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Urban climate resilience under racial capitalism: Governing pluvial flooding across Amsterdam and Dhaka

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ABSTRACT

This paper situates climate resilience as a solution to urban flooding under racial capitalism by examining its implementation across Amsterdam, the Netherlands, and Dhaka, Bangladesh. The necessity for cities to enhance their climate resilience in the face of urban flooding has become a dominant refrain in the global governance of climate change. This is the case in both the Netherlands and Bangladesh, locations that are respectively and divergently framed as global "masters" of water management and needy "apprentices" requiring international guidance on flood control and economic development. I place these two sites in conversation with one another to break down constructed ontological and epistemological divides across the global North and global South, drawing attention to the relationship between contemporary urban climate resilience policies and broader histories of socio-ecological injustice under racial capitalism. I argue that urban climate resilience policies across Amsterdam and Dhaka renegotiate and reconfigure techniques, practices and ideologies of racial and class-based inequality in response to threats and insecurity posed by climate change within and across urban scales. Looking across Amsterdam and Dhaka, I demonstrate that climate resilience policies primarily aim to protect status quo forms of capital accumulation at the urban scale rather than enact comprehensive climate adaptation measures. As a result, the ineffective and inequitable nature of resilience continues to support highly racially uneven urban socio-natures across the global North and global South, enabled by racist imaginaries where communities in the global South – particularly the urban poor – are framed as being undeserving of environmental justice.

1. Introduction

The Dutch solution to floods: live with water, don't fight it.

- McVeigh, 2014

Bangladesh flood victims remain in urgent need of assistance.

- IFRC, 2007

The Dutch Have Solutions to Rising Seas. The World Is Watching.

- Kimmelman and Haner, 2017

[Bangladesh:] The nation learning to embrace flooding.

- Imtiaz, 2020

Bangladesh resembles a Netherlands with neither wealth, strong governance, nor the 40 years of time that the Dutch took to implement their Delta Plan.

- Kuper, 2020

Urban pluvial flooding – including flash floods from worsening cyclical monsoons and novel forms of cloudbursts or storm surges – is an increasingly common and devastating global environmental hazard driven by climate change (Nkwunonwo et al., 2020; van Dijk et al., 2013). Inadequate urban flood control in the global South has been long understood by mainstream policymakers as a product of underdevelopment and improper planning requiring sustainable development and risk management policies (Jiang et al., 2018; Mark et al., 2018; UN-Habitat, 2020; World Bank, 2013). As rising global temperatures intensify and enhance the volatility of rainstorms globally, however, devastating and recurrent pluvial floods in the global North have interrupted this narrative, cementing urban flooding as a contemporary global environmental crisis.

The necessity for societies to enhance their climate resilience in the

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face of urban flooding has become a dominant refrain in global governance (Pelling, 2011; World Bank, 2013). Resilience is referred to as "the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change" (IPCC, 2007, p. 86). Climate resilience intends to equip all societies to better cope with environmental hazards by empowering individuals and communities to prepare for and manage the socio-economic and socio-ecological shocks posed by climate change (World Bank, 2009). Further, as a malleable and indeterminant concept, climate resilience was also built to be applied across diverse contexts. Indeed, a suggested benefit of climate resilience is the flexible approach to environmental governance it offers, enabling societies to work towards achieving collective climate adaptation by managing local risks and vulnerability while pursuing sustainable forms of economic growth.

This paper critically interrogates the effectiveness and equity outcomes of climate resilience as a global governance solution to urban flooding under racial capitalism (C. J. Robinson, 2000).[1] I do so by examining the implementation of climate resilience initiatives across and within two cities grappling with urban flooding in the context of climate change: Amsterdam, the Netherlands and Dhaka, Bangladesh.[2]

I argue that materially uneven urban socio-ecologies and conventional understandings of which groups are (un)deserving of environmental care and protection across the global North and global South are historically produced hand-in-hand under racial capitalism. Upon this backdrop, contemporary climate resilience policies across Amsterdam and Dhaka represent governance sites where techniques, practices and ideologies of racial and class-based inequality are renegotiated and reconfigured in response to threats and insecurity posed by climate change within and across urban scales. I demonstrate that in both Amsterdam and Dhaka, climate resilience policy is ineffective and inequitable; in these cities, resilience is primarily meant to protect status quo forms of capital accumulation at the urban scale rather than comprehensively curb pluvial flooding. In historically and contextually situating resilience under racial capitalism in Amsterdam and Dhaka, I draw out how the ineffective and inequitable nature of resilience continues to support highly racially uneven urban socio-natures across the global North and global South, enabled by racist imaginaries where communities in the global South – particularly the urban poor – are framed as being undeserving of environmental justice.

Racial capitalism refers to a theory whereby racism is a "structuring logic of capitalism" and as such is a social process fundamental to extraction processes in line with other cleavages of inequality including class and gender (C. J. Robinson, 2000; Pulido, 2017, p. 526).[3] To pursue my argument, I situate climate resilience policies in Amsterdam and Dhaka within historical political and economic relations of power under racial capitalism that have produced uneven urban spaces, global capital accumulation processes that involve race-making practices and a highly uneven climate crisis most severely affecting racialized peoples in the global South (Danewid, 2020; Heynen, 2016; McKittrick, 2013). To understand how racial climate inequalities on a global scale are (re) produced and justified, I draw on Robbie Shilliam's (2018) theorization of the racial dynamics involved in determining what groups are (un) deserving of social welfare.

In situating climate resilience under racial capitalism, I look to understand its enaction and outcomes in a global sense. This outlook contributes to scholarship investigating the racialized dimensions of urban resilience policy (Bonds, 2018; Derickson, 2016; Grove et al., 2020a, 2020b; Ranganathan and Bratman, 2021), which, thus far, has largely focused on empirical examinations in the United States. The above work meaningfully grapples with the extent to which resilience policy can engage with and resist racial dynamics of power within American cities. By contrasting cases outside the United States across the global North and global South, however, I seek to draw attention to the relationship between contemporary urban climate resilience policies and broader histories of socio-ecological injustice under racial capitalism. In so doing, I additionally contribute to scholarship engaging with the colonial politics of climate change and environmental racism across the global North and global South considering how material inequalities and racist imaginaries of the (un)deservingness of environmental justice are renegotiated and reproduced through resilience policies (Gahman and Thongs, 2020; Gonzalez, 2021; Perry, 2020; Pulido, 2016; Sealey-Huggins, 2017). To approach the problematique of climate resilience under racial capitalism from a macro perspective, I compare two cases across the global North-global South divide. In undertaking this unconventional approach to examining climate resilience, I demonstrate how climate resilience policy is part of broader processes of production and contestation of racialized and class-based socio-ecological insecurity in a global sense; *both* cases of Amsterdam and Dhaka demonstrate that each city and its climate outcomes is materially and ideationally constructed under racial capitalism, while at the same time producing historically-contingent outcomes (cc. Robinson, 2015; Elwood et al., 2016; Gillespie & Mitlin, 2023).

The paper is structured as follows: Section II describes how climate resilience is enacted in both Amsterdam and Dhaka, prefacing a discussion in Section III of how I approach a comparative examination of climate resilience *across* Amsterdam and Dhaka. Section IV situates climate resilience under racial capitalism at the urban scale. Section V examines the historical socio-ecological processes upon which climate resilience maps onto in Amsterdam and Dhaka to understand the contemporary material and ideological outcomes of the policy's implementation across these cases, and Section VI concludes.

2. Enacting climate resilience across Amsterdam and Dhaka

Climate resilience policy is intended to help urban municipalities better prepare for, adapt to and bounce back from the socio-ecological risks posed by pluvial flooding. In the context of climate change, both Amsterdam and Dhaka face novel and intensifying forms of pluvial flooding and both cities have implemented resilience initiatives at the urban scale in response.

Amsterdam, alongside many other cities in the global North, has only more recently become aware of its vulnerability to pluvial flooding in the context of climate change. While the Netherlands is world-renowned for managing flooding from rivers and the sea (Kimmelman and Haner, 2017), pluvial flooding is seen to be a novel threat that the city is inadequately equipped to address (Waternet, 2018). In 2014, Amsterdam experienced its first contemporary cloudburst – a sudden and extreme form of precipitation – from climate change. In this event, 90 mm of rain fell on the city in under an hour and a half, far more rain than the city's sewage system was equipped to bear at the time, leading to damage, disruption and calls to action (Waternet, 2018, p. 31). Further

[1] As race is a historically contingent social construction expressed as a material social reality and an embodied experience (Wilson, 2012), imaginaries of race determine real racialized social orders including in the realms of labour, capital, and the environment (Gilmore, 2007; Bonilla-Silva, 2014; Tilley and Shilliam, 2018). Racialization is defined as, "the way in which racist attributes and hierarchies come to determine the everyday meaning and common sense of an entity or phenomenon" (Shilliam, 2018, p. 4).

[2] These cities, as well as other geographical locations referenced in this piece, are ordered and presented in an alphabetical manner when listed.

[3] Feminist political economists also have long demonstrated the inherently gendered division of labour created violently in the establishment of capitalist social relations, particularly regarding the relegation of social reproduction into the home, alongside its devaluation (Federici, 2004). The aim here is not to erase or downplay gendered hierarchies of power that similarly drive global capitalism and shape race-making practices in the global political economy. Rather, my aim is to unpack – at a macro scale – the racial material and discursive relations of power structuring the socio-ecological governance of urban flooding and its uneven outcomes across the global North and global South.

catastrophic pluvial flooding events – including the devastating July 2021 European floods that led to more than 200 deaths in Netherlands-adjacent Germany and Belgium – has furthered awareness regarding the severity of the threat of the climate crisis.

Conversely, Dhaka has long experienced yearly flooding during the monsoon season. Locals refer to pluvial flooding as 'waterlogging,' indicating that water is stuck due to an inability to drain from land surfaces. In the context of climate change and urban land development practices, however, waterlogging has become more extreme in the city (Md Jahangir Alam, 2014; Karim and Mimura, 2008). Although Dhaka has experienced many historic floods – notable contemporary floods occurred in 1988, 1999, 2004, 2007 and 2009 – pluvial flooding is now increasing in frequency and intensity. Most recently in 2020, Bangladesh made international headlines when a massive flood event caused more than one-third of the country to sit under water, waterlogging more than 1 million homes (Dhaka Tribune, 2020; UN, 2020). The outcomes of heightened urban flooding in Dhaka are highly uneven: the city's urban poor, living in informal housing, experience the most negative outcomes from worsening waterlogging, including water up to their waists in their dwellings, interruptions to their livelihoods, threats of food and energy insecurity and negative health outcomes including heightened risk of dengue due to sitting water (Sharma, 2021a).

Both Amsterdam and Dhaka's municipal governments have embraced climate resilience as the solution to urban flooding. In so doing, both cities have enacted climate resilience initiatives to pursue the aims of flood proofing their cities and empowering urban residents to better adapt to climate change.

2.1. Amsterdam Rainproof

Amsterdam established its municipally-led climate resilience program in 2014. Titled *Amsterdam Rainproof*, the program is executed through a locally led partnership between Gemeente Amsterdam (the municipality) and Waternet, the water management entity serving Amsterdam and its surrounding region (Waternet, 2018).

Amsterdam Rainproof's enaction of climate resilience has three core areas of focus. First, the initiative prioritizes the generation of local awareness surrounding urban flooding from climate change in order to produce community and household-oriented action to curb flooding. The city carries out educational and awareness campaigns aiming to motivate communities and homeowners to further rainproof their neighbourhoods and properties. Efforts in this vein include replacing concrete garden spaces with green solutions to better to absorb water in the event of a cloudburst, or installing blue-green roofs to capture, retain, and slowly release water in the event of rain storms.

The blue-green roofs are a second cornerstone of *Amsterdam Rainproofs*, aiming to champion the development and implementation of technology-based solutions to manage heavy rainfalls. *Amsterdam Rainproof* aims to motivate individuals, public entities and private actors to adopt blue-green roofs, which appear to users as roof-top gardens but also act as sites of technologically coordinated water retention and drainage systems. Blue-green roofs have been implemented across the city through the RESILIO (Resilience nEtwork of Smart Innovative cLImate-adapative rOoftops) project, an EU-funded venture aiming to develop 10,000 m sq of blue-green roofs across Amsterdam.

Third, the initiative aims to spur private engagement on matters of climate adaptation. Supporting these efforts, *Amsterdam Rainproof* has established partnerships with garden centres to incentivize residents to create green garden spaces and engage development corporations to incorporate permeability in their real estate construction undertakings in the city.

The totality of *Amsterdam Rainproof's* flood adaptation measures intend to equip the city with the capacity to store 60 mm of rainfall in an hour by bringing together a number of actors to collectively store water on private properties and through greening areas of the city (Waternet, 2018). This vision of climate resilience to urban flooding relies on individualized, technological, privatized and commodified efforts to reach this target, resulting from a lack of state-led coordination on systemic urban planning changes to adequately adapt to flooding at the urban scale. Specifically, even though Amsterdam's sewer systems can only process 20 mm of water per hour – far below the city's overall goal of being able to process an overall level of 60 mm of water per hour – there are no plans to radically transform drainage infrastructure in Amsterdam to better accommodate for higher levels of flooding. *Amsterdam Rainproof* highlights that: "We expect the government to solve all our water-related problems. But the government can no longer handle this responsibility alone now that issues related to climate change are becoming more pressing" (Waternet, 2018, p. 20).

While *Amsterdam Rainproof* stresses individual awareness and action as well as market-based and technological flood solutions, certain public policy efforts support the city's flood proofing activities. In the initiation of *Amsterdam Rainproof*, the municipality carried out a mapping exercise highlighting key areas of flood vulnerability across the city, including neighbourhood level assessments and recommendations for protecting critical infrastructures.[4] Further, in April 2021, Amsterdam's municipality ordered for all newly built buildings in the city to have the capacity of storing 60 mm of rain per square foot of roof-top space, relying on blue-green roof technology to achieve this goal (van Zoelen, 2021). These combined efforts are intended to relieve the municipality and Waternet's sewage system of the need to drain water in the event of a pluvial flood. Instead, the initiative seeks to build urban spaces that are able to function as absorbent "sponges." The technological blue-green roof solutions support two foundational aims in Amsterdam regarding climate action: first, to maintain an image that Dutch technical solutions make it the best protected country in the world, and second, that Dutch risk management efforts protect the country's economic development at the urban scale.

Despite *Amsterdam Rainproof's* initiatives– and the associated public policies mandating enhanced water retention and drainage systems on new developments in the city – it is seen that these efforts are insufficient to adequately adapt the municipality to cloudbursts (Sharma, 2022). Primarily, *Amsterdam Rainproof's* individualized, technological, privatized and commodified efforts are largely voluntary and have been taken up in an uneven manner across the city. Second, the reliance on blue-green roofs to accommodate the city's goal of storing 60 mm of rain per hour does not account for (all but guaranteed) cloudbursts in which more than 60 mm of rain per hour falls on Amsterdam, nor rainfalls that lead to more 60 mm of rain over multiple consecutive hours. The outcome of *Amsterdam Rainproof's* climate resilience policy demonstrates a commitment to small-scale over comprehensive public policy or investment efforts to combatting urban flooding, and the continued prioritization of economic development at the urban scale (Sharma, 2022).

2.2. Dhaka's Urban Resilience Project

Dhaka's climate resilience initiative, the *Urban Resilience Project,* was established in 2015 as a development partnership program. Its first phase (2015–2019) was funded by the World Bank and was locally carried out by an established municipal *Urban Resilience Unit*, Japan's International Cooperation Agency (JICA) and the Japanese NGO SEEDS Asia (World Bank, 2017). Phase two (2019–2023) has been led by the Urban Resilience Unit (UNU) hosted by the Bangladeshi national government in its ministry responsible for land use planning in Dhaka, Rajdhani Unnayan Kartripakkha (RAJUK) (Md Jahangir Alam, 2014; World Bank, 2017).

The first phase of the *Urban Resilience Project*, similar to *Amsterdam Rainproof*, focused on mapping out Dhaka's vulnerabilities and engaging individuals and communities in climate adaptation efforts across the

[4] See this map at: https://maps.amsterdam.nl/rainproof/?LANG=en.

city. Outcomes from the project's first phase included a resilience assessment of the northern half of the city,[5] the establishment of eight emergency equipment and service hubs in communities for local use, and capacity training and educational campaigns in 12 communities on emergency preparedness and response, estimated to cover approximately 15,000 of Dhaka's 21 million residents (Sharma, 2021b). The *Urban Resilience Project's* second phase, under the leadership of RAJUK, includes a range of yet to be completed initiatives intending to further support the development of the *Urban Resilience Unit* and establish risk sensitive land use and construction practices for the city to continue to develop in a resilient manner.[6]

The outcomes of the *Urban Resilience Project* in Dhaka are seen to be crucial to support the city's ability to develop in a more climate resilient manner. Specifically, climate resilience is employed as a policy tool alongside continued forms of urban densification and expansion as a set of climate proofing initiatives aimed to enhance emergency services, initiate community-level responses and ensure new real estate and infrastructure developments have a reduced vulnerability to hazards. This vision maintains that economic growth is the core indicator of sustainable development in Dhaka. As such, enhanced environmental safety must be built in alongside the wealth generating activities supporting the city's development. Indeed, for the World Bank, the core funder of the *Urban Resilience Project* and a multilateral leader engaged in Bangladeshi development projects, climate resilience is vital for cities like Dhaka in order to specifically protect economic growth through forms of urban development. As a World Bank interview informant elaborated, engaging in climate resilience is thought to be central to open up new areas of the city to "good development" and "unlock tens of billions of dollars of real estate value." Here, the central outcomes of climate resilience primarily benefit forms of private development and wealth generation.

Who, however, is meant to actually undertake the work to actually enhance Dhaka's climate resilience? The *Urban Resilience Project's* highlights the role of individuals in terms of ensuring their own environmental safety. Climate resilience is framed as necessary in Dhaka due to the city's undemocratic nature, and is proposed to enhance distributive development opportunities so that, "that poor and marginalised people participate in, and have a greater chance of benefiting from, local development initiatives" (Ahmed, 2013, p. 248). An official of Dhaka's *Urban Resilience Unit* elaborated that the project's role was to give "the masses" disaster preparedness skills to build their capacity in lieu of public services. These same "masses," namely, the 37% of the city's residents that live and work informally as the urban poor of Dhaka, are simultaneously blamed for the wider underdeveloped and unorganized nature of the city. The World Bank highlights that Dhaka is a hotspot for climate risks, particularly due to the "densely populated conglomerations of slums and shanties are located in areas of unplanned and unregulated development" (Dasgupta et al., 2015, p. xxi). In this manner, the fault of a lack of secure flood control in Dhaka is due to the city's possessed inadequacies, a lack of good governance, and the illegal manner in which the poor live and reside in the city. This narrative erases the historical, institutional and material causes of socio-ecological inequality within Dhaka itself and the broader drivers of poverty and climate vulnerability in Bangladesh. It further works to undermine the role of state infrastructures (both physical and administrative) in addressing climate change in Dhaka by prosing small-scale community-led or development-based approaches to ameliorating the city's vulnerability to hazards in a piecemeal fashion.

[5] Note that Dhaka is administratively and geographically divided in two municipalities: Dhaka North City Corporation and Dhaka South City Corporation.

[6] See project descriptions, targets and indicators at: https://projects.worldbank.org/en/projects-operations/project-detail/P149493.

3. Comparing Climate Resilience across Amsterdam and Dhaka

The above enaction of climate resilience in Amsterdam and Dhaka demonstrates a range of distinctive features of how the policy framework is governed in each case. Each initiative involves a unique configuration of engaged institutions, there are different activities involved in the roll-out of climate resilience policy in each case, and there are starkly different stakes involved regarding the urgency of each program in terms of environmental protection and precarity for urban residents across Amsterdam and Dhaka. Despite these differences, there are similarities in the discursive, institutional and material features of climate resilience as it has been enacted in Amsterdam and Dhaka. Both of the above initiatives prioritize individual or community-led small-scale adaptations that are meant to contribute to a greater whole of resilience. Further, both projects were designed by institutions and then disseminated to urban populations in a top-down manner, emphasizing education and awareness campaigns for urban residents and communities to adapt in order to embody climate resilience. Finally, both initiatives evade more comprehensive transformational approaches to the organization of urban space and urban economic development in the face of climate crisis. The execution of climate resilience across Amsterdam and Dhaka reflects piecemeal and limited responses to the all-encompassing manner urban flooding affects each city. In short, climate resilience in both Amsterdam and Dhaka is neither ambitious nor effective in preparing either city for more numerous and intense pluvial flood events. This is particularly disturbing when reflecting on climate resilience policy in Dhaka, especially given the involvement of global development institutions that have recognized the need to address climate injustice globally due to the already existing forms of drastic environmental precarity facing urban residents (Mearns and Norton, 2010).

Given these patterns, how can we best understand climate resilience across these divergent spaces? Despite the differences across Amsterdam and Dhaka, it becomes relevant, given the sheer popularity and ubiquity of climate resilience, to examine the execution of this policy framework and the power relations involved in its execution in a global sense. Furthermore, the introductory epigraphs illuminate a dichotomous discursive framing regarding the capability of both Bangladesh and the Netherlands to control flooding in the context of climate change. Both the Netherlands and Bangladesh hold well-known relationships with water bodies and are experiencing increasing and intensifying forms of pluvial flooding in the context of climate change in their respective capitals. As such, Amsterdam and Dhaka are regularly compared and contrasted regarding their ability to face the dangers of rising sea levels, heat waves and novel and intensifying pluvial flooding (Rabbani et al., 2011; Runhaar Mees et al., 2012). Specifically, Amsterdam and Dhaka are often situated as enduring demonstrating similar events yet holding divergent abilities to cope with climate change due to expertise, pre-emptive action, resources and the capacity for good governance (Kuper, 2020; World Bank, 2009, 7).Whereas the Netherlands is seen to be an internationally renowned "master" of water management, Bangladesh is considered as a country lacking capacity, a needy "apprentice" requiring assistance and guidance to manage water in the contemporary era. Critically appraising these narratives in contrast to how Amsterdam and Dhaka governed urban flooding through climate resilience policy sheds light on how these discourses present an ahistorical, apolitical and colourblind depiction of Bangladeshi and Dutch capacities to tackle flooding.

As such, I present a comparison of these two cases in order to situate the enaction and outcomes of climate resilience across Amsterdam and Dhaka under racial capitalism. I place these diverse urban spaces into conversation with one another to recognize that urban spaces are not neatly bounded entities in the global political economy; rather, I draw out how spaces such as Amsterdam and Dhaka are both material and ideationally produced through their interrelations with each other, including on the basis of race (Massey, 1993, 2005; Harvey, 1996).

Further, I highlight how spaces undergo constant processes of reformulation through these power-laden interrelationships, which are reworked and reconfigured through resilience policy in the face of climate threats (Massey, 2005). Thus, spaces are constantly restructured – materially and ideationally – in relation to one another, including through the governance of contemporary challenges such as climate change. In this light, my approach brings Amsterdam and Dhaka, as markedly different spaces, into the same frame of analysis to understand *all* "sites in the production of global processes in specific spatio-historical conjunctures, rather than [being] just recipients of them" (Hart, 2016, p. 373).

Employing this approach to examine climate resilience allows for a globally-oriented analysis that situates this policy framework in relation to the (re)production of socio-ecological inequalities and environmental justices across colonial and geographical divides. Rather than a classical comparison, this approach provides an ability to understand the shared and distinctive processes that shape climate resilience and climate (in) justice across urban spaces, as well as the connective tissue between spaces such as Amsterdam and Dhaka under racial capitalism (cc. Robinson, 2015). Despite naturally occurring contextually specific articulations of climate resilience in each case, what becomes analytically of interest are the patterns borne out by this policy and its starkly different material and discursive outcomes in Amsterdam and Dhaka due to their experiences under racial capitalism. Doing so pushes examinations of climate change governance beyond the global North-global South binary to understand the interconnections between spaces and policies that are global in scope such as climate resilience (cc. Gillespie and Mitlin, 2023).

By approaching the material and ideological facets of climate resilience across Amsterdam and Dhaka, I highlight two simultaneous events: (1) that there are unique configurations regarding the execution and outcomes of climate resilience framework in Amsterdam and Dhaka; (2) that there are broader patterns arising from the execution of climate resilience the at the urban scale across the global North-global South divide under racial capitalism. Under racial capitalism, the global political economy is necessarily marked by uneven socio-ecological conditions, violent forms of extraction, and discriminatory ideological narratives of (un)deservingness along racial and colonial lines. In the context of novel and intensifying forms of flooding at the urban scale, climate resilience does not escape these conditions, and indeed contributes to how climate change is negotiated and reconstituted across the global North and global South. As such, climate resilience is applied across diverse urban spaces, it refracts and reflects both global and locally informed power dynamics that continue to construct spaces in relation to one another (Hart, 2006, 2016; Heslop et al., 2020; Horner, 2020; Jacobs, 2011). The examination of urban landscapes roots the analysis materially and spatially to demonstrate concrete racial inequalities ongoing in the *same* global political economy (c.f. Danewid, 2020; C. J. Robinson, 2000).

4. Situating Urban Climate Resilience under Racial Capitalism

Evidently, *Amsterdam Rainproof* and Dhaka's *Urban Resilience Project* are but two examples of the range of climate resilience initiatives being enacted globally. Indeed, because of the sheer contemporary popularity, range and variety of resilience initiatives, its meaning and value as a guiding policy concept has naturally become contested (Derickson, 2017; Grove, 2018). Smirnova et al. (2021) have described this debate as a travelling theorization of resilience built through an evolution of "trajectories of acceptance and resistance" (p. 23) in critical communities. Nevertheless, geographers largely recognize that resilience has been presented by policymakers as a "panacea to an increasing array of problems in cities," (Bonds, 2018, p. 1286), or similarly, a concept for cities to "survive and thrive" (Grove, 2018, p. 2) in the face of intersecting and intensifying socio-ecological threats at the urban scale.

A core contention regarding the continued support for urban resilience policy is its ability to support considerations of social, political, economic and environmental justice, particularly along racial lines. Critical geographers have examined the relationship between resilience and racial injustice in American cities on subjects including policing (Bonds, 2018), municipal bonds markets and uneven infrastructure (Ponder, 2021), participation in global networks such as the Rockefeller Foundation's 100 Resilient Cities (Grove et al., 2020b; Grove et al., 2020a) and the ability for resilience to support environmental justice in the face of uneven precarity to climate hazards (Ranganathan and Bratman, 2021). Ranganathan and Bratman (2021) argue that urban resilience initiatives fail to address historically informed structural inequalities that heighten uneven racialized exposure to climate change. From this perspective, resilience is seen as a colour-blind policy framework that depoliticizes the core causes of uneven racialized socio-ecological inequality, requiring vulnerable communities to constantly cope with and adapt to external threats (MacKinnon and Derickson, 2013; Bonds, 2018; Ranganathan and Bratman, 2021).[7] These authors demonstrate that resilience fails to contest how environmental injustice is deeply related to the colour-blind "obfuscation of race from the economy, that is, the racialized division of labour, wealth accumulation, property ownership, environmental degradation and global debt" (Tilley and Shilliam, 2018, p. 538). In so doing, resilience is understood to favour individual and community-provisioned market-based solutions that ultimately reproduce the status quo of uneven and racialized socio-ecological urban landscapes (Derickson, 2016; Bonds, 2018; Fainstein, 2018; c.f. Heynen, 2016).

While the above insights have been useful when examining resilience *within* urban spaces, predominantly in the US, I highlight a continuing tension in the ethos and application of resilience at a global scale that resonates when looking to Amsterdam and Dhaka. Specifically, climate resilience initiatives are deeply imbricated within and renegotiate historically-produced logics informing racially uneven urban spaces in global capitalism (Heynen, 2016, 2018; c.f. DuBois (1995 [1935]; McKittrick, 2013). Situating climate resilience at the urban scale under racial capitalism requires an understanding that the highly uneven climate crisis and unequal urban spaces across the global North and global South are co-produced, including through racialized and classed logics of extraction. In the contemporary post-Fordist global division of labour, capitalism continues to construct the (re)production of social differences in order to commodify labour power for the purposes of capital accumulation (Danewid, 2020; Lowe, 2015). To this day, the "precarious and exploitable lives that capitalism needs to extract land and labour," continuously involve race-making practices (Danewid, 2020, pp. 297-8). This is particularly visible when comparing urban spaces that are key sites of capital accumulation across the global North and global South, as they do not escape these dynamics, either in a local or global sense. As such, when resilience policies do not embed values that challenge how socio-ecological inequalities and injustices are structured, maintained and reproduced, they work to renegotiate and reconfigure ongoing socio-ecological injustices within and across urban spaces. Specifically, by prioritizing the protection of status quo forms of capital accumulation at the urban scale in both Amsterdam and Dhaka, climate resilience supports processes of capital accumulation that inform how and why urban spaces are socio-ecologically uneven across the global North and global South.

4.1. The (un)deservingness of climate justice: how climate injustice is accepted and reproduced in racial capitalism

How are the uneven dynamics produced through capital accumulation processes justified under racial capitalism? The (re)production of social difference according to race has included a manufactured moral

[7] These perspectives tend to situate resilience within a postcolonial Marxist perspective on the structures of racial capitalism.

relationship between whiteness as deserving of forms of social protection in capitalism and blackness (and brownness) as (un)deserving of such provisioning. Shilliam (2018) theorizes the deservingness-undeservingness distinction in the context of the British national welfare state and Caribbean colonies. He argues that un-deservingness was actively constructed by the British state in light of the need for ongoing cheap Black labour, or "the need for colonial development to economically benefit the imperial centre" (Shilliam, 2018, p. 70). Critical feminist and postcolonial scholars have similarly pointed to the global division of labour regime that "deploys race and racism as techniques of exclusion and control, creating expendable geographic locations (sacrifice zones) and expendable people" (Gonzalez, 2021, p. 115). Bhattacharyya (2018) demonstrates that these differentiating processes in capitalist development between white labour and non-white labour are socially enacted through racialization as a disciplinary and exclusionary process (p. 34).

The uneven effects of climate change are understood in this light, reflecting the (un)deservingness of environmental justice according to colonial, class-based and racial dynamics of power across and within societies (Bachram, 2004; Gonzalez, 2021; Perry, 2020; Pulido, 2017). Former colonies now face the most severe and frequent consequences of climate change due to both geographic location and relations of power under racial capitalism (Bachram, 2004; Sealey-Huggins, 2017; Tilley, 2020). Since decolonialization, global patterns of production and consumption are recognized to maintain global patterns of ecological exploitation and externalization, whereby the benefits and ill-effects of consumption and extraction (such as pollution, waste, environmental degradation) are felt unevenly across and within societies. It is well recognized that experiences with climate change cannot "be decoupled from either colonial history or capitalist production," denoting the systemic and uneven distribution of risk and vulnerability (Gahman and Thongs, 2020, p. 764; c.f. Bernards, 2021). Nevertheless, the dominant contrasting narratives describing the capacity of Bangladesh and the Netherlands to address flooding as separate and disconnected spaces depoliticizes and justifies socio-ecological racial inequalities that unfold in a global sense.

5. Enduring Climate Injustice across Amsterdam and Dhaka

To understand how climate resilience policies renegotiate and reconfigure uneven socio-ecological dynamics across urban spaces, I first turn to the colonial histories of Amsterdam and Dhaka. This sheds light on the material roots of racially-informed socio-ecological injustice across these spaces as well as the narratives of (un)deservingness naturalizing these injustices. Bangladesh and the Netherlands' divergent experiences both reflect the dynamics of colonialism, and their central urban hubs, Dhaka and Amsterdam, are correspondingly imbricated in global racialized and classed processes under racial capitalism. Climate resilience socio-spatially maps onto, yet obscures and depoliticizes these material inequalities conditioned through racial capitalism. In so doing, climate resilience does not engage with or address racial socio-ecological inequalities across urban spaces. Further, climate resilience policies in both Amsterdam and Dhaka rely on climate proofing activities that do not challenge the very same wealth generating activities or urban governance structures that drive climate catastrophe and uneven protection to its effects.

5.1. Racial capitalism and colonialism in Dhaka

The present-day nation of Bangladesh has been recurrently colonized, first by the Mughal Empire in the mid-16th century. As the Mughal empire declined in Bengal in the early 18th century, the British East India Company (EIC) and France's *Compagnie des Indes* – embroiled in the global colonial Seven Years' War – vied for power in the region, with the EIC ultimately winning dominance on the Indian subcontinent (Rommelse, 2020). The Dutch East India Company (VOC) was also involved in Bengal, establishing a heavy mercantile presence in the region in the early 17th century, building factories for the trade of textiles, silk, potassium nitrate, rice and opium (Rommelse, 2020; Sur, 2017). Following a disastrous military expedition in 1759 aiming to challenge the British East India Company's (EIC) hold in the region, the Dutch VOC presence in Bengal became limited, entrenching the EIC's power (Rommelse, 2020). The EIC overtook Bengal's market trade and established English agrarian systems through enclosure, building a land 'owner' and 'worker' (labour) system in the region. This system supported the increasing exploitation of rural agricultural peasants through the disenfranchisement from land and the consolidation of elite classes (Harris, 1989, p. 272; Sen, 1998). In 1858 the British Crown overtook the administration of India from the EIC, under which Bengal's economy continued to rely on agricultural exportation. British colonial rule led to the centuries-long expropriation of Bangladesh's economic wealth, and was justified in part by the construction of racist dehumanizing discourses of 'ill tempered' and 'submissive' subjects (Sur, 2017, p. 63).

The socio-environmental nature of Dhaka's inequality is intricately tied to colonial rule. In the beginning of the 20th century Bangladesh's urban population only accounted for 3% of the country's population. In the wake of the partition of India in 1947, the migration of Muslim migrants to the region (then East Bengal) resulted in the growth of urban spaces, which continued when Bangladesh won the ability to independently govern itself in 1971. By 1974, 9% of the country's population lived in urban centres, the largest of which was Dhaka (Khan, 1982). Since independence and under global neoliberal multilateral policies, economic scarcity, inequity and landlessness in rural regions of Bangladesh have largely informed rural to urban migration (Centre for Urban Studies (CUS), National Institute of Population Research and Training (NIPORT), & MEASURE Evaluation, 2006; Feldman and McCarthy, 1984). Dhaka has grown to be one of the largest and most dense urban metropoles globally; in 2022 its population reached 22.5 million, between 30 and 40% of which live and work informally. Underhoused populations have long been a feature of Dhaka – in 1974 10% of the city were then classified as 'squatters' (Islam et al., 1975 in Khan, 1982). Accordingly, there is a long history of stigmatization facing individuals and communities living in informal settlements, along class-based, ethnic and racial lines at subnational, national and supranational scales. Discriminatory framings of communities living in informal settlements as encroachers or illegal squatters renders these groups as undeserving of their right to housing. Despite the power of informal labour in Dhaka, these communities are repeatedly vulnerable to eviction and poor living conditions (Fattah and Walters, 2020; Rahman, 2001).

Environmental crises have also long plagued Bangladesh and particularly effect Dhaka, informed by colonial urban planning practices (Baffoe and Roy, 2023). This legacy has contributed to uneven spatial segregation in the city, dense underhoused communities, a lack of appropriate flood infrastructure and a built environment that has heavily encroached on waterways otherwise capable of absorbing water flow (Md Jahangir Alam, 2014; Md. Jahangir Alam, 2018; Md Jahangir Alam and Ahmad, 2010; Lata, 2020). Despite holding a long history of living with and on water, Bangladeshis are often framed as being incapable of addressing climate hazards (see epigraphs). These narratives support an understanding that socio-ecological crises in Dhaka are a product of choice-making and the inherent decisions of Bangladeshi citizens and governance makers, erasing relations of power under racial capitalism that have rendered uneven urban environments.

5.2. Racial capitalism and colonialism in Amsterdam

Similarly, the structure and economic development of Amsterdam is shaped by the Netherlands' colonial history, which also informs contemporary narratives of Dutch mastery of water due to its maritime expansion overseas. There were two state-corporate imperial wings of the Dutch Empire, both later to be subsumed by the state: The VOC was

founded in 1602 and The Dutch West Indies Company was founded in 1621, specifically to further Dutch aims of establishing a colonial empire (Atunes, 2019; Gelderblom et al., 2013; Weststeijn, 2014). Despite an aversion to acknowledging racial discrimination in the Netherlands, Dutch colonialism has forwarded racialized tropes of non-white people that lack civilization, justifying forms of oppression, exploitation, and genocide in colonies in Indonesia, Sri Lanka, South Africa and the West Indies (Suriname, Curaçao, Bonaire, Aruba, St Maarten, St Eustatius, Saba) (Blakey, 1993; Koekkoek et al., 2019; Weiner, 2014). Narratives of Dutch exceptionalism, in which the Netherlands is compared favourably to other European imperial powers as having better social, political and economic outcomes in their colonies, masks the racism embroiled in the capital accumulation processes pursued by the VOC and WIC. Indeed, the Netherlands has worked to expel violent histories of Dutch colonialism from the country's national history, and while space does not omit for a full detailed account of violence across the Dutch Empire, this includes the decimation of indigenous populations in colonies, the importation, trade and transportation of slave populations and the use of indentured labour across the VOC and WIC (Bijl, 2012; Mbeki and van Rossum, 2017; Oostindie, 2005; Worden, 1985).

Amsterdam became and continues to be the apex of the Dutch economy due to colonial ventures in the 17th century in which the city grew into a commercial hub for merchants, warehousing and information exchange and finance (De Goede, 2005; Smith, 1984). Although the Dutch VOC was not the only – nor by any means the most prominent in comparison to the British EIC – colonial actor in present-day Bangladesh, the growth of Amsterdam is intricately tied to Dutch colonial expansion in Asia. The VOC's Asian expeditions were considerably more expensive compared to those in West Africa and the Caribbean, leading to the development of a secondary bond market in Amsterdam's capital market in the early 17th century (Gelderblom and Jonker, 2004). The connection drawn between colonialism and capital accumulation in Amsterdam demonstrates the importance of "reading imperial metropoles and colonial peripheries as different but fundamentally interlinked spatialisations of racial capitalism" (Danewid, 2020, pp. 300-301).

5.3. Understanding climate resilience under racial capitalism across Amsterdam and Dhaka

Climate resilience necessarily maps onto Amsterdam and Dhaka's historically-produced socio-ecological conditions under racial capitalism as well as inequalities across these locales. Specifically, the socio-ecological inequalities across these cases are conditioned through each space's respective colonial history and an ongoing division of labour reflecting raced and classed markets (Shilliam and Tilley, 2018). As such, no environmental policy can evade how spaces – in this case, urban spaces – are imbricated within colonial relations of power, which have deeply informed the uneven racial nature of global urban political ecologies.

Neither Amsterdam nor Dhaka's municipal climate resilience initiatives, however, engage with the broader dynamics of socio-ecological inequality rendered under racial capitalism. Across Amsterdam and Dhaka, socio-ecological inequalities in each city are obscured in climate resilience policies due to a focus on market-based initiatives and individualized climate adaptation and crisis preparedness efforts. In part, this is due to how climate resilience in each case is deeply tied to an overarching commitment to the creation and maintenance of wealth generating activities at the urban scale as the foundation for generating overall socio-economic and socio-environmental wellbeing for all (c.f. Brown, 2016). Specifically, wealth generation activities must be protected, or climate proofed, and societies must work to prepare themselves for the impacts of climate change in order to facilitate economic development, or the limited disruption of markets. In this context, environmental safety is conflated with market growth and narratives of resilience work to further construct market subjects to harness coping skills to weather political, social, economic and environmental crises (Brassett, 2018). For instance, the *Urban Resilience Project* in Dhaka fails to interrogate the forms of urban development that have exacerbated inequality and displacement in the city, rendering lower-income groups more vulnerable to forms of flooding and other environmental hazards. Rather, urban residents are meant to equip themselves to respond to environmental emergencies. Climate resilience can also entail market building around climate solutions targeting the urban scale, including through technology and greening initiatives. *Amsterdam Rainproof*, for instance, relies on green–blue roof technology and individual action, without accompanying forms of public infrastructure or policy that complements these initiatives to target its urban population in a more comprehensive manner.

Despite the differences in each municipality's enaction of climate resilience, both initiatives fail to provide adequate, comprehensive, or transformational approaches to the challenges facing urban spaces in terms of pluvial flooding. Rather than engaging in proactive work to avoid or mitigate the negative effects of climate change and environmental degradation climate resilience focuses on reactive actions that aim to minimize the damage, or manage the risks, posed by climate change. Further, neither initiative engage with efforts to comprehensively address how urban economies and societies are organised that drive climate change or increase (uneven) community exposure to environmental hazards. Both *Amsterdam Rainproof* and Dhaka's *Urban Resilience Project* reject transformative action through the implementation of climate resilience, and in both spaces, public entities evade taking up the costs of climate adaptation, promoting instead private, community-level, and individual activities. As such, urban flooding continues to threaten both cities, though to different degrees.

It is the very form of inaction presented by climate resilience that works to remake and reproduce socio-ecological inequalities and injustices across spaces such as Amsterdam and Dhaka. When viewing climate solutions to pluvial flooding across Amsterdam and Dhaka, each municipal climate resilience initiative appears to achieve respective successes or failures dependent on the individual capacity of each city to tackle pluvial flooding. When critically comparing the outcomes of climate resilience across Amsterdam and Dhaka, however, it becomes necessary to understand that the outcomes of climate resilience also produces and reproduces socio-ecological inequalities *across* locales. In particular, the colour-blind nature of climate resilience policy and the manner in which climate governance works to skirt around forms of economic development in both cities that emblematizes the racial nature of the global division of labour across Amsterdam and Dhaka. Specifically, climate resilience is seen to be even more necessary in the "mismanaged" urban space of Dhaka, which is portrayed as overpopulated, unplanned and informal, and as such, more vulnerable to flooding due to its inherent qualities (Bird et al., 2018; UNISDR, 2018). At the same time, however, climate resilience does not seek to transform forms of economic development that lead to climate change as well as dramatic socio-economic and socio-environmental inequalities and injustices across urban spaces. While the repercussions of urban flooding are relatively more threatening to the safety of urban residents in Dhaka compared to those in Amsterdam, the narratives of the mismanaged nature of Dhaka serve to justify the racial inequalities between the two cities. The resulting outcome of climate resilience as colour-blind works to evade confrontation with racial inequalities across urban spaces such as Amsterdam and Dhaka.

5.4. The (un)deservingness of environmental protection and acceptable solutions to urban flooding

There are efforts in Dhaka to contest ongoing policies regarding climate action and organizations seeking to reinstate indigenous forms of water management to enable more harmonious relations between the city's built environment and its water bodies. These efforts, led by local activists, seek to move away from externally imposed forms of flood management infrastructure and urban development that diminish the

centrality of rivers in Dhaka's social, political, economic, and environmental fabric. For instance, activists advocate that rivers and canals should act as more central modes of transportation in Dhaka – as the city suffers from some of the world's worst traffic conditions. As an activist respondent described the shifts leading rivers to become increasingly peripheralized in Dhaka, "You had river for transportation, but now you have roads. You had boats for crossing rivers, now we have bridges." Further, rivers, canals, and floodplains should be protected from forms of urban development such as sand-mining and encroachment to be able to better accommodate for the effects of pluvial flooding in the monsoon season (K. Ahmed, 2020). Activist organizations suggest reverting to indigenous forms of 'pandalling' to protect river erosion and ensure the ability for water bodies to continue to serve as vital transportation routes. Pandalling refers to the use of heavy bamboo poles serving as a permeable form of riverbed bank protection. Instead of building an embankment or dijk that permanently blocks water in a given area in the event of heavy rainfall, pandalling allows rivers to expand and contract while preventing erosion. These perspectives on climate adaptation measures, however, remain marginalized in Dhaka. Rather, internationally-imposed flood infrastructure and climate resilience policies such as the *Urban Resilience Project* are favoured, championing external visions of urban development and flood control. The ability of (low-income) Bnagladeshi's to adapt themselves to these externally imposed regimes becomes the marker of whether they are deserving of environmental justice.

Interestingly enough, in the mid-2010s the Netherlands developed a *Room for the River* [Planologische Kern Beslissing (PKB) Ruimte voor de Rivier] policy. This framework moves away from advanced water engineering that "controls" land from being submerged (Rijke et al., 2012). Rather, *Room for the River* takes an ecological approach to flood risk management by deepening rivers, lowering and expanding floodplains, relocating dijks, and constructing high water channels (Rijkswaterstaat, 2021). All of the aforementioned actions provide space for rivers to expand in the Netherlands during intense rainfalls, reflecting a similar approach to the Bangladeshi activism described above. While Bangladeshi activism surrounding the ecological health of rivers is side-lined, however, the Dutch approach is heralded and has been exported as a model to the United States, Vietnam, and even Bangladesh (Zevenbergen et al., 2013). What this demonstrates is a continued reverence on Dutch "mastery" of water management and the deprecation of centuries-long Bangladeshi ways of living with their indigenous Delta environment. Rather, Bangladeshi deservingness of environmental justice is intimately tied to adopting externally imposed visions and material policies on urban development and climate resilience in order to conform its socio-economic and socio-environmental wellbeing to the aims of the global political economy under racial capitalism.

The material aspects of the above discourses simultaneously empower certain visions of flood control, namely, climate resilience – while denigrating others – namely, systematic climate mitigation efforts or indigenous-oriented approaches to living with water. As such, the colour-blind nature of this global policy framework obscures colonial and racial relations of power, ultimately favouring solutions that reproduce environmental inequality across the global North and global South. In so doing, climate resilience policies support the manner in which Dutch flood infrastructure expertise and Amsterdam's urban development is equated with the deservingness of environmental justice, while Bangladesh's portrayed underdevelopment urban mismanagement rationalizes the un-deservingness of environmental justice for its residents.

6. Conclusion

As seen across Amsterdam and Dhaka, climate resilience aims for residents, communities, and municipalities to individually and collectively withstand increased and intensified pluvial flooding. While the policy framework demonstrates shortcomings in each case, the consequences for residents of Dhaka are far more severe. When critically comparing climate resilience across Amsterdam and Dhaka, I argue that the policies renegotiate and reconfigure uneven socio-ecologies across the global North and South. Further, urban flood resilience disregards the transformative action required on a global scale required to effectively and equitably adapt to climate change and its uneven effects across societies. Taken in conjunction, the climate resilience policies examined obfuscate race and colonial relations of power from the relative experiences with urban flooding and the governance opportunities in each locale. Climate resilience similarly frames those who make the correct choices (Amsterdam's Rainproof project) as deserving of protection, while those who make 'incorrect' choices (Dhaka's mismanaged urbanization) are undeserving.

Both Amsterdam and Dhaka continue to be imbricated in the uneven global racial dynamics informing each city's socio-ecological conditions. Both cities compete for global economic activity: for instance, in the wake of Brexit, Amsterdam has become Europe's top financial centre and home to corporate headquarters (Alice, 2021; Stafford, 2021). On the other hand, Bangladesh, like many other decolonized nations, continues to compete globally in extractive export-based economies such as the garment industry, which is centred in Dhaka (Bhattacharyya, 2018; Elson, 1994; MacLean et al., 1997; Quadir, 2000). Although it is necessary to situate the wealth and privilege of Amsterdam against the vulnerability and relatively higher levels of poverty in Dhaka to understand the uneven experiences with urban flooding, I also seek to interrupt artificial ontological and epistemological binaries between the global North and South regarding wider trends involved in the governance of climate change through resilience. This is because I argue that they are inherently *connected*: the overarching principles informing climate resilience seek to justify the application of individual responsibility, private development at the urban scale and a lack of climate mitigation efforts globally. Dhaka's vulnerabilities to pluvial flooding are far more severe than Amsterdam's, however, this does not indicate that Amsterdam Rainproof is successful or adequate by any means. Rather, climate resilience works to justify the status quo in both cities that simultaneously supports the reproduction of unevenness in a global sense.

Contrasting Amsterdam and Dhaka allows for an examination of climate change governance across the global North and global South to better understand how these processes cannot be divorced from historical and contemporary socio-spatial processes in the global political economy (Harvey, 1996; Massey, 2005; Peck and Tickell, 2002). Further, Dhaka's experience with climate resilience is presented against Amsterdam's in order to examine how climate resilience is articulated differentially yet can be examined in conjunction at the urban scale, interacting with both global and contextual relations of power. By engaging in this comparison, rather than viewing Amsterdam as the model city and comparing Dhaka as an oppositional entity to be measured against Amsterdam's successes, I demonstrate how across Amsterdam and Dhaka, urban flood governance is globally relational in terms of how "key processes are constituted in relation to one another through power-laden practices in the multiple, interconnected arenas of everyday life" (Hart, 2016, p. 375, c.f. Lefebvre 1991).

CRediT authorship contribution statement

Sarah E. Sharma: Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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