replaced or stretched to meet the requirements of the new system (Kivimaa *et al.* 2021).

For example, early approaches to adaptation planning focused exclusively on managing risks through expert assessments, but the success of community adaptation approaches in reducing vulnerability and developing adaptive capacity transformed the dominant paradigms of adaptation towards participatory and collaborative planning approaches (e.g. Ensor & Berger 2009). Community-based adaptation disrupts the status quo by making it untenable: communities must be at the centre of adaptation. However, there is a gap between the utopian imaginations of adaptation, the consolidation of policies and prescriptions for action based on those imaginations, and the actual practice of adaptation. It would be an error to consider that the transition process is ever complete.

What are those dominant discourses that require disruption to make way for transformative urban adaptation? Is there a status quo in urban adaptation? A key challenge for adaptation is to integrate multiple perspectives to minimise unintended consequences while, at the same time, preserving a range of different values that matter for humans and ecosystems. Current governance systems tend to be limited in terms of the range of *knowledges* that can be meaningfully considered in adaptation planning (Olazabal *et al.* 2021). Planning systems tend to prioritise economic growth and short-term scales at the expense of social and equity gains (Rydin 2013). There are also historical reasons why some ways of thinking become more persuasive or prevalent, for example, with the reproduction of forms of coloniality that become embedded in institutional operations, law, and bureaucratic systems (Tamale 2022). For example, the land tenure patterns that determine who is at risk and who is not result from histories of colonial domination and privilege that existing forms of power tend to reproduce.

Other challenges embedded in urban adaptation practices pertain to multiple valuation systems and fundamental assumptions about whose knowledge is sanctioned and prioritised in urban adaptation action. What adaptation is prioritised depends on who can speak up and how. It is only through imagining what seems impossible, through asking questions such as ‘what if’, that alternate ideas about the production of knowledge and its negotiation in society can be generated.

For example, the UNFCCC negotiation treaties recognise adaptation as a global challenge faced by all with local, subnational, national, regional and international dimensions, but the default assumption is that adaptation efforts are delivered at the national level. Nation-states are not natural entities and have a history whereby specific power configurations have been established as an assemblage of competing logics (Allen 2011). Still, the nation-state is naturalised as the ‘normal’ interlocutor for adaptation action.

Recent efforts for the development of a framework to evaluate a Global Goal on Adaptation (GGA) at the COP28 in Dubai, United Arab Emirates (UAE), November–December 2023, exemplify the dominant adaptation imaginaries that influence international policy (UNFCCC 2023a). The resolution followed a series of eight international workshops to define the details of the workshops. The framework, according to the notes of the eighth workshop before the COP28 should aim to:

drive efficient adaptation action; elevate adaptation; help minimise impacts and maladaptation; signal what is needed to accelerate adaptation on the basis of national plans; and enhance the ability to track progress while avoiding reporting burdens.

(UNFCCC 2023a)

Defining appropriate targets is the basis for establishing this vision in practical terms, as they enable tracking action and inform the Global Stocktake. Following the steps of the adaptation policy cycle (Figure 1), the framework focuses on identifying key targets to assess advancements in those areas. Those targets are defined and assessed by adaptation experts, removing agency from those who do adaptation to assess and represent their efforts (Table 1).

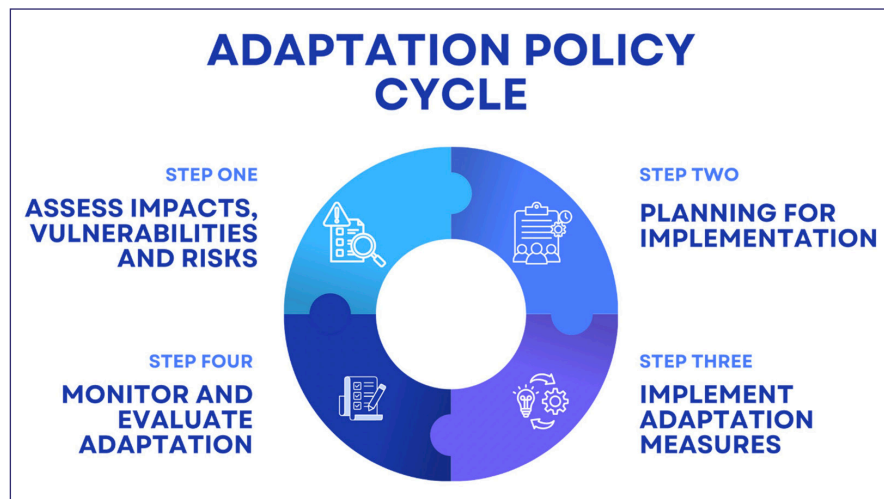


Figure 1: Adaptation policy cycle.

Source: United Nations Framework Convention on Climate Change (UNFCCC) (n.d.).

| ADAPTATION POLICY CYCLE STAGE | KEY DEBATES AND PROPOSED TARGETS |
|--|--|
| Assessment of impacts, risks and vulnerability | <ul style="list-style-type: none"> • Early warning systems, climate information services and data, and risk assessments with the goal of reducing exposure by a certain timeframe • Methodological challenges of measuring climate impacts and exposure, especially in the short term and without clear baselines |
| Planning | <ul style="list-style-type: none"> • Planning-related targets may include the formulation of national adaptation plans and planning instruments • Other indicators may focus on planning capacity, climate information systems or the process of mainstreaming adaptation in other policy domains • Clear linkage with the means of implementation • Attention to inclusiveness in the targets, e.g. through strategies for including disaggregated data, child-responsive planning, and ensuring communities' and Indigenous Peoples' consent |
| Implementation | <ul style="list-style-type: none"> • The number of implemented plans or projects for adaptation within a certain timeframe (e.g. 2030) is a necessary but not sufficient indicator • Linkages to forms of action and enabling factors or means of implementation • The limitations of simply counting the number of projects are recognised, and there is an emphasis on outcome-oriented targets such as qualitative indicators |
| Monitoring, evaluation and learning (MEL) | <ul style="list-style-type: none"> • Agreement on the need for national-level frameworks for MEL • MEL frameworks should provide clear feedback on the other steps of the adaptation cycle |
| Enabling conditions | <ul style="list-style-type: none"> • At the workshop, participants did not reach an agreement on their inclusion, pointing to important divergences in current discourses, though there was a common statement that they should focus on capacity, technology and finance |

Table 1: Proposed targets used to assess and evaluate the stage in the Adaptation Policy Cycle Stage at the 8th Workshop of the Glasgow–Sharm el-Sheikh work programme on the Global Goal on Adaptation (GGA).

Source: Summarised from United Nations Framework Convention on Climate Change (UNFCCC) (2023b).

Several assumptions embedded in this framework respond to a particular utopian imaginary of climate governance as a process unfolding over time in ordered patterns and facilitated by the alignment of different interests and perspectives, addressing expert knowledge and evaluations (Gordon & Johnson 2017). The realities of governing in place, the changing geographical realities of human settlements and the material encounters that enable seeing adaptation in action reside in other future imaginaries that could be formed through those disruptions.

3. INTERNATIONAL ADAPTATION IMAGINARIES HAVE BECOME REPETITIVE

The desire to standardise ways of doing and replicating action responds to a political need to benchmark and showcase action globally, as shown in narratives such as the efforts towards the GGA explained above. Despite the diversity of actors and stakes that take part in these international discussions and the changing uncertainties that shape them, research to date points out that attempts to facilitate narrative alignment have led to the homogenisation of urban climate discourses (Westman *et al.* 2023). Models of good adaptation internationally are displayed and shared through city networks and other international organisations, creating narratives about what action is desirable and justifiable on the ground (Gordon 2020). These models emerge from existing imaginaries about what urban futures are possible or desirable (Castán Broto *et al.* 2023). For example, nature-based solutions are prioritised because they address conflicting needs within the international climate agenda, providing climate biodiversity and societal benefits simultaneously (Goodwin *et al.* 2023). Visioning methods are increasingly receiving attention as a means to bridge multiple perspectives of shared, resilient futures (Pelling *et al.* 2024; Comelli *et al.* 2024).

Shared adaptation imaginaries are manifest in some common threads that are ubiquitous in the climate adaptation literature:

- the emphasis on a global stocktake, often overlooking the complexities involved in developing such measures
- the assumption of access to finance, regardless of the mechanisms that prevent most projects from accessing it
- the importance of learning across contexts, emphasising replicability at the expense of developing specific models that respond to the context of implementation.

These agendas are reproduced through the demands of finance structures, including reporting requirements and monitoring and evaluation programmes. Actions at the international level have ripples over national, regional and local political agendas (Venner *et al.* 2024). However, rather than a top-down translation of global discourses, this influence is exerted through the various appropriations of discourses that happen in specific contexts (Ong 2011; Tozer *et al.* 2022).

Discourse alignments in the political and scientific arenas have consolidated around a climate speak characterised by ambiguous abstractions that complicate the implementation of adaptation on the ground (Olazabal *et al.* 2024). For example, the high-level definitions of vulnerability and risk agreed upon by the IPCC create shared understandings of complex concepts. Still, these concepts are not easily operationalisable on the ground. Moreover, what is good adaptation for some might not be as good for others.

A major change in adaptation discourse in the 2000s followed the critique of disaster theory that states that there is not such a thing as a natural disaster: all disasters are produced within a set of political and material conditions (O'Keefe *et al.* 1976, Wisner *et al.* 2014). That critique has challenged technical approaches to urban resilience that rely on notions of the robustness and redundancy of infrastructures in favour of anticipatory approaches that embed resilience within communities and everyday activities (Coaffee & Lee 2016). This has led to greater emphasis on localised, community-led efforts for adaptation. However, such changes in discourses are rarely mobilised at the local level, where engineered responses continue to be prioritised over collaborative ones. For example, in Beira, Mozambique, a city exposed to deadly cyclones, engineering-led risk management techniques persist, and budget and resource constraints shape the possibilities of action. However, this critique has mostly been addressed by acknowledging the multiple dimensions of vulnerability, without engaging with the politics of risk.

Other attempts to disrupt adaptation discourses have focused on challenging urban vulnerability characterisation. Feminist and intersectionality scholars are disrupting preconceived ideas about who is vulnerable and why (Amorim-Maia *et al.* 2022). For example, experiences of community-

based risk management in cities in the Philippines show how gender dynamics shape adaptation capacities, with the burden of labour shifted to women in the context of disasters (Ramalho 2019). Another challenge relates to the attribution of responsibilities for intervention and whether local governments are adequately supported in responding to adaptation (Nalau *et al.* 2015). Environmental and climate justice ideals are also being used to redefine adaptation processes (Okamoto & Doyon 2024). These ideas may occasionally influence some actors in the adaptation agenda, but they are far from actually disrupting urban adaptation imaginaries in a deep, radical way (Teebken 2024). Ultimately, the core of dominant urban adaptation imaginaries remains unchallenged.

4. URBANISATION IS A DISRUPTIVE PROCESS

Urbanisation is a disruptive process. Human vulnerability is increasingly concentrated in informal settlements and rapidly growing smaller settlements with bigger gaps in infrastructure than larger cities (IPCC 2023). Urbanisation impacts the risk of climate change while also influencing humans' capacity to mitigate and adapt to it.

Urbanisation increases the exposure of people and assets to climate change risks (Elmqvist *et al.* 2021). In addition, urbanisation compounds the impacts of climate change, for example, by multiplying the impact of heat (IPCC 2023). Rapid urbanisation is often linked to increased environmental vulnerabilities (Almulhim & Cobbinah 2023). While an overall increase in wealth often follows urbanisation, it also leads to an increase in income inequality, so that the absolute number of people living in poverty also grows. Recent work looking at urbanisation as a multidimensional phenomenon has revealed how inequalities are created spatially, *e.g.* infrastructure inequalities (Pandey *et al.* 2022). Infrastructure inequalities are particularly important because they solidify inequalities in space over time. Urbanisation's inequalities also result in major health problems such as poor nutrition, pollution-related health conditions and communicable diseases, poor sanitation and housing conditions, and exposure to pandemics (Kuddus *et al.* 2020). Privileged groups securitise space at the expense of collective resilience, which affects everyone's liveability in the long term (Long & Rice 2019).

On top of the challenges of climate change, inequality and health, urbanisation also challenges current governance structures. Local government may lack the capacity to manage the increased dispersion accompanying the demographic and economic changes of urbanisation (Walsh 2012). For example, in the Philippines, cities such as Manila are surrounded by vibrant, sprawling suburbs characterised by diverse governance arrangements in what amounts to diverse mixes of urban and rural spaces (Ortega 2020). In most cases, the dynamics at the urban fringe shape directly the vulnerability of the people inhabiting those fringes in contrasting ways, *e.g.* facilitating the diversification of livelihood strategies while at the same time reducing the mobility of its inhabitants (Pelling & Mustafa 2010). While rapid urbanisation is associated with informal land access and lack of services, its spatial patterns are not always predictable and manageable in adaptation plans. Contrary to the assumption that links peri-urbanisation to informality, in Jakarta, Indonesia, social polarisation and rapid urbanisation have fostered the development of private-led gated housing complexes in the suburbs, while informal access to land tenure continues to be prevalent in the high-density urban centre (Zhu & Simarmata 2015). Nation-states also deploy strategies to reach local spaces beyond their control, often by imagining new ways of demarcating territories. The Chinese government, for example, has designated free trade zones in strategic cities to facilitate trade, which not only encourages further urban growth but also challenges conventional ideas about how the territory is governed and whether local priorities can be attended to (Cartier 2015).

Dominant urban adaptation imaginaries have mostly followed the insights of a large body of research on a limited number of large and connected cities, whose experiences become encumbered by international exchanges, *e.g.* through city networks (Gordon 2020). As Cerrada Morato (2024: 65) explains in this issue:

the prevalence of large cities and urban setting cases in adaptation scholarship has resulted in a bias of assuming formal ways of climate adaptation planning, as opposed to less formal, more intuitive, and de facto mechanisms used by smaller and peripheral municipalities.

This speaks to the hypothesis that engaging with the realities of adaptation or, more generally, urban development in overlooked, secondary urban centres will produce new theorisations of urban space, which, in turn, may generate new imaginaries of urban adaptation (e.g. Rusczyk *et al.* 2020). Cerrada Morato (2024) does attempt to generate new imaginations of sustainable suburbs by moving away from densification proposals and looking instead at alternative infrastructure configurations that could serve them.

In contrast, Mabon *et al.* (2024) turn around dominant understandings of urbanisation, focusing not on urban growth but on urban change and showing how such change also creates opportunities for disruption. In this case, research on the former coal mining city of Yubari in Hokkaido, Japan, reveals urban shrinkage as a moment of tension for the city but also a moment when multiple opportunities open for further transformation. In 60 years, Yubari fell to 5% of its population, forcing its inhabitants to completely reimagine their attachment to the city. Shrinkage is in Yubari, a crisis that exposes bare the workings of infrastructure and forces a moment of change (cf. Graham 2010).

This rapid reconfiguration of urban space, followed by increased exposure to climate change and exacerbated vulnerabilities, changes the current imaginaries of urban adaptation based on ideas of partnerships and the alignment of priorities across actors and levels of governance. Instead, what we observe is the increased diversification of modes of intervention in which actors enter to fill vacuums (e.g. private actors who provide service and housing in the absence of space), institutions whose interests should be aligned appear conflicted (e.g. when the national and local governments' priorities diverge), and spatial plans do not respond to the needs of new territorial configurations.

5. ADAPTATION ON THE GROUND CHALLENGES EXISTING IMAGINARIES

Current adaptation imaginaries struggle to engage with the actual materiality of adaptation on the ground. Many adaptation responses involve the built and material form, such as changing road materials or locations or adapting building design to reduce heat and flood impacts. Infrastructure constitutes a key locus of intervention for adaptation (Dodman *et al.* 2022). At the same time, urbanisation reproduces inequalities embedded in infrastructures (Pandey *et al.* 2022). Infrastructural inequalities persist over time and lock inequalities in other dimensions, e.g. constraining mobility and access to resources (Goh 2021; Pandey *et al.* 2022). Infrastructures also have a deeply political character, facilitating the reproduction of capitalist power and curtailing opportunities for alternative courses of action (e.g. Graham & McFarlane 2014).

In the latest report of the Working Group II of the IPCC, the team that wrote the chapter on cities, settlements and key infrastructure used the concept of infrastructure to unpack urban adaptation actions in practical, material ways (Dodman *et al.* 2022). At first glance, this might not be seen as a means to disrupt imaginaries. However, expanding the term 'infrastructure' to include social, ecological and grey/ physical systems has the potential to develop imaginaries that are more inclusive of materiality and address social, economic, cultural and environmental needs. As Goh (2021) outlines, understanding the interconnected and contextual nature of infrastructure across cities and scales can provide more space for contested visions of what the city might become.

One of the findings of the IPCC report is that what we call grey infrastructure (a combination of networked infrastructures and other physical services, such as localised sanitation systems or water barriers) dominates when focusing on infrastructure for adapting to climate risk in urban environments. This networked infrastructure can lead to inequality, so needs to be carefully interrogated to understand whom the network serves and who it discriminates against. For

example, the practices and operating procedures of water engineers in Tiwale, Malawi, inscribe inequality as they, for example, lower the material standards of the network in some areas and not others (Tiwale 2019). Often, best practices and recommendations for physical infrastructure are not useful to people building and rebuilding cities with whatever resources they have at hand. For example, in the aftermath of the 2019 Cyclone Idai in the city of Beira, engineers' recommendations to space beams and use specific fixing systems meant little for residents who only had access to low-quality construction materials (Schubert 2024).

Insufficient attention has been paid to the importance of other types of infrastructure for urban adaptation. Ecological or green infrastructure is rapidly becoming more popular, with donor funding supporting various efforts, including ecosystem-based adaptation and nature-based solutions. The notion of green infrastructure has become a ubiquitous means to reflect upon the role of nature in urban society. For some commentators, however, green infrastructure reflects a utilitarian notion of nature that moves beyond alternative understandings of landscapes or ecosystems. Nevertheless, the notion of green infrastructure has taken hold in urban planning discussions and increasingly resonates with international discourses of climate change adaptation and mitigation. However, securing green infrastructure can be hard as it requires new types of funding and partnerships. Thus, interventions through nature have become an important space for thinking about action and resistance to address questions of equity in climate change adaptation (e.g. Tozer *et al.* 2022; Rochell *et al.* 2024).

The move to include social infrastructure in the IPCC chapter speaks of the attempt to place it on an equal footing with physical infrastructure. Social infrastructure, in relation to climate adaptation, is defined by the IPCC as:

social, cultural and financial activities and institutions as well as associated property, buildings and artefacts that can be deployed to reduce risk and recover from loss.

(Dodman *et al.* 2022: 942)

This definition does not go as far as imagining the social networks that support urban life and as a means to counter the infrastructural violence that people live through (Simone 2004; Addie 2021), although recognising people as infrastructure would be a useful means to disrupt adaptation imaginaries and break the distinction between vulnerability and adaptive capacity.

Nevertheless, the focus on social infrastructure in the IPCC brings attention to many urban services and interventions that support wellbeing in practice, such as education and health services, and approaches to reducing climate risks, such as land-use planning and disaster risk approaches. Although this shift might be welcome from a social justice perspective, most city-level adaptation responses do not provide the same funding and support for social infrastructure for climate adaptation. In the context of disrupting imaginaries, investment and defence of social infrastructure can contribute to a suite of infrastructure types needed to support life, well-being, and resilience. Active mobilisation may be one of the pillars of such social infrastructure, as shown in the case of social movements in Atlanta, that disrupt the status quo through questioning regeneration projects that further inequalities and displace people (Teebken 2024).

Understanding the enmeshed materialities of different infrastructures is critical for ensuring more equitable urban climate adaptation that reaches marginal residents struggling to access services, and thus, a focus on infrastructure and its operation may be a useful starting point to disrupt adaptation imaginaries. Infrastructure can be a powerful convening concept if considered through a materiality lens to help (re)imagine more creative and holistic solutions to address urgent needs.

6. PAPERS IN THIS SPECIAL ISSUE

The papers in this special issue (Table 2) enable this journey by reflecting on existing adaptation imaginaries and the means of disruption, and overall, rather than mapping a roadmap for disruption, they demonstrate that disrupting imaginaries is not an easy task. In some papers that explicitly examine the notion of disruption, there is a suspicion that the modest means of

disruption on display may be more conducive to reproducing the status quo than transforming it (Teebken 2024; Castán Broto *et al.* 2023).

Thus, it is not surprising that most of the papers in this special issue are more concerned with examining the obduracy of adaptation imaginaries than with challenging them. Two papers examine the relationship between global imaginaries and their implementation on the ground. Rochell *et al.* (2024) demonstrate how international adaptation discourses may be adjusted to match practical realities. As they show, nature-based solutions enjoy considerable support in global climate change discourses. Those ideas indeed travel, but they are adapted and modified at the local level. The case of Lilongwe, Malawi, shows that as material struggles emerge, local actors deploy a range of pragmatic strategies to navigate changing alliances and opportunities. However, it appears that these adjustments leave the imaginaries untouched. Rather than showing disruption of imaginaries, the study shows how adapting existing frames and deploying pragmatic strategies reinforces and reproduces existing climate change adaptation imaginaries.

Schubert (2024) also shows how imaginaries persist over time, in this case, because of political tensions between local and national governments in the coastal city of Beira. The adaptation practices are wholly inadequate to address the material and political conditions of reconstruction in Beira after devastation by tropical Cyclone Idai, a city that has seen only modest recovery after the disaster. Donors and the economic priority of developing the port appear to have a disproportionate influence on the conditions of resilience, sometimes at odds with local experiences. In the absence of sufficient resources for actual construction and disrupted supply chains, damage surveys have not been followed by visible changes in the built environment and improvements in citizens' wellbeing. What is missing is the voice of those who, against the odds, continue life in the post-disaster context: How do they do it? How do they go about making the city and the spaces they inhabit? This is perhaps a place where new imaginaries could be generated.

Both Cerrada Morato (2024) and Mabon *et al.* (2024) explore urbanisation as a driver of disruption, in line with our second hypothesis. Cerrada Morato (2024) examines suburbanisation in a little-known context, the city of Santiago de Compostela, northern Spain. In a landmark paper, Cerrada Morato marks a shift in imaginaries from an understanding of the suburbs as a fixed, homogeneous category between urban and rural whose challenges have to be resolved through growth strategies, state-led infrastructure provision and densification to a new imaginary of the suburb as a dynamic category beyond the urban and rural dichotomy, with heterogeneous forms of organisation and governance, that required hybrid forms of infrastructure provision and diverse lifestyles. In the case of Santiago de Compostela's suburbs, some of these imaginaries are already put into practice in unexpected adaptation alternatives, particularly transforming lifestyles.

Mabon *et al.* (2024) situate their research on the former coal mining city of Yubari in Hokkaido, Japan, to examine how shrinkage created opportunities for transformative adaptation. In this case, communities have increasingly gained access to local governance, influencing sustainability policies for shared futures but also bringing forward the historical legacy of mining on which the community was founded. The research found that place attachment, the emotional bonds that link communities to the places they inhabit, can both enable and disable action and thus, it should be integrated into transition strategies.

The third hypothesis emerges in contributions that reflect on the fundamental notion of disruption. Teebken (2024) reflects on disruption as a mechanism to challenge path-dependencies. The paper follows the argument of there being different forms of disruption, whether this happens: from above, when governments or powerful economic actors foster disruption as a means of creative disruption; from the middle, when different actors aim to challenge governance regimes; and from below, when activist groups and social movements challenge ongoing injustices (Chua 2023). Teebken (2024) finds all these forms of disruption operating in the greening policies and contestations in Atlanta, paying particular attention to the social movements that contest the growing militarisation of the city while also planting trees. The lesson from Teebken's analysis is that only the third form of disruption has the potential to challenge adaptation imaginaries in a meaningful way, e.g. by showing the connections between racial discrimination and ecological exploitation.

Castán Broto *et al.* (2023) examine the evolution of urban climate action discourses as a trajectory that engages with multiple contradictions that cause disruptions. Their analysis also questions the notion of disruption, arguing, in dialogue with Rochell *et al.* (2024), that practitioners already mobilise forms of action that can be considered radical (e.g. tackling structural oppression through localised activities), while, on the other hand, there is a need for a reflection on how the incremental challenges hegemonic discourses, by simply enabling people excluding from those discourses to endure. While their contribution speaks to the hypothesis of the disruption of global imaginaries of urban adaptation, their engagement with the practicalities of action highlights the material component of adaptation and how different ideas of infrastructure and service provision are deployed in practice.

The final two papers in the special issue actively attempt to disrupt existing imaginaries, offering processes and frameworks for doing so.

Comelli *et al.* (2024) make a provocative proposal to activate a technique called normative future visioning (NFV) as a method to reveal the diversity of desired end-states and pathways that would represent good urban futures for different actors. At the core of this strategy is the deployment of critical urban pedagogies that deploy a non-hierarchical system of urban learning building on emancipatory thought, such as the Freirean tradition of critical learning and black feminists' insights on emancipatory learning (hooks 2014). While the paper presents a framework for thinking NFV, it is grounded on a multi-country experience across different cities, which shows that the real work starts when participants stop discussing generalities and principles and start to reflect on the specific actions that have to take place and how.

Okamoto & Doyon (2024) also offer a framework for rethinking existing frameworks for climate adaptation, this time focusing on systematising ideas of justice. The paper presents, in effect, a six-step tool that mobilises theoretical concepts of procedural, distributive, recognitional, intergenerational, and epistemic justice through a series of practical questions that can be used to design and evaluate planning processes and projects. From asking practitioners to map who is involved in the project and who actually has the power to make decisions about it to including reflection on different, lived experiences of risk, the framework is a worthy complement of existing adaptation practices and could contribute to shifting dominant imaginaries by putting justice at the centre of adaptation practice.

| AUTHORS | TITLE | DOI |
|---|---|---|
| V. Castán Broto, L. Westman & P. Huang | How hegemonic discourses of sustainability influence urban climate action | https://doi.org/10.5334/bc.390 |
| L. Cerrada Morato | Suburban climate adaptation governance: assumptions and imaginaries affecting peripheral municipalities | https://doi.org/10.5334/bc.381 |
| T. Comelli, M. Pelling, M. Hope, J. Ensor, M. Evangelina Filippi, E. Yahya Menteşe & J. McCloskey | Normative future visioning: a critical pedagogy for transformative adaptation | https://doi.org/10.5334/bc.385 |
| L. Mabon, M. Sato & N. Mabon | Urban shrinkage as a catalyst for transformative adaptation | https://doi.org/10.5334/bc.395 |
| T. Okamoto & A. Doyon | Equity and justice in urban coastal adaptation planning: new evaluation framework | https://doi.org/10.5334/bc.377 |
| K. Rochell, H. Bulkeley & H. Runhaar | Nature for resilience reconfigured: global-to-local translation of frames in Africa | https://doi.org/10.5334/bc.379 |
| J. Schubert | Maintaining a city against nature: climate adaptation in Beira | https://doi.org/10.5334/bc.378 |
| J. Teebken | Disrupt and unlock? The role of actors in urban adaptation path-breaking | https://doi.org/10.5334/bc.383 |

Table 2: Articles in this special issue, 'Urban Adaptation: Disrupting Imaginaries & Practices', *Buildings & Cities* (2024), 5(1), guest editors Vanesa Castán Broto, Marta Olazabal and Gina Ziervogel.

This special issue also suggests that while there is a certain consensus about the need to disrupt urban adaptation imaginaries, more work is needed in this area to reflect upon what is being disrupted and how. Realising the urgent need to respond to climate change is disquieting because it finds humans in a condition of scriptlessness (Smith *et al.* 2014). While many options exist to respond to climate change and advance climate adaptation, how to deliver those responses requires further examination and the courage to develop new scripts beyond those which have led to the current situation.

Generating new imaginaries can be thought of as akin to a process of scripting in which new instructions are generated and shared. However, human societies are not computers that follow precise algorithms. Instead, those scripts need to be open and permeable to reimagination while responding to multiple stakeholders' distinct needs, sometimes conflicting.

First, we suggest that there is a need to continue exploring the operation of existing urban adaptation imaginaries as they encounter the realities of implementation on the ground. Like Tozer *et al.* (2022) we find that the analytical tools of the policy mobilities literature have not been sufficiently mobilised to explore climate change debates. Following the tradition of the ethnography of infrastructure (Star 1999), there is considerable potential in examining how it mediates the material translation of adaptation discourses. In particular, practices of building and rebuilding continue to be central to understanding adaptation in practice (Schubert 2024). These research programmes will contribute to teasing out the fundamentals of existing urban adaptation imaginaries and can guide the negotiation of the basis of key policy tools such as the GGA.

Second, there is a great need to understand how urban change influences adaptation possibilities while leaving behind simplistic notions of urbanisation as a homogenous process. Two papers in this special issue emphasise the heterogeneity of urbanisation processes, highlighting how spatial transformations bear a direct influence on adaptation options and possibilities (Cerrada Morato 2024; Mabon *et al.* 2024). There is a strong possibility that new theorisations may emerge from underexplored territories, particularly in relation towards the limits of formal responses to deliver urban resilience.

Third, when the papers engage directly with the concept of disruption, they appear to suggest that, despite its currency in current climate change adaptation debates, the notion of disruption may be a distraction in examining how imaginaries actually change. Clearly, disruptions play a role in the local politics of climate adaptation (Teebken 2024) and the management of discursive contradictions (Castán Broto *et al.* 2023). But changes in imaginaries appear to result from a continued engagement with the process of change, in which disruption may be welcomed and crucially encouraged by the powers that be as a means of reproducing the status quo.

Fourth, this special issue contributions welcomed that aimed to disrupt active engagement with existing frameworks. Critical pedagogies and climate justice approaches are promising, and they clearly offer practical ways to challenge existing ways of imagining the realities of adaptation (Comelli *et al.* 2024; Okamoto & Doyon 2024). What is needed now is practical examples of applying such innovative frameworks in policy and practice, together with new insights about the practice of adaptation that show things that work and things that do not. Or as the poet John Keats (1819: 638) wrote in *Ode to a Grecian Urn*:

Heard melodies are sweet, but those unheard


Are sweeter; therefore, ye soft pipes, play on;

ACKNOWLEDGEMENTS

The editors thank all the contributors to the special issue and the many reviewers who supported it, as well as Richard Lorch who patiently supported the editing process.

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COMPETING INTERESTS

The authors have no competing interests to declare. VCB is a member of the journal's editorial board, however they confirm they were not involved in any of the editorial and decision-making processes with regard to this manuscript. The manuscript received no preferential treatment from the journal as a result of VCB's position.

FUNDING

This special issue represents a collaboration between two projects funded by the European Research Council: Low Carbon Action in Ordinary Cities (LOACT) (grant agreement number 804051, PI: Vanesa Castán Broto) and IMAGINE adaptation (grant agreement number 101039429, PI: Marta Olazabal).

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TO CITE THIS ARTICLE:

Castán Broto, V., Olazabal, M., & Ziervogel, G. (2024). Disrupting the imaginaries of urban action to deliver just adaptation. *Buildings and Cities*, 5(1), pp. 199–214. DOI: <https://doi.org/10.5334/bc.456>

Submitted: 10 May 2024

Accepted: 15 May 2024

Published: 14 June 2024

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