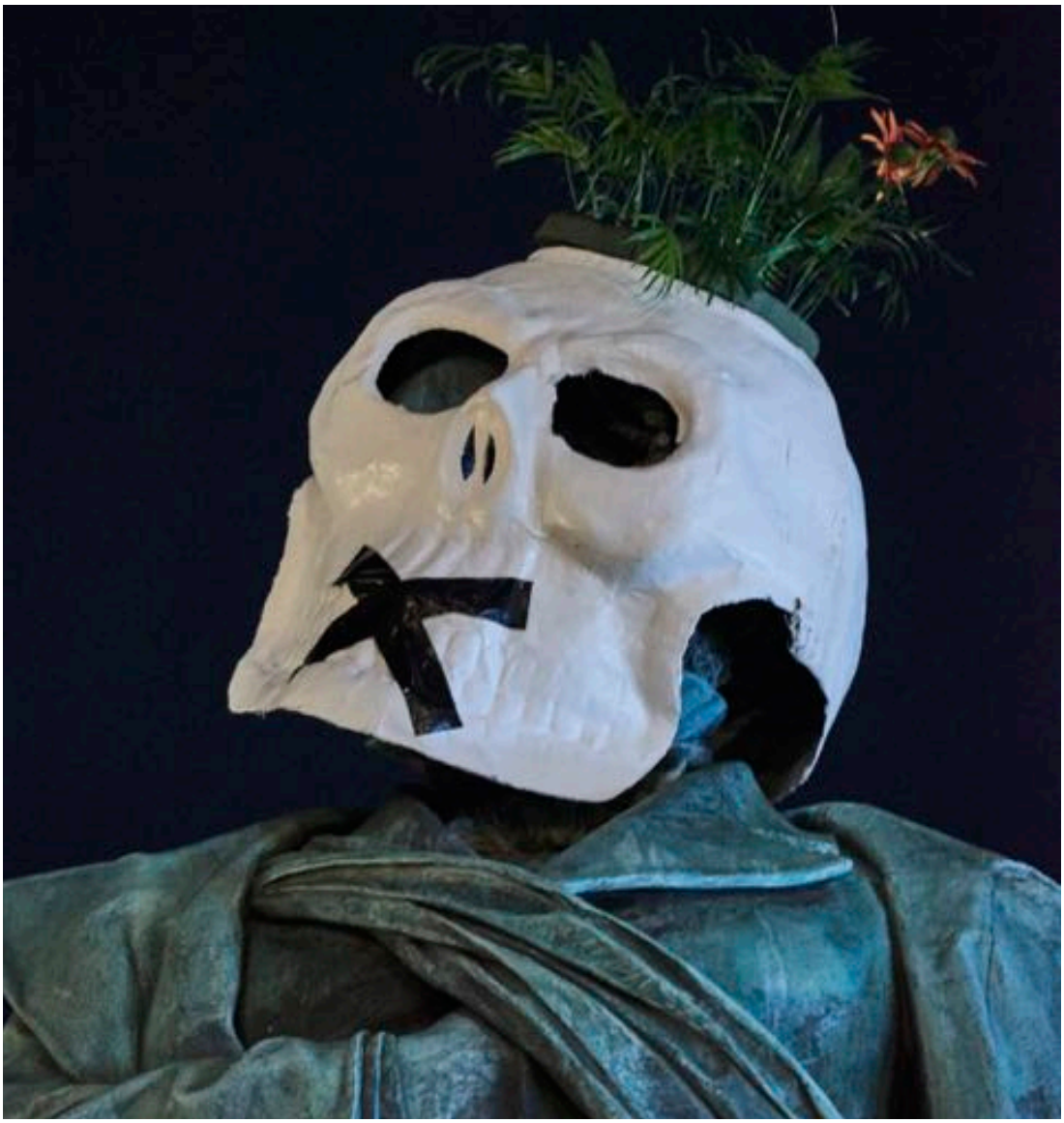

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Climate Turn

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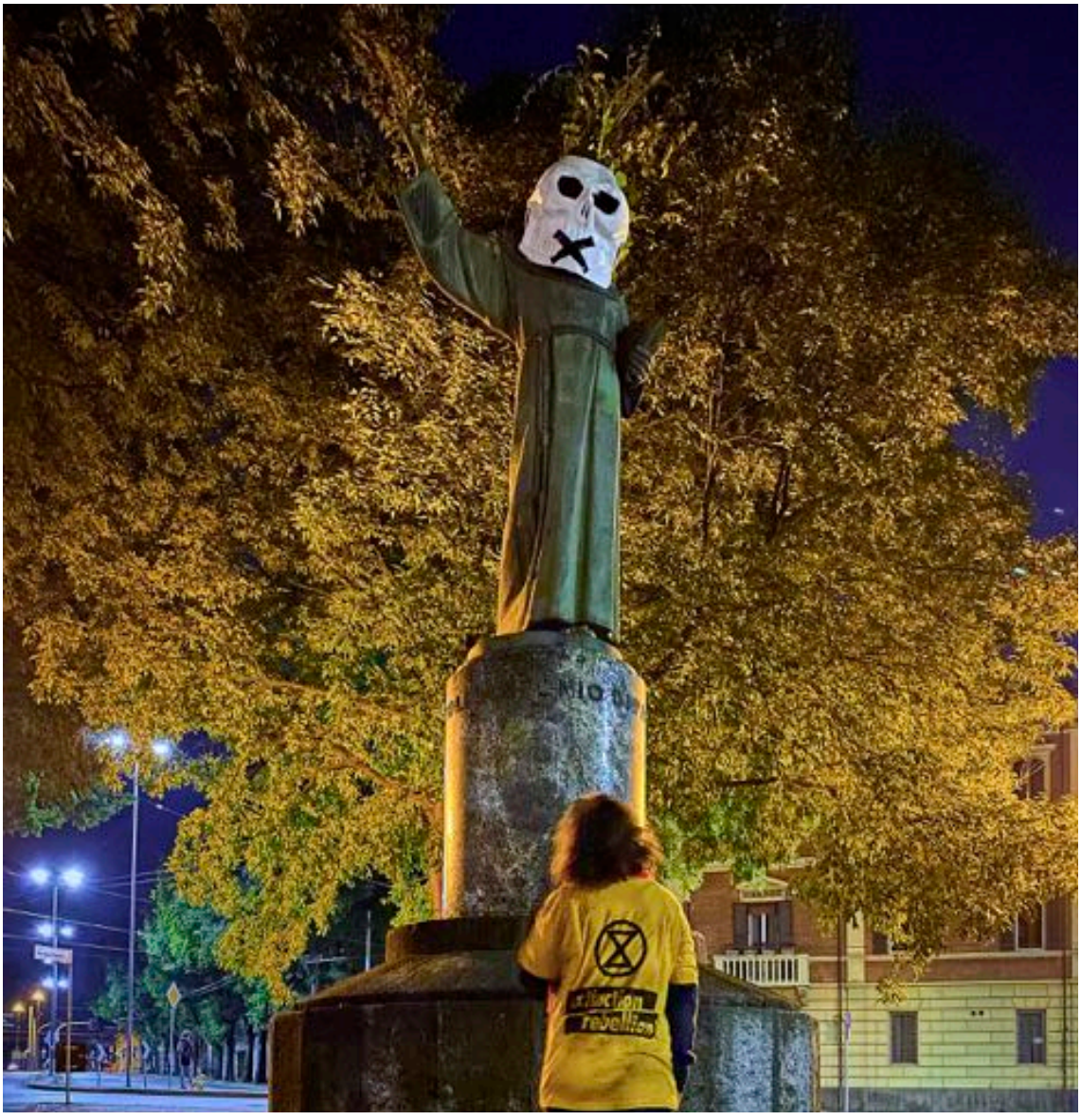

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a cura di / dossier coordonné par / edited by
Anna Casaglia & Cristina Mattiucci

Guest artist / artiste présentée / artista ospite
Michele Tombolini

Editorial

EDITORIAL

Since the late 1980s, warnings started being raised by scientists about the warming of the planet and the fundamental role of human actions in this process. At the United Nation Conference on Environment and Development (UNCED) held in 1992, also known as the Rio Summit, the UN Framework Convention for Climate Change (UNFCCC) was established, leading then to the negotiation of the Kyoto Protocol. Climate change, since then, started to gain relevance as a security problem, and many more international meetings and associations were held and established.

This turn has indeed given attention and prominence to the dramatic transformation of climate and the disruptions of the environment caused by anthropogenic activities on earth. Extraction of fossil fuels, pollution and greenhouse gases emissions, deforestation, and other elements of capitalist economic expansion, industrialisation and urbanisation at the global scale have almost irremediably altered the fragile balance that makes the conditions of life on earth possible.

While we write, another UN Climate Change Conference (COP26), defined as the world's 'last best hope', is ongoing in Glasgow with the specific aims to reduce emissions, maintain global warming under 1.5 degrees Celsius, and provide economic support to developing countries. While criticisms point to the lack of effective initiatives to cut the burning of fossil fuel by part of the major emitters, COP26 reveals the stark reality of a climatic disaster not faced adequately.

One of the main problems in addressing the present crisis regards the tendency to focus on individual behaviours and responsibility, instead of putting into discussion the system which frames these behaviours. As an example, while plenty of attention is given to how correctly waste sorting is done by people, little progress has been made about the excessive use of plastic and film by food companies. As George Monbiot rightly wrote, "capitalism is killing the planet" while we are distracted using recyclable straws and tote bags (Monbiot 2021), without discussing the social, political and economic system that creates and defines the conditions for consumption in the first place.

The increasing urbanisation of the world has created a situation of interconnection between city environments in need to secure and widen their commodity chains, energy supplies, mobility networks, leading to the conceptualisation of the term *glurbanisation*, to indicate the new condition characterising humanity. This process has to be considered the main reason for the dramatic and irreversible transformation of the biosphere, and consequently of the conditions of life on earth.

Indeed, the *turn* we want to emphasize here has to do with the fundamental need to see climate nowadays as a prism through which we can better understand present political, economic, and social phenomena. With this special issue, specifically, we want to focus on climate as a new framework to analyse the urban question, and we offer an interpretation of the present climate crisis as a key lens to comprehend present forms of inequalities, injustice and vulnerabilities at the local and global levels.

From one side, *glurban* populations' lifestyle in the global north has impacted the most on the alteration of the biosphere and the climate, while technology and resources keep them able to adapt and/or respond to environmental transformations. On the other side, it is clear that the degree of vulnerability people face in relation to climate transformation is hardly related to the impact their lives have on climate change in the first place. Experiences of past and present forms of colonialism, dispossession, land grabbing and exploitation have created the conditions for certain areas to suffer most from environmental

disruption.

While the mainstream discourse on the climate crisis points to its presumed effects on the raise of conflicts in poor countries in the global south, their spillover effects, and future apocalyptic scenarios of hordes of so-called "climate refugees", capitalist *glurbanisation* keeps growing, consuming the earth's resources and emitting carbon dioxide.

The collection of articles in this special issue focuses on global cities and urbanisation in its multifarious forms and aspects, a most needed approach in order to better understand the complex configuration of the present climate crisis. Contributors have looked at capitalist glurbanisation as the key driver of the crisis, as well as underling the potential of cities as hubs of radical and virtuous transformation and creation of solutions, however conflicting.

In addition, contributions tackle the differential impact of environmental disruption in global cities in the north and in the south, highlighting the way in which new forms of injustice and inequalities are now articulating around the climate issue. The open geographies emerging from the issue could be finally interpreted as a mirror of such imbalances: at the microlevel of everyday life in Asian, South American of African cities we can see the long wave effects of global economic processes, which still claim for a radical, critical and just interpretation of concepts such as sustainability, resilience, adaptation. The collection points to diverse forms of environmental injustice, which intersect with pre-existing spatial and social divides, economic inequalities, and limits to mobility, creating novel intersectional ecologies.

The issue opens with the article by Sarah Walker and Elena Giacomelli, presenting insights from fieldwork in Dakar. The authors point to the unhealthy city environment as an evidence of an uneven distribution of the right to live in a healthy environment. They show how past and present colonial processes have impacted on places and on the (im)possibility, for some people, to access mobility as a form of resistance to climate change. Drawing on postcolonial literature, they allow inequalities in adaptation capacity to emerge, linking them to historical global relations of exploitation and showing the uneven impact of the climate crisis.

Fausto Di Quarto's paper follows and leads us to a critical analysis of the failure of discourses and investigations on the ecological crisis. Di Quarto underlines how nature and discourses around it have been depoliticized and became technocratic, hiding nature's intrinsic political character. In line with our premises, the author points to the urban process as "the most disruptive metabolic engine ever invented by societies", showing how hypocritical it is to face the climate crisis without discussing the flows that continuously enter and exit cities worldwide.

The following two articles, although focused on different contexts, form a dialogue on the often unjust interventions to face environmental disruption. Informal settlements, generally more vulnerable to "natural" disasters (that are of anthropocenic nature, therefore not natural at all) and climate change, are often the target of resilience policies that see their presence as risky and unmanageable, leading to evictions and dismantling of informal shelters or squatted camps.

Giuseppina Forte describes the contrasting understanding of 'uninhabitable spaces' by Brazilian authorities – whose aim is to secure space from disasters – and dwellers, specifically Black women living in a squatter camp in the periphery of São Paulo, whose livelihoods are strongly entangled with the space they inhabit. The author, through insights derived from her fieldwork, shows how environmental injustice is not just related to vulnerability to hazards, but

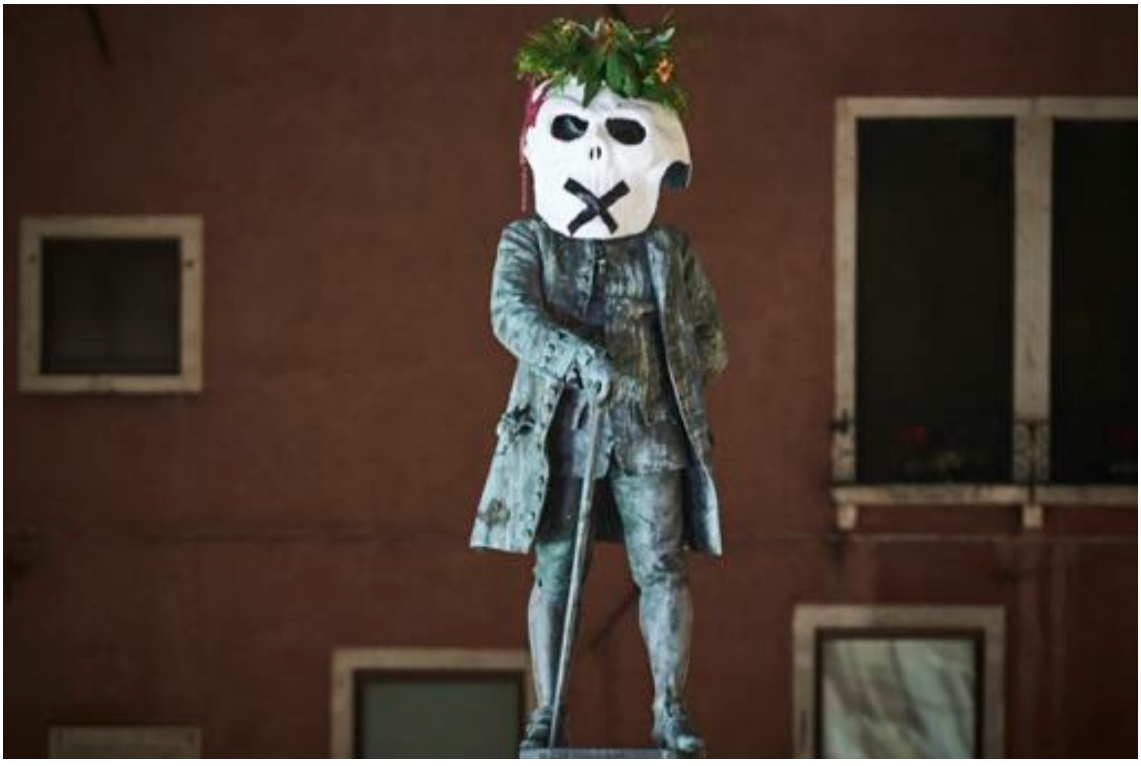
also to adaptation strategies like evictions. What is dismissively defined 'uninhabitable' has to be understood as a space of intimacy, of domesticity, where the risks implied by floods and other disasters are normalized in comparison to other economic or housing risks.

The concept of peripherality is key in Francesco Pasta's paper, in which he analyzes forms of resistance in low income informal settlements in the South East Asian megacities of Jakarta, Manila and Bangkok, focusing on flood risk mitigation and waterside informal settlements. Different experiences across the three contexts are united by the same logic and resilience discourse that link peripherality and informality with risk. This process produces what the author defines as 'hazardscapes' which reflect and reproduce pre-existing socio-spatial inequalities and injustice.

The closing contribution shifts our gaze to global cities and their future: Marcello Di Paola looks at the hazardous combination of green and smart ideas and projects for the sustainability and the survival of cities. His paper underlines the challenges contemporary cities face due to the growing urban population and point to neighborhood practices, combine with technological solutions, as possible ways out of the crisis.

Overall, a strong critique emerges from the collection, regarding he unequal impact of the climate crisis and directed at both environmental discourse and practices. From one side, we clearly see the unfolding of the crisis in vulnerable contexts where the poorest and most marginalized are in high situations of risk. From the other side, we recognize both a discourse that reproduces divides by linking social and spatial marginality with risk, and adaptation practices that recreate conditions of precarity and impoverishment. In the meantime, the real problems, regarding the exploitation of nature, capitalist extractivism, and Western forms of consumption, are not seriously tackled and the 'right to breath' (Mbebe 2020) recalled in Walker and Giacomelli's article, remains a privilege of few.

A.C. & C.M.



Waste, space and mobility justice: interconnecting strands of the climate crisis

as experienced in Dakar, Senegal

Sarah Walker
Elena Giacomelli

A city in movement that is constantly in the midst of creating itself. Almost suffocating, it seemingly has lost its lungs despite its proximity to the Atlantic Ocean, and green spaces are very rare.

(Felwine Sarr, 2019)

The sand on the beach was alive and used to groan when we walked on it. Now it is not like this. The sand is dead because there is so much rubbish, pollution and waste water that is dumped in the bay that it is now dead

(Abdoulaye Diouf, Thiaroye sul mer, Dakar, Senegal)

The Senegalese capital, Dakar, is described as a city that has 'lost its lungs', where the sand, suffocated under the rubbish strewn over it, is 'now dead'. The concept of breath is central to Achille Mbembe (2020), who calls for the universal right to breathe, meaning not just biological breathing, but full enjoyment of the human experience. Using this concept as a means to explore the climate crisis, we take the city of Dakar to draw attention to the interconnecting nexuses of the capitalist extractive economy which feed into the climate crisis and its unequal impacts globally. Particularly, its impact on the right to breathe. The article is based upon research conducted for the interdisciplinary EU funded research project *ClimateOfChange*.[1]

To 'de-naturalise' the climate crisis, often portrayed as natural disasters which invisibilises both the socio-political responsibilities and the global inequalities at the heart of the crisis, the research draws on sociologist Mimi Sheller's concept of 'mobility justice' (2018). This expands the notion of climate justice, broadening our understanding to include climate change, unsustainable urbanisation and unsustainable bordering systems as a combined crisis. The concept reflects the interconnecting strands that emerge from *ClimateOfChange*: the right to mobility, the right to live in a healthy environment, and the unequal access to such rights across the globe (see: Giacomelli, Magnani, Musarò and Walker, 2021). This approach positions capitalism together with its fossil-fuelled infrastructures of air travel, automobility, suburbanisation and consumerism, at the very centre of the climate crisis and

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1 The research is funded and drawn from the project End Climate Change, Start Climate of Change. A Pan-European Campaign to build a better future for climate induced migrants, the human face of climate change. (2020-2023, PROJECT CODE CSO - LA/2019/410-153) co-funded by the European Commission within the DEAR programme (Development Education and Awareness Raising). The project is led by WeWorld.

displacement (Sheller, 2018; Baldwin et al., 2019). It further recognises the impact of colonialism on both mobilities and places, and that adaptive capacity is highly uneven, mediated by intersectional considerations, such as one's position in relation to capital, gender, ethnicity, class, race (Boas et al., 2019).

Senegal has a high incidence of climate-sensitive economic activities, including farming and fishing. Climate sensitivity is exacerbated by the fact that about 52% of the Senegalese population live in coastal areas, mostly concentrated around Dakar and other urban areas. Senegal's coastal areas are highly environmentally fragile and face sea level rise, coastal erosion, soil salinization, pollution, maritime storms and depletion of fish stocks and biodiversity. Rapid urbanisation is also leading to and exacerbating waste problems. Waste management is both a behavioural and structural issue. Most of the waste is household waste and people lack waste infrastructures, but management also requires a top down approach (Hutson, 2021).

Large cities like Dakar lack professional sanitary disposal sites and almost 70% of the solid waste is deposited in unauthorized waste disposal sites. The nearby Mbeubeuss landfill has dramatically expanded in recent years, and at over 114 hectares is one of the largest open-air landfills in the world. The landfill site was created in 1968 on a drying lake and sits on a flood plain outside Dakar, close to the sea. Now, 1,300 tons of waste is brought in each day by 230 trucks. Not by chance, Mbeubeuss is situated in the Pikine district of Dakar, the poorest suburb of the city (Cissé, 2012) originally established in 1952 when squatters were removed from central Dakar, it has continued to grow due to urban expansion and rural exodus (Simone, 2003). Flooding in this neighbourhood is also a persistent problem. Such places reveal the spatial inequalities inherent in who produces waste and who gets it (Armiero and De Angelis, 2017).

Local people at risk of being wasted by capitalist processes are held to living in spaces contaminated by growing levels of waste.

Waste, predominantly plastic, but also clothing and other materials, is visible everywhere, except the tourist beaches, clear from this detritus. The difference between the beaches of Dakar where local people live and the tourist beaches is stark. Tourist beaches reflect the image of the perfect white sand beach, sparkling in the sunlight. The differences between these two beaches becomes a visible metaphor for the inequalities between tourists, privileged travellers of the world, and the local inhabitants who, owing to their marginalised position within structures of racial capitalism that underpin the global economy, are unable to access such freedom of movement.

This reflects Bauman's notion, expressed some years ago now, that 'the vagabonds are the waste of the world which has dedicated itself to tourist services' (1998, p. 92). Local people at risk of being wasted by capitalist processes are held to living in spaces contaminated by growing levels of waste (see also Kerber and Kramm, 2021). Mbembe (2012) too, in relation to the dispossession of life in Africa, maintains that '[capitalism] needs to work through and across different scales of race as it attempts to mark people either as disposable or as waste. It needs to produce, order, segment, and racialize surplus or superfluous populations to strategic effect.'

Both the extent to which certain kinds of people are inundated with pollutants, bacteria, viruses, violence, and disaster and the means by which urbanization as a planetary phenomenon has refigured geographies of sustenance are well documented (Simone, 2016, p. 138). Indeed, as Simone states '[h]undreds of research projects have demonstrated correlations between health, mortality, environmental conditions, economic poverty, spatial exclusion, racial identity, and political justice' (Simone, 2016, p. 138). However, it is important, Simone cautions, to consider how much such indices of deprivation and violence normalize as uninhabitable the places where many people attempt to

make a life and fail to account for the 'material residues of countless efforts to endure' (Ibid). It is these efforts to endure against the climate crisis that, in addition to the interconnectivity exposed by the concept of mobility justice, are the focus of this article.

The landfill Mbeubeuss is almost a city in itself. Here, amongst the waste are small shacks where women prepare coffee for the more than 2000 people who work here as waste pickers (Urselli, 2016). People such as Aliou, that left the rural areas of Senegal to come to Dakar in search of work. Aliou previously worked as a receptionist, but his salary was not enough to cover living costs. He then moved to the landfill site, where he could make more money. He has now worked in Mbeubuess for over thirteen years, moving up the waste picker career ladder, a hierarchical structure based on the capability to identify and strength to pick the more valuable items of waste (Ibid). He is one of the founders of the informal association *Bokk Djom* (group solidarity and courage) which protects the interests of the waste pickers on site.

Despite the difficulties of having such a highly stigmatized job, Aliou chose this work, which he considers to be: 'an essential job that should be recognised by society, and rendered more secure and protected.' For Aliou, waste is representative of a society that produces and consumes more than it needs. Of course, the permanent disposal of commodities is an essential part of the planned obsolescence that facilitates continual demand for the new and is central to the production of capitalist value (Rogers, 2005 in Samson, 2015, p. 817).[2] To visit a landfill site is, in the words of the author Guido Viale, to go 'behind the mirror that the consumer society loves to reflect itself in' (2000, p. 7). This same mirror hides this world from Europeans. Indeed, many EU Member States continue to send their waste to the Global South, including countries such as Senegal, which are unable to manage their own waste (Hutson, 2021).

Abdoulaye Diouf, an environmentalist who works on awareness raising around waste management, is one of the founders of the *Doleel Thiaroye Sur Mer* (Strengthening Thiaroye Sur Mer) association. He explains how they set up a waste management system whereby rubbish bins were placed in locals' houses 'because it requires personal engagement' and collected once every two days. However, he explains the social issue that emerges as participants are expected to make a monthly contribution to cover rubbish collectors salaries.

> 'This requires a behaviour change because for 50 years some people have been dumping their rubbish in the sea, so they find it illogical to pay for collection. Normally, the municipality should be in charge of rubbish collection, but it fails to do this. People should step up to avoid polluting the sea, as this leads to the scarcity of fish that then impacts the whole of society since people will not be able to make a livelihood.'

In Rufisque, another fishing area of Dakar, locals have transformed a former open landfill into a community ecological centre, encouraging recycling and rubbish collection. This is 'to reduce the impact due to the trash methanization and to reduce the sea pollution caused by rubbish disposal in the sea.'

Abdoulaye Diouf explains the impact of sea pollution further:

> 'As you can see, the beach is full of rubbish, which chases the fish because they are unable to breath. If the fish are unable to live in an appropriate environment, at the right temperature, they will move elsewhere. The fishermen then have to work harder to reach the fish that move to places that are the domain of the big boats. That is the problem.'

The bigger boats are industrial boats from the EU, Russia and China. This is a form of 'ocean grabbing', which mainly takes place through policies, laws, and practices that (re) define and (re)allocate access, use and control of fisheries resources away from small-scale fishers and their communities, often

2 See also discussion of waste in this journal losquaderno n.29 (2013) http://www.losquaderno.net/wp-content/uploads/2013/09/losquaderno29.pdf

with little concern for the adverse environmental consequences. Indeed, the EU has been strongly criticised for its role in the depletion of West African fish stocks (Okafor-Yarwood and Belhabib, 2020).

It is these intertwined factors that led many people to maintain that often there was 'no choice' to stay in Senegal, even if that may be the preferred option. 'No choice' was a recurrent and dominant theme that emerged in the discussion of motivations leading people to take the risky pirogue (small wooden fishing boats) journey across the Atlantic to the Canary Islands/Europe.[3] This illegalised journey is seen as a life and death challenge as other, legal, routes are not possible (Ifekwunigwe, 2013). The motto for this journey is: 'Barca wala barsakh' - 'either we get to Barcelona or we die trying'. Literally, Barcelona or the hereafter. There was a fatalistic recognition of the limited options available in fishing communities such as Rufisque or Thiaroye-sur-mer, where sea level rise is causing land to disappear and people to be displaced, and the fishing industry is being destroyed by pollution, currents changing due to climate change, leading fish to migrate elsewhere, and industrial fishing boats taking the larger, more expensive fish.

Concluding thoughts

'Climate-induced migration' is now a common rationale for measures to strengthen and protect national and regional borders in the Global North (Boas et al. 2019). Resources going towards border enforcement compared with resources going into climate mitigation are significantly higher. Broadening the concept of climate justice to mobility justice (Sheller, 2018) reveals how the climate crisis includes a broadened set of civil rights issues, with far-reaching implications beyond the environmental, directly understood. Evidence from Dakar reveals the mingling of multi-scalar socio-political and environmental abandonments that create a hostile environment. In *Afrotopia*, Felwine Sarr (2019) calls for a move away from fossil fuels to an acuter environmental awareness and responsible modes of production in Africa, and, importantly, to draw upon diverse epistemologies, away from Eurocentric extractivist modes of production. It is essential then to align with Achille Mbembe's (2020) call for the universal right to breathe. This is embedded in the right to a healthy environment for all in the widest sense where sand, fish, people, and the city itself are all able to breathe.

3 Between January and June 2021 at least 250 migrants lost their lives crossing the Atlantic. See: https://migration.iom.int/reports/west-and-central-africa-%e2%80%94-irregular-migration-routes-europe-%e2%80%94-western-african-atlantic-0

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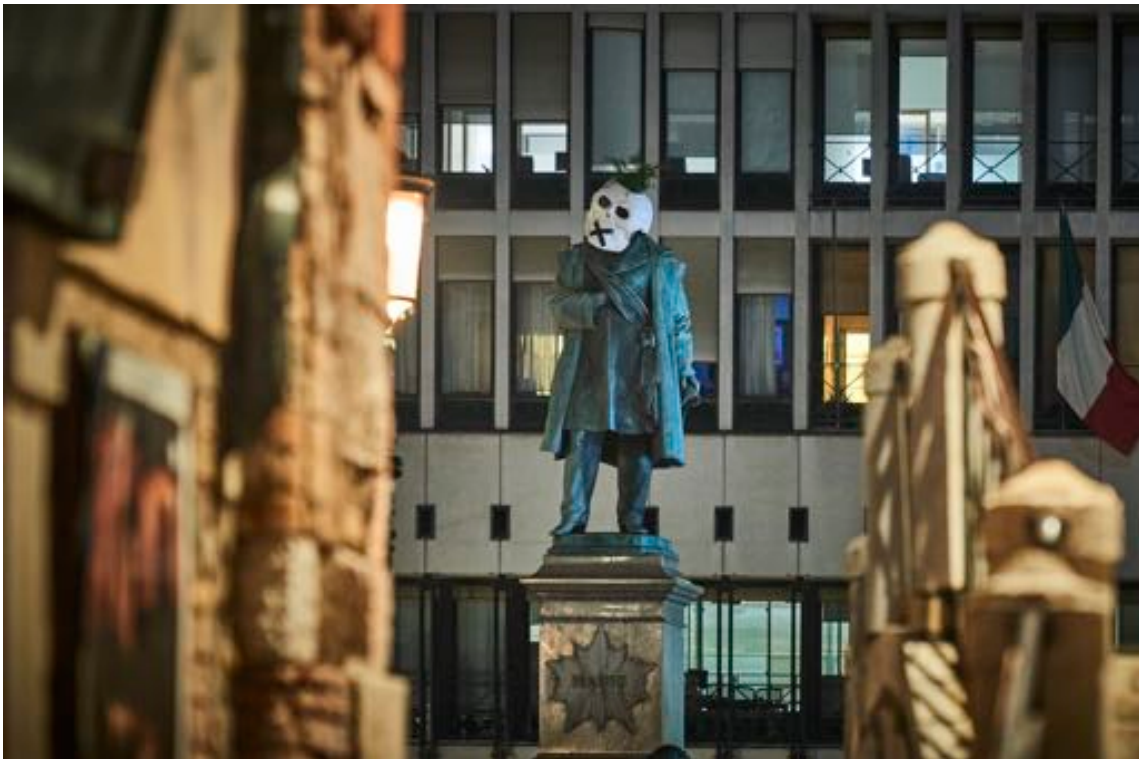

The Anthropocene and the urbanization of nature: towards sustainability?

Fausto Di Quarto

The aim of this essay is to critically reflect on two major "obstacles" (absences) that preclude from seriously investigate the contemporary world ecological crisis. The first one is connected to the contemporary politics and narratives existing around the idea of 'sustainability', its current depoliticization and technocratic use. The second one, on the other hand, recognizes the urban process – here conceived as "metabolic flows" of nature which enters/exits the city – as responsible for the contemporary ecological crisis. Through the theoretical lenses of *post-ecology* (Bluehdorn & Welsh 2007) and urban political *ecology* (Heynen et al, 2005), I unfold the flaws that are currently hindering a socio-ecological theorization for more sustainable futures.

The theoretical lenses adopted in this article are deeply rooted in critical perspectives of post-ecology (Bluehdorn and Welsh, 2007) and urban political ecology (UPE) (Heynen et al., 2005). The first approach entails that, today, sustainability is mainly conceived as a technocratic practice aimed at managing unpleasant implications of ecological change (un-sustainability) for as long as possible, through politics which prioritize interests of today, discounting those of future generations (Bluehdorn 2011, 2013).

Today, in fact, western democracies try to overcome a paradoxical situation: by acknowledging that systemic and structural transformation is needed in order to obtain sustainability, they simulate concern about ecological issues 'neutralizing' and reframing the sustainable theme as a technical or economic issue, avoiding any political confrontation (and conflict) around it. Such 'simulative' policies and technologies, in the name of a non-negotiability of certain lifestyles and degrees of consumption, thus represent one façade of the green-washing and populist era we are living in. The second approach, instead, recognizes in the 'urban fabric' the most important and disruptive engine of ecological depletion. According to this vision, environmental problems are closely related to how people live in cities and the urban metabolisms of consumption and distribution of nature's flows. For many years urban scholars have naively framed the relation between the city and nature as a matter of 'greening the city', thereby overlooking the most pressing and urgent aspect of the 'urbanization of nature', a process of socio-ecological change and struggle. Cities are, in fact, "built out of natural resources, through socially mediated natural processes" (Heynen et al. 2005:4). "In UPE, social power relations cause alienation from nature, or from the complex fabric of social and spatial relations involved in its production, relying in part on practices of political hegemony and social exclusion which serve to keep natural processes under control (Di Quarto, 2018). From this perspective, the only possible sustainable and ecologically-sound politics are those that generate a more equitable distribution of social power and a more inclusive way of producing nature, as a management of the commons (natural resources).

Interested in political ecology, environmental discourses and movements, Fausto Di Quarto's work focuses on environmental conflicts and participatory governance. PhD, he currently works as a Geography teacher.

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The Anthropocene, (un)sustainability and depoliticized natures

Societies have now been struggling with ecological issues for at least 40 years. Despite the great interest (proven by research and investments) on more ecological futures, contemporary western liberal democracies are still unable to define themselves as 'sustainable' societies (Bosselmann Klaus, Engel Ron 2008). It is quite clear, in fact, that the most frequent problem that our democracies face stems from the tendency to prioritize economics with immediate profits over long-term sustainability so that institutions and timeframes favor short-term gains over long-term responsibility (Bosselman ibid. 2007:15). As a matter of fact, democracy is closely associated with a capitalist economic model – blending the distinction between political/economic features – which is why it makes sense to talk of liberal or "capitalist democracies". However, contradictory relations between capitalism and environmental sustainability are now more clear than ever, as critics have argued that capitalism necessarily undermines the conditions of production (i.e. soil, water, minerals...) to sustain capital endless accumulation (Marx 2008 [1867]; O'Connor 1998; Foster 2002). Nevertheless, although capitalism and environmental sustainability seem in binary opposition, since the beginning of the 1990s it has emerged the idea that with a rational and efficient ecological modernization of the means of production and consumption (through a 'green eco-friendly' industrial apparatus) economy and ecology could harmonically coexist (Gouldson and Murphy 1997; Pellizzoni 2012). Recently, however, it has become clear that this way of approaching ecological and social issues is failing, as all social and ecological indicators suggest that we are witnessing a very delicate phase in the Anthropocene that might lead to increasingly unsustainable conditions, if not extinction, for much of humanity as well as animal and vegetal species (Mikkelson, Gonzalez and Peterson 2007; Motesharrei, Rivas and Kalnay 2014; Ceballos, Ehrlich and Dirzo 2017; Hallmann et al. 2017).

The best way to improve the world ecology, therefore, would seem to acknowledge the fact that nature, in itself, is not right, beautiful or good and that the constant depoliticization of socio-natures represents the problem of its 'sustainability'.

In 2016, the International Geological Union confirmed that we live in the era of the Anthropocene. The greatest revolution caused by the conceptualization of this epoch is therefore the admission of our co-participation and thus the socio-natural creation of a geological epoch. This implies that if climate is the result of human activities, it is itself the result of a particular political-economic system that has produced and distributed (very unequally, in this case) benefits and disasters in many of the nodes of the 'global metabolic chain', i.e. the world network that supplies raw materials, goods and waste in uneven socio-ecological configurations (e.g. e-waste).

One of the mis-conceptualisation to be debunked is that economic growth unrelated to the consumption of 'nature' can be possible. As a matter of fact the mantra of ecological modernization is revealing its flaws and contradictions, as already described by Jevons' paradox and by the impossibility of technology alone to reduce the world consumption of materials and thus an economic system decoupled from CO2 emissions (Chu 2017). The best way to improve the world ecology, therefore, would seem to acknowledge the fact that nature, in itself, is not right, beautiful or good and that the constant depoliticization of socio-natures represents the problem of its 'sustainability'. Current policies which neutralize the political value of nature and its use – such as those aimed at its protection or salvation – mislead from a true concern of ecological sustainability. That is why, despite the great scientific knowledge accumulated about the environmental impact of mankind, the situation still does not seem to be improving: carbon dioxide continues to increase year after year (https://www.co2.earth/) and many of the nodes of the world's metabolic chain are already in a serious socio-ecological crisis. The decision to open the world market to quinoa or avocado, the use of cars or

low-cost airplanes, the infinite purchase and discard of smartphones/computers or the acquisition of real estate of land are issues that must be confronted in order to discuss ecology in a serious and committed way.

Urbanities without nature

A fundamental point is that the environmental issue remains in its core related to urbanization. It is not hazardous to say, in fact, that the world's ecology depends largely on how people live in cities and on how they decide to manage *nature flows* inside/outside of the city. Nevertheless, within the debate related to Urban Studies, it is quite impressive that for a long time we have ignored what is at the bottom of the metabolic processes that allow the basis of life in the city: nature. Some scholars and researchers have made it a separate branch of the discipline that in the '80s took the name of Political Ecology, known as Urban Political Ecology (UPE). Its exponents denounce the absence of nature within theorizations on the urban, as well as a lack of discussion on the process of urbanization. The urban - in this paradigm - is not understood as a mere container of objects and people, but as a continuous metabolic process, as a 'factory' of goods and services (immaterial) of high socio-cultural value, at the expense of a high production of socio-environmental externalities along the global metabolic chain (production-transportation-consumption of products). From the urban scale to the global one, in fact, each new metabolic configuration of production-consumption-disposal re-creates varied socio-ecological assemblages that exclude/include different social actors in the global production of goods and services. The continuous processing of matter is part of the 'urbanization of nature' (Kaika and Swyngeoduw 2012), a process of 'domestication of nature' (Kaika 2005), i.e. the process of keeping nature (and its flows that pass through the city) under control thanks to technological means (viaducts, pipelines, etc.).

In a nutshell, what is missing in modern theorizations of urban sustainability is the materiality of the productive and metabolic processes that underlie life in the city; these have been naturalized, given the technological progress that has allowed us to achieve high levels of engineering and urban efficiency. Despite this, the continuous exchanges of nature-flows represent the basis of life in the city, i.e. the process of transformation of non-human matter. Then – as Lefebvre first intuited – the whole planet can be said to be urbanized since the whole economy-world is based on the use and re-use of *natural matter* transformed and made available in urban centers. These resources, although they are counted among the free *gifts of nature*, are not really free, or rather, the processes that allow their use are often conflicting, at high socio-environmental cost and becoming intrinsically political.

The supply chain of a smartphone, for example (minerals, politics, energy, human labor, transport, recycling) takes place between human and non-human elements, between market rules, imaginary and political choices that form a scenario at the same time social and natural, which is blurred between human and non-human (what the scholars of UPE call precisely socio-nature). In this sense, cities represent the final node of the metabolic chain, i.e. the end point of a complex web that absorbs a great deal at the environmental level and returns immaterial (and material) goods and services to urban dwellers. The non-urban world population is thus subjected to the production (material and immaterial) of those who live in cities. The bitter irony of climate change's burdens and responsibilities represents a clear example: the historically urbanized nations responsible for the actual CO2 excesses will be (and currently are) the least affected by climatic disorders, whereas the world economic peripheries, e-waste dumps and microstates in the oceans already live socio-ecological nightmares or bear the blunt of annihilation.

Concluding remarks: moving towards an ecology of urbanization

Taking today's environmental crisis seriously, then, implies a twofold process. Firstly, the re-centring

of nature within the political discourse, accepting it (nature) as a field of dispute, in which factions, partisanships, compromises are continually agonistically reshaped and confronted. Secondly, the environmental issue must be interpreted as genuinely connected to how nature enters/exits world urbanities, or, better said, how cities 'consume' nature, moving towards a recognition of the urban process as the most disruptive metabolic engine ever invented by societies. We basically need to ask ourselves what can be considered negotiable and what cannot in our urban western lifestyles, in front of the socio-ecological consequences which each choice entails. This approach radically evokes the processes that shape the urbanization of nature, e.g. physical and social limits to cities, the reuse of the built environment or the access (or prohibition) to common goods (natural and otherwise). This paradigm shift could be fundamental in order to critically investigate the materiality of the socio-ecological processes which remain at the basis of any kind of environmental sustainability that seriously considers the problem of what world and what Nature we want to inhabit and re-create today. In the era of techno-optimism and of the 'dictatorship of growth', this seems like a good place to start.

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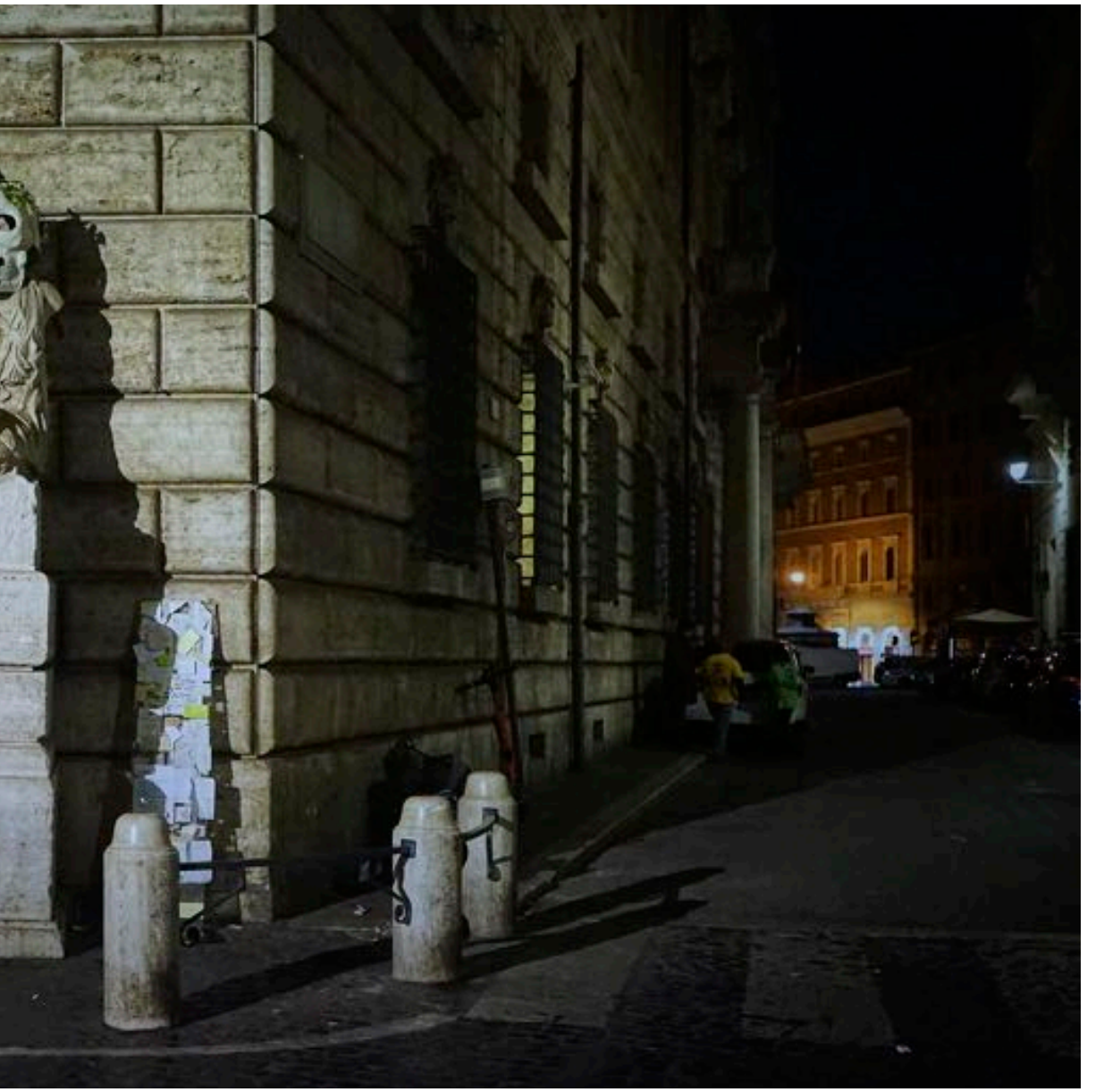
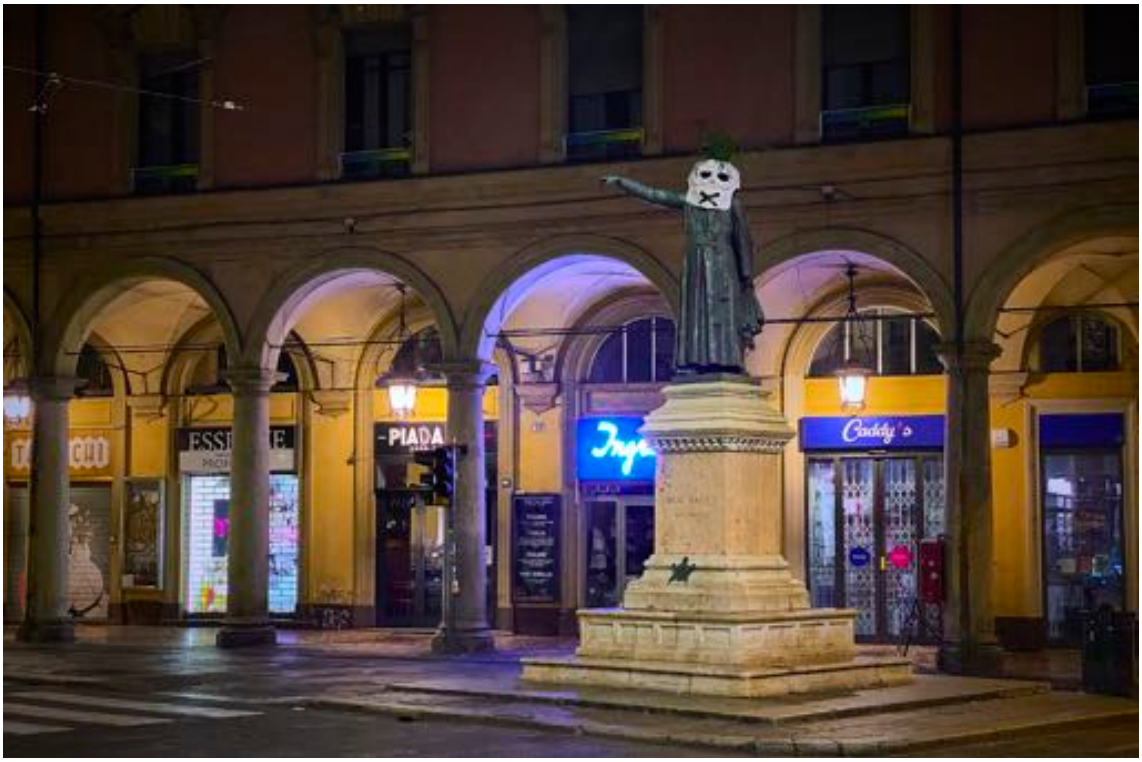
At dawn on 19 October 2021, in Venice, Padua, Verona, Milan, Bologna, Rome, Florence, Turin, Naples and Palermo, skulls with plants on their head appeared on three statues, in each city. The action/installation took place synchronously and it was carried out by Extinction Rebellion Collective. The papier-mâché masks and the artwork have been made by Michele Tombolini.

The action/installation was conceived as a gesture for the collective solicitation towards urgent environmental issues, and it draws on the symbolic dimension of recurrent Tombolini's elements, such as the X on the mouth, to denounce censorship or indifference.



Michele Tombolini (1963), born and grow up in Venice, defines his work as Social Pop: an experimentation of different techniques - from sculpture to collage and video art - that aims to raise criticism and social issues. Author of various installations in the streets of Berlin and Venice, and in the Venice Biennale 2013 and 2019, today Michele Tombolini is represented by the Cris Contini Contemporary Art Gallery (London, Cortina and Porto Montenegro).

http://www.micheletombolini.it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‘Uninhabitable’ Spaces of Flooding in an Urban South

Giuseppina Forte

Interrogating the uneven impact of climate collapse on the “urban” and “more-than urban” has become urgent in discourses on environmental justice.[1] [2] Climate change has increasingly affected urban areas at risk of flooding and landslides, where the marginalized live (Pelling, 1999; Roberts, 2001; Baker, 2012; Revi et al, 2014). This is the case for the peripheries of São Paulo, where people continue to settle along rivers and on top of hills despite the recently intensified flash floods and landslides caused by climate change.[3] Now, they face evictions.

This pattern has risen over the last two decades due to a dearth of low-income housing policies, low-cost land for housing, and a rampant rental market.[4] What Brazilian authorities might consider unfit for human habitation were in 2018 home to 674,000 inhabitants, 6% of São Paulo’s total population (IPT, 2010): like Silvana, Adriana, and Juliana, who migrated from rural Brazil, faced eviction for late rent, and settled with their children in a squatter camp along the Tremembé river, in the northern periphery of the Southern metropolis.[5]

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1 I consider the urban and more-than-urban (Tzaninis et al., 2021) as simultaneously human and non-human (Swyngedouw and Heynen, 2003; Gandy, 2006; Heynen et al., 2006; Hodson and Marvin, 2009).

2 Although already present in the environmental justice movement, these concerns have increased after Hurricane Katrina in 2005, solidifying climate justice as a critical aspect of environmental justice (Schlosberg and Collins, 2014).

3 Among the modifications in weather systems leading to changes in extremes (Giorgi et al., 2014; Diffenbaugh et al., 2017), the South Atlantic Convergence Zone—an elongated axis of clouds, precipitations, and winds extending toward southeast Brazil and protruding into the southeastern subtropical Atlantic Ocean—has intensified over the last sixty years and impacted Latin American megacities (cfr. Carvalho, L.M., et al., 2004. The South Atlantic convergence zone: Intensity, form, persistence, and relationships with intraseasonal to interannual activity and extreme rainfall. *Journal of Climate,* 17(1), pp.88-108; Marengo, J.A., et al., 2020. Trends in extreme rainfall and hydrogeometeorological disasters in the Metropolitan Area of São Paulo: a review. *Annals of the New York Academy of Sciences*, 1472(1), pp.5-20). In 2020, the combined effect of this monsoon trough and the Kurumí subtropical cyclone hit Brazil’s Southeast region, led to heavy floods and landslides, causing the death of more than 50 people and the displacement of thousands (Andreoni and Casado 2020). These weather dynamics have increased the frequency of flash floods in São Paulo, exacerbated by the rise in urban temperature due to the Urban Heat Island effect (cfr. Vemado, F. and Pereira Filho, A.J., 2016. Severe weather caused by heat island and sea breeze effects in the metropolitan area of São Paulo, Brazil. *Advances in Meteorology*, 2016; Zilli, M.T., et al., 2017. A comprehensive analysis of trends in extreme precipitation over southeastern coast of Brazil. *International Journal of Climatology*, 37(5), pp.2269-2279). Between 2000 and 2018, the number of days with heavy rainfall exceeding 100 mm in the Brazilian megalopolis was four times higher than in the 1940s or 1960s (records from the University of São Paulo’s Institute of Astronomy, Geophysics and Atmospheric Sciences and the Mirante de Santana in the northern region of São Paulo). In March 2019, the monthly rainfall accumulation was about 240 mm and totaled about 40% of the expected monthly precipitation on the night of March 10 (Marengo et al., 2020).

4 According to Brazil UN-Habitat (2010), 8.27 million Brazilians live in risk areas (9% of the total population), concentrating in the country’s poorest northeastern regions.

5 As of 2021, the number of people living in risk areas in São Paulo might have increased due to COVID-19, the subsequent

In 2019, I conducted ethnographic fieldwork in the camp, where most inhabitants are Black and Brown women in their thirties and forties with children.[6] Due to the risk of flooding, the authorities may soon evict them without compensation.[7] Approaching this area exclusively through the concerns of "urban ecological security" (Hodson and Marvin, 2009, p. 195) and climate change adaptation might distance us from the people and spaces on the ground. If geographers and political ecologists asked, "Ecological security for whom?" (Leitner et al., 2017), social anthropologists showed that adaptation actions in risk areas, like evictions, can destroy existing livelihoods and exacerbate the precariousness of those at risk (Van Voorst and Hellman, 2015).

This essay centers on those livelihoods that enabled the squatters along the Tremembé river to improve their lives despite the constant threats of floods and evictions. I focus on the networks and spaces of the domestic reconstruction of Silvana, Adriana, and Juliana, by engaging with the "uninhabitable", as framed by urbanist and sociologist AbdouMaliq Simone (2016, 2018). Simone interrogated how imaginations and policies about what is considered habitable and uninhabitable have long shaped urban governance in African and Asian cities. Building on the case of risk areas in Bogotá (Zeiderman, 2016), he joined scholars of the global South who analyzed how specific regimes of government have produced hazardous spaces (Mustafa, 2005; Hardoy and Pandiella, 2009; Gould et al., 2016; Coates and Nygren, 2020). I add that these include "uninhabitable" areas due to climate-related disasters, for which 18 million refugees were displaced in 2017 alone (IDMC, 2018).

Understanding the distributional injustice of flooding under climate collapse means going beyond hydro-geological algorithms. It calls for a thorough investigation of intersectional ecologies involving human and more-than-human actors where new forms of environmental citizenship emerge.

I, like Simone, ask: "What if the uninhabitable enabled a kind of thinking that challenged or refused what it means to viably inhabit a place?" (Simone, 2018, p. 13). In the uninhabitable spaces of flooding in São Paulo, economies and networks of subsistence can emerge. Mainly assembled by and around women, these economies include food selling, scavenging, and the reuse of furniture and appliances. Their spatial networks encompass domestic kitchens, open dumps, and improvised street stalls. They also involve the circuits of family allowances provided by different systems of power, like the state, the church, and drug trafficking. These everyday scenes are critical to understanding dwelling in flood-risk areas resulting from climate change. The uninhabitable becomes a political space where "various entanglements of provisioning and compliance" (Simone, 2016, p. 139) reinforce neoliberal governance and, at the same time, new forms of collective life unfold (Bhan, Caldeira, Gillespie, and Simone, 2020).

Spaces and Networks of Subsistence

Adriana was born in the hinterland of Bahia, one of the most impoverished areas of Northeastern Brazil and which has historically endured extreme droughts. She moved to São Paulo with her family when she was fourteen. Before settling in the Tremembé camp, she lived with her new family as a housewife in a rented apartment. In 2016, her husband lost his job, and they could no longer afford rent. They bought a shack along the Tremembé river for R$330 ($77), becoming "homeowners", the

financial crisis, and rent evictions. During the pandemic, 4,622 families were evicted from their rented homes in São Paulo (Despejo Zero, 2021).

6 Both Black and Brown Brazilians are African descents.

7 People evicted from risk areas are entitled to an *auxílio aluguel* (monthly subsidy) of R$400 ($94) for 24 months (R$600 for 18 months as of October 25, 2021). In this case, the Subprefecture might evict the squatters without compensation: they are thought to have already received the subsidy from a previous landslide in the area. From the interviews I conducted in the camp, I believe this assumption might not be based on actual censuses.

dream of low-income people fostered since the populist regime of Getúlio Vargas (1930-1954). Indeed, a dream was all it was, as they bought the ready-made shack from a land-grabber who seized public land.

Adriana slept with her husband and two of her three kids (two and six years old) in a queen bed; the other child (eight years old) slept on a small mattress nearby. The family paid for water but not for electricity. All squatters in the camp got power from the utility poles in the nearby favela Alfredo Avila through *gatos*, illegal connections to the distribution network.

I asked Adriana what her memories of the camp were. She started with the lack of privacy and noise pollution and ended with police raids and drug dealers' activities. "In the beginning, I loved living there. It was quiet, and people didn't bother me. There were no policemen. Then everyone came, and only God knows what has happened since." In her depiction, there is no mention of the risk of flooding and evictions.

Adriana attended a baking course funded by *Bolsa Família*, a federal program targeting the poor, from which she also received R$258 ($60) a month. Beyond the government subsidy, her family lived off church donations, scraps from the Sunday market, and sometimes the *cesta básica* (literally, basic basket)—a bundle of staple foods such as rice and beans, noodles, sugar, and salt provided by the evangelical church nearby. Adriana had been trying to sell her homemade cakes, pastries, bread, and *pastel caseiro* (homemade savory pies) to the community, but people ended up taking the items on credit and never paying.

Two months after my first encounter with Adriana, she sent me a text message with pictures of her cakes and bread loaves. She said, "I am selling *pastel caseiro* for R$2 ($0.5) and cake at R$35 ($8.2) a kilo. I am working a lot, thank God! And I sell soft drinks, like Guaraná." She had also improvised a street stall. In a video message, her kids watched football on television while she put icing on a cake, wearing a hairnet. The elaborateness of the toppings contrasted with the bare, rotten panels of her kitchen's walls.

If Adriana's shack was deteriorating, the kitchen was relatively well furnished. She had a new refrigerator, a microwave, and a large stove, which her husband had taken from a building site where he had worked. Their TV was a gift, and all the furniture came second-hand from relatives and friends. She had organized everything in a way for her shack to function as a home and workspace. Between one flood and another, Adriana endured an oppressive everyday life and an uncertain future while becoming her family's financial provider. Despite inhabiting the uninhabitable, she was an entrepreneur, albeit through an informal, feminized livelihood.[8]

Spaces of Reconstruction

In front of Silvana's house, three washing machines taken from the dump were spinning in the communal "laundry". This shared alley between the shacks seemed a good and safe place to hang out with the community. Silvana had salvaged a Christmas tree from the trash and decorated it with discarded ornaments. It created a warm holiday atmosphere. "What rich people throw away, we take and use," she said. Then she looked at my photography assistant and said: "If you ever throw him away, we will be happy to pick him up too!" As Donna Goldstein would say, this joke might be part of an emotional aesthetic—one that expresses frustration amid daily conditions of humiliation, anger, and despair experienced by people "at the bottom of a number of complex and interacting hierarchies" and who are "almost wholly devoted to surviving" (2013, p. 15).

8 Ananya Roy's ethnography of squatting - described in *City requiem, Calcutta: Gender and the politics of poverty* (U of Minnesota Press, 2003) - revealed feminized livelihoods as a critical aspect of persistent poverty, for which women as primary earners work in the informal economy.

Despite her joke, it took a while for Silvana to become comfortable with me. After a month of visits to the camp, I discovered that she and the other women were afraid I would take their children away. She only told me this after I said that her younger child was handsome. Silvana had seen a TV documentary on human trafficking, showing how U.S. couples unable to have children were going to Brazil to get their "strong" and "healthy" kids. Children were an asset in the camp, and Silvana had nine from three different men. She had her first child at thirteen after being raped. Her mother raised him. One of her kids died of a drug overdose at twenty, while another was heading towards a similar predicament.

"Drugs are everywhere," she said, "but drug dealers also give money to the kids. If you need R$7, R$10, ($1.6, $3.4) they help. But it's the government that is responsible for our situation," she added, "together with the corrupt and opportunist politicians who show up at election time. I stopped voting for them since they promise everything and deliver nothing". Instead, Silvana said she trusted her psychologist at one of the Basic Health Units in Tremembé: "My psychologist told me that I am not a 'favelada' but part of a community!" Unlike them, the squatters maintained that the favelados were delinquents, an argument also propagated by social workers and psychologists.

Having acquired the status of community member, Silvana did not want to talk about the conditions of extreme poverty in which she was born. When I asked her about the past, she said she did not remember and drew my attention to the shower: "See how great the shower head is? We even have hot water!" The shower head was big, and the floor and walls of the large walk-in shower stall were finished with reused tiles. Silvana wanted me to focus on the present reconstructed domesticity within the comfort of her reused finishes and appliances, including the TV, the fans, and the fridge, not the destitution of her past. Her house was not made of wood but bricks and mortar. Despite her illegal deed, Silvana believed that, in the end, the government would let her keep her home or give her an apartment in a social housing block to be built in the same place.

Her sister Juliana, on the other hand, wanted to talk about the past. She pointed to a bag of oranges on the floor, and her eyes brimmed with tears. "See that bag of oranges? I used to eat peels of oranges from the trash cans or from unsold rotten oranges that my grandfather gave me from his market inventory." Juliana recalled the poverty of her childhood in the interior of Minas Gerais: "I was hungry and picked anything from the garbage. My mother used to give me lemon with salt. It was excruciating for my empty stomach. She often asked me to look for food for Silvana. I would pick pieces of bread, cake, and fruit from the garbage and eat them. I would feel guilty because I was taking food from my baby sister. Hence, I would go and look for other food all day long and cry." Juliana had her first child when she was fifteen; as with Silvana's first, her mother raised him. She left home, wandering cities in search of help. Truck drivers frequently raped her. "Thank God those days are gone!" She dried her tears, took an orange, and peeled it. "Now, I can eat the pulp and throw the peel," she said proudly and laughed.

Silvana and Juliana moved from what they considered a depleted form of urban life to one others consider uninhabitable because of hydrological risk. Yet, the likely-to-become amphibious space they inhabited did not worry them. What they feared was losing their children, being considered faveladas, or falling back into extreme poverty.

Conclusion

February 12, 2020. It is the rainy season in São Paulo. I send a text message to Adriana to ask whether the riverbanks are holding. Calm and chatty, she shares some photos of the river at the edge of the pathway. The water may soon flood her shack. She also sends me a video of her husband joking with their children about the torrent coming down from the nearby hill. In the meantime, I receive a message from the Civil Defense of the Tremembé/Jaçanã districts: the situation is of high risk, and

they are ready to deploy safety measures in the camp. The contrast between Adriana and her family's perception of flood risk and the officers' criteria is striking.

Squatters along the Tremembé river have accepted the floods as a part of life and, in the meantime, have organized their lives in unpredictable ways. Amidst risky conditions, Black and Brown women in the Tremembé camp have crafted a new sense of domesticity for themselves and their children. They have done so through "rhythms of endurance" (Simone, 2018, p.13) and the material reconstruction of their domestic environments, be they shacks, home appliances, or food. "No matter how improvised, lives need to be held, supported" (Ibid., p. 9), even if they occur under systems of oppression and are under strict survival conditions.

Since people living in risk areas engage in the "normalization of threat" (Bankoff, 2004, pp. 102, 109; Van Voorst 2014, p. 29), it is critical to analyze their everyday spaces and practices of survival, to realize that the impact of climate collapse recedes into the background. My fieldwork shows that the squatters threatened with flooding and evictions have escaped more impelling dangers, like economic breakdown and lack of shelter. They feared police violence and social stigma more than flooding. They ignored the consequences of climate change and focused on their rebuilt livelihoods. Evicting them to avoid flood-related accidents without preserving their livelihoods would destroy years of assiduous reconstruction. It would sustain a path of continuous displacement (by immigration, rent eviction, and climate change) and socially assigned disposability (Butler and Athanasiou, 2013; Nygren and Wayessa, 2018).

Understanding the distributional injustice of flooding under climate collapse means going beyond hydro-geological algorithms that objectivize individuals as lives at risk to be evicted. It calls for a thorough investigation of intersectional ecologies involving human and more-than-human actors where new forms of environmental citizenship emerge (Latta, 2013; Coates, 2019).[9] It implies seeing the home in risk areas—a crisis-prone space due to climate change—not as the uninhabitable but as the familiar and intimate.

The disconnection between what governments and climate displaced people consider habitable is dramatic, especially when the displaced are forced to leave their homes for more precarious relocations and lives. As I argue in other writings, the disproportionate harm of climate collapse on specific populations living in risk areas derives from specific regimes of government and structures of coloniality, including racism, heteropatriarchy, and ecocidal forms of oppression.[10]

9 We address these themes in the working group and forthcoming e-journal *Intersectional Ecologies*, funded by the Center for Race and Gender at UC Berkeley.

10 I presented the paper "Racial and Gendered Ecologies of Risk in São Paulo" at the 2021 Latin American Studies Association Congress. I will share an updated version of the essay at the Annual Meeting of the American Association of Geographers in February 2022. This research, part of my dissertation and anticipated book, was funded by the Fulbright-Hays Doctoral Dissertation Research Abroad fellowship. To guarantee the anonymity of my interviewees, I substituted their real names with fictional ones. All transcriptions and translations from Portuguese are my own. For currency conversion, I adopted the Brazilian Real/USD average rate for November 2019 (1$= R$4.264).

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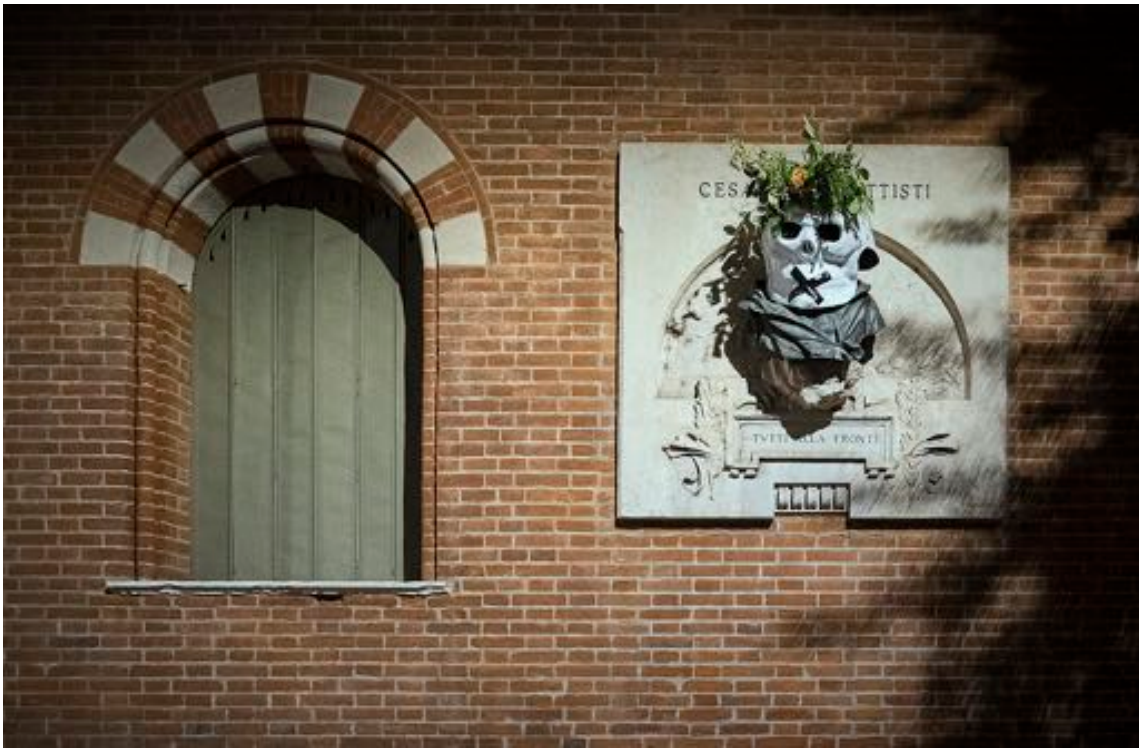

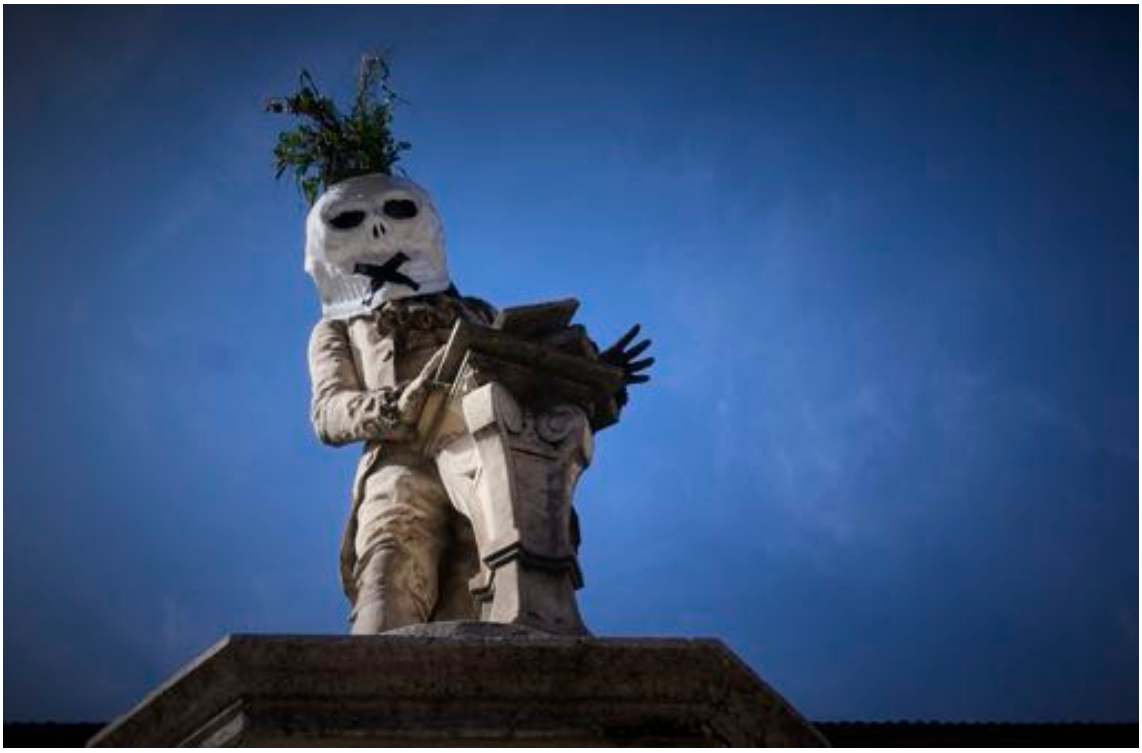

Between peripherality and resilience Reflections on peripheral urbanization and urban resilience interventions in South-East Asia

Francesco Pasta

Against the backdrop of an unfolding "urbanization of risk", this article looks at the linkage between resilience and the periphery. In mainstream planning risks and vulnerabilities – and, consequently, the urgency for "urban resilience" – appear to concentrate mainly in the world's rapidly expanding metropolitan peripheries. Across the purportedly overpopulated, under-infrastructured, dysfunctional "Southern" megacities – peripheral urban centres that have long been at the margins of urban theory (Simone, 2010) – risk appears to concentrate in those peripheral spaces, developing on the margins of formality and legality, which often harbour much of the city's population: low-income informal settlements, makeshift slums or unauthorized squatter neighbourhoods, which "generally suffer the impacts of climate change and natural disasters disproportionately as compared to other settlements" (UN Habitat, 2020). It is primarily in these "peripheries within the periphery" – framed in terms of underservicing, vulnerability, exclusion, and lack – that the prospect of social unrest, environmental disaster, or infrastructural breakdown becomes especially concrete.

Consequentially, rendering the Southern megacity resilient is largely implemented by tackling its peripheral settlements, often discursively constructed as spaces of risk in themselves, rather than neighbourhoods where disasters overlap with multiple pre-existing vulnerabilities. Despite the recommendations for inclusivity, community-based preparedness and a multi-hazard approach contained in official policy papers,[1] in practice the narrative on climate change adaptation often ends up reproducing conditions of peripherality and risk, creating new vulnerabilities, imposing hidden costs, or just relocating hazard – and often all of them together.

Yet, these urban peripheries also constitute a "terrain of habitation, livelihood, self-organization" (Roy, 2011), developing around human and material infrastructures of care and maintenance (Simone, 2010). "Peripheral" urbanization may indeed be defined as a specific modality of spatial production, primarily driven by residents themselves, which "unfolds transversally in relation to dominant logics and amidst political contestations" (Caldeira, 2018), developing incrementally into "seemingly spontaneous and makeshift settlements" (Schmid et al., 2017) with a great capacity of adaptation to their inhabitants' needs.

My aim here is not to deny the vulnerability of informal settlements where populations eke out a precarious life, nor to advocate for bottom-up solutions as sufficient to fix structural issues of under-servicing and macro-scale imbalances. Rather, I intend to focus on how the narrative on resilience contributes to the discursive construction of peripherality, thus feeding into the logic of a "telescopic urbanism" (Amin, 2013) which selectively focuses on specific parts of the city as disjoined fragments

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1 See, for instance, the Sendai Framework 2015-2030 (UN, 2015).

rather than an organic whole, erasing from view other spaces and forms of urbanism, and ignoring the underlying interconnections.

This article reviews some disaster risk management (DRM) urban policies impacting low-income informal settlements in three flood-prone South East Asian megacities (Jakarta, Manila and Bangkok), discussing how the construction of urban resilience is operationalized and contested by both governmental actors, civil society, and local communities.

Jakarta, Manila, Bangkok: flooding and the politics of disaster risk management in three sinking megacities

With high regional rates of urbanization[2] and widespread exposure to climate hazards, South-East Asia constitutes an interesting standpoint for studying the relationships between DRM and the politics of urban development. In Jakarta, Manila and Bangkok, among the most populated urban areas in the region,[3] fast-paced urbanization coupled with the manipulability (or outright lack) of planning produced sprawling urban areas, encroaching on environmental ecosystems (Zoleta Nantes, 2000). The mismatch between low-cost housing supply and the growing demand, furthermore, resulted into the emergence of informal settlements as a "spontaneous" housing solution for the urban poor.[4] Since the 70s, under both democratically elected and undemocratic regimes, the drive to restructure urban space to serve the logic of globalizing economies put growing pressure on low-income informal settlements (Kolovou Kouri et al., 2021). This often resulted in eviction and displacement, in particular for those located on central, more valuable land.

The three capital cities are located on coastal river plains and naturally subject to flooding, with man-made factors considerably amplifying the risk. The depletion of natural flood-preventing ecosystems and unconstrained concretization of land are increasing the speed and intensity of water flow, making floods more unpredictable and sudden. These cities have all been categorized as "sinking cities": urban areas in which excessive groundwater extraction coupled with the pressure of the built mass causes marked subsidence (Kramer, 2018). Many low-income informal settlements are located alongside waterways, thus on the flooding frontline (CODI, n.d.; Dovey et al., 2018; Alvarez and Cardenas, 2019).

These overlapping factors make flooding a periodic and intensifying occurrence, disproportionately affecting informal settlements and figuring prominently on local urban development agendas. In this context the discourse over resilience, far from being a mere technical issue, intertwines with political questions of socio-spatial justice. Resilience is articulated in selective and biased ways, privileging some solutions over others, condemning some practices but overlooking others, preserving and protecting specific spaces and populations while attempting at erasing and relocating others. It often provides a ground to justify the displacement of the urban poor. At the same time, examples of community-based practices contest this narrative and indicate other possible routes towards urban resilience.

About 40% of Jakarta lies below sea level, and the city is sinking at a pace of 8-12cm per year (Dovey et al., 2018). The system of canals and dams built by the Dutch to manage the flood-prone city is largely in disrepair, and during the 2007 floods, 45% of the city was underwater (Ibidem). "River

2 Urbanization rates in the 2015-2020 timespan stand at 1.73% for Thailand, 2.27% for Indonesia and 1.99% for the Philippines – only to mention the countries treated in this paper (UN Habitat, 2020).

3 Jabodetabek (or Greater Jakarta) counts 31,652,751 inhabitants, Greater Manila 13,984,656, and Bangkok's metropolitan area 14,626,225 (Kolovou Kouri et al., 2021). Each city is the largest in its respective country and the political and economic centre.

4 It is estimated that 35.8% of the population lives in informal settlements in Bangkok, about 20-25% in Jakarta (plus 4-5% of riverside dwellers) and 37% in Metro Manila (Kolovou Kouri et al., 2021).

normalization" has become a catchphrase to flood-proof Jakarta by erecting concrete retention walls along the city's water streams. This entails the demolition of thousands of buildings in the city's *kampungs* (Indonesian for "village"), the historical low-income neighbourhoods hosting much of the city's underclasses.

In the past decade, contention over riverside *kampung* clearance has thus become a central debate for Jakarta's urban development. *Kampung* residents associations, civil society organizations, and activist networks (such as Ciliwung Merdeka and Urban Poor Consortium) have been advocating against the normalization, for the residents' right to stay, and for the need to devise alternative solutions. They called for "soft" risk management strategies, building on the adaptive practices developed by residents, for which flooding is a regular occurrence. For instance, in case of high water, dwellers empty ground floors and set up a system of elevated gang planks connecting the houses on upper floors and dry areas (Shepherd, 2014). In Kampung Pulo and Bukit Duri, two historical *kampungs* located on opposite banks of the Ciliwung river, communities produced a concept design for a "stacked *kampung*", a vertical upgrading which, while respecting some of the government guidelines, combined amphibious spaces (leaving the ground-floors open to let water flow) with vertical densification, to ensure that the inhabitants could remain in place (Shepherd, 2014; Dovey et al., 2018; Padawangi, 2019). Their discourse found sound political back-up,[5] however evictions and demolitions moved forward.[6] Riverside buildings have been razed and a concrete embankment built along the shore, equipped with an "inspection road" on top (Dovey et al., 2018). Eligible families were relocated to high-rise government-built social housing, and some received compensation, but many were left to their own devices (Kolovou Kouri et al., 2020).

The narrative on climate change adaptation often ends up reproducing conditions of peripherality and risk, creating new vulnerabilities, imposing hidden costs, or just relocating hazard – and often all of them together.

In Tongkol, located on the riverbank near the Old Town, an organized local community, allied with sympathetic professionals and NGOs, managed to avert relocation. Here, a 5m-strip of land had to be cleared on the water edge to comply with governmental standards (CAN, 2015), but in response, a community-led neighbourhood restoration and renewal was carried out, including the self-demolition of structures too close to the water edge and the construction of a three-storey community house prototype (Dovey et al., 2018). Physical upgrading was complemented by a broader communication campaign, celebrating the value of the *kampung* as a traditional settlement, and highlighting the role of riverside communities in cleaning the river. Until now, residents of Tongkol avoided eviction, which seems to be the main threat to their livelihoods, definitely greater than the yearly flooding.

With a population density among the highest in the world, Manila lies between the Ocean and the Laguna de Bay (a natural lake and impoundment basin for the city), and is transected by numerous rivers. The city is often battered by floods,[7] the last major one in 2020 (Manila Times, 2020). In their poignant critique of DRM urban policies in Manila after the catastrophic cyclone Ondoy,[8] Alvarez and Cardenas (2019) remark how the designation of "risk area", and the consequent interventions, were

5 Joko Widodo, who went on to become president of Indonesia, was elected governor of Jakarta in 2012 with an anti-eviction programme (Shepherd, 2014). His credentials were based on pro-poor urban policies he previously implemented as mayor of Surakarta.

6 In 2015-16 alone, about 13,800 families got their homes destroyed around Jakarta as part of the normalization plan (Sofian, 2018).

7 UAs an archipelago in the Pacific Ocean, the Philippines consistently rank among the hardest-hit countries by climate change-inducede extreme weather events.

8 Ondoy hit the Philippines in 2009, causing the death of 241 people and the destruction of 14,836 homes in Manila alone.

selective and politically charged. While low-income settlements on waterways were targeted as sites of danger and consequentially cleared, the government turned a blind eye on the high-end property developers' illegal practices – ranging from natural drainage infill to waterway course alteration, from the construction of security walls to the widespread concreting of land – which impact on flooding on a metropolitan scale.

For instance, residents of Samasa, an informal community situated on a drainage canal in Manila's Valenzuela district, reported how the construction of perimetral walls in the surrounding middle-class properties not only hindered water outflow in case of heavy rainfall, but also prevented slum residents from escaping (Informal talk, 2013). This small scale example points to systemic dynamics impacting on the city metabolism, spreading risk unevenly among its inhabitants. However, the narrative underpinning urban resilience schemes portrayed slum-dwellers as endangering not only themselves, but the rest of the city too. This provided a justification for the eviction of at least 1,286 families living in waterside informal settlements which were marked as blockages hindering water flow with their built structures, sewage and waste (Alvarez and Cardenas, 2019).

This asymmetry is contested by urban poor organizations, such as the Alliance of Peoples' Organizations Along Manggahan Floodway (APOAMF), which brings together communities living on the artificial floodway linking the Marikina river to Laguna lake and was founded in the aftermath of typhoon Ondoy to avert forced relocation (Chorover and Arriens, 2020). They denounce how government-led flood-prevention plans are carried out with no consultation and how forced resettlements negatively affect their lives, for many reasons – among others, poor housing inadequate to their livelihoods, far-flung locations, and the dissolution of community networks. Their concerted efforts resulted in the drafting of so-called "People's Plans", community-based proposals for flood-resilient communities which incorporate "flood measures, evacuation plans, zero casualty, and mitigation concepts" (Perreras, 2017) learned first-hand by people that have been living in flood-prone neighbourhoods for decades. In some cases these proposals developed further, as in Pasig City, where slum-dwellers successfully campaigned to get multi-story social housing where many families (that would otherwise have been relocated up to 95km away), were able to continue living close to their jobs and social networks (Chorover and Arriens, 2020).

Built on the estuary of the river Chao Praya, Thailand's main water conduit, Bangkok developed historically on a web of canals (known as *klongs*), many of which have been covered and turned into roads (Lei Win, 2017). There are 1,161 such canals in Bangkok, many lined with informal settlements, sheltering about 24,500 families (CODI, n.d.). In 2011, major floods exposed both the inadequacy of Bangkok's antiquated infrastructures and the uneven socio-spatial distribution of risk, driven also by political choices: inner districts were protected at the expenses of more peripheral areas, and low-income neighbourhoods disproportionately affected (Archer et al., 2020).[9] Following the disaster the government implemented a large-scale DRM plan, which has been criticized for privileging visible hard infrastructure interventions (such as dykes and dams) over less noticeable actions such as urban development management, wetlands restoration, coping capacity building (Marks, 2015).

However, there are significant examples offering a perspective in which low-income communities living on the canal side are an active component of urban resilience rather than an impediment to it. Thailand has a progressive and successful housing scheme, called *Baan Mankong* ("Secure Housing"), which channels public funds to low-income communities in the form of collective soft loans and subsidies for land acquisition, housing upgrading, and infrastructural improvements (CODI, 2012). In 2004, with funding and expertise from the programme, a network of canal side communities living

9 It has been calculated that 21% of Bangkok's metropolitan population was affected by the floods, but among the low-income population the rate is 73% (UN Escap 2012, in Archer et al., 2020).

on *klong* Bang Bua started an ambitious project of on-site upgrading, convincing the authorities to grant them a long-term land lease (ACHR, 2008). The redevelopment included physical improvements (comprising a canal-side walkway that became a popular public space), activities for canal cleaning and pollution reduction (with low-cost technologies like effective microorganism (EM) and grease traps), and grants for setting up water-related livelihood activities (like fisheries and aquaculture). The aim, thus, was also to reshape the image of waterside slums from "illegal squatters" and "polluters" to that of legitimate citizens and a partner in the maintenance and revitalization of canals and flood prevention (CODI, 2012). Bang Bua upgrading gained widespread visibility, and the process of collaborative canal-side upgrading spread to other communities along the *klong*, and also to other major canals in Bangkok: in 2016, the government funded projects for the Lad Phrao canal, now at an advanced stage, and subsequently for Prem Prachakorn canal (CODI, n.d.).

Complexifying the relation between peripherality and resilience

This concise review illustrates how the resilience discourse has been controversially operationalized across three fast-growing and risk-prone South-East Asian megacities, in particular with regards to flood risk mitigation and waterside informal settlements.

We may observe a reversal between stated aims and the means deployed: while the eviction of informal communities is depicted as a necessary measure to attain flood risk mitigation – in the interest of both informal dwellers themselves and the city as a whole – flood-proofing is actually deployed instrumentally, as an argument for slum clearance. Despite the lack of scientific evidence linking waterside settlements and flooding (Dovey et al., 2018; Alvarez and Cardenas, 2019), deep-rooted representations of the slums as sites of unsafety, poverty and precariousness are mobilized to unilaterally recast these informal settlements as spaces of risk. At the same time, the impact of real estate development, upper-class lifestyles, industrial and agricultural activities on urban ecology and the metabolic flows are hardly taken into account. Far from being a depoliticized evidence-based planning matter, the production of *hazardscapes*, or landscapes of risk (Saguin, 2017) thus emerges as a contentious socio-spatial dynamic, producing differentiated territorial effects and compounding pre-existing socio-spatial inequalities.

However, the successful efforts and concrete examples of low-income "peripheral" communities suggest an alternative approach, one in which resilience is not dismissed, but rather it is mobilized, contested and re-framed. By highlighting how flooding is one among different factors contributing to their everyday uncertainty (and not necessarily the most pressing one) these communities do not dispute the need for effective disaster risk management, but reclaim a stake in shaping it. Peripheral urban settlements recast themselves as elements that actually increase the resilience of urban systems, rather than the cause, or a symptom, of urban vulnerability. In order to concretize this narrative and scale up their action, they often rely on broader social alliances, external support and collaborative planning – from city-wide horizontal networks to activist solidarity, from NGO technical assistance to state-managed public funding. By advocating for their right to be considered a legitimate part of the city and to play an active role in its socio-ecological system, these communities question and complexify both mainstream understandings of "resilience" and "peripherality".

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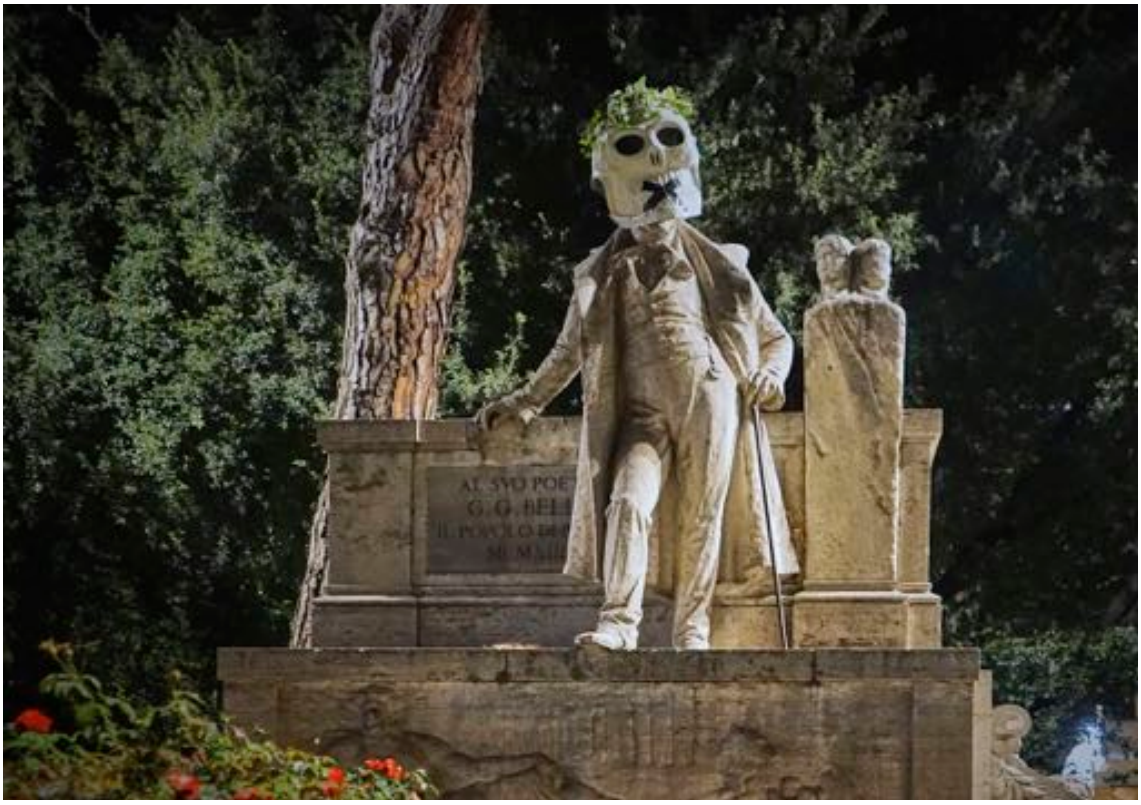

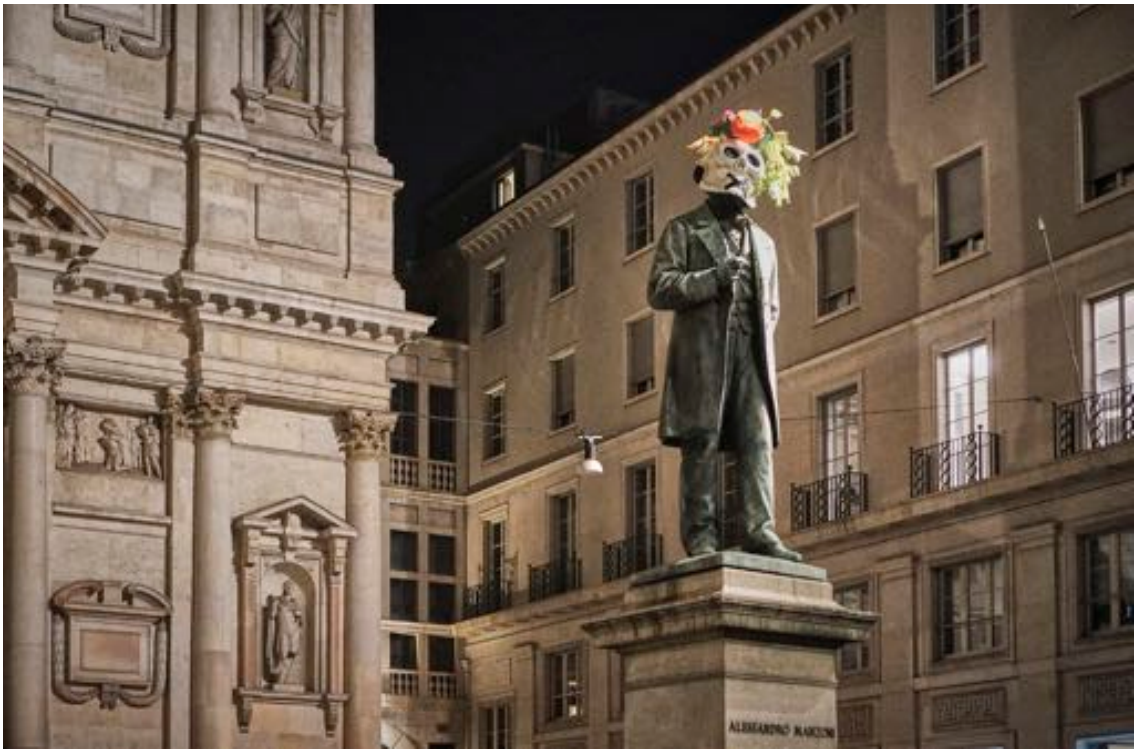

Visions for Urban Futures

Marcello Di Paola

At the dawn of a new millennium and with global demographic levels at an all-time high, cities across the world are growing in numbers, expanding in size, and tooling or re-tooling to host, attract and exchange billions of humans living increasingly interconnected lives (UN Habitat: *The Quito Papers* 2018). As cities morph and re-morph to accommodate larger and changing populations, they confront and further propel global, unprecedented, and accelerating political, technological, socio-economic and environmental changes and challenges. These, in turn, are projected onto city forms and dynamics, and ultimately onto the lived experience of people and communities.

While modern cities and the lives they afforded were shaped by industrial infrastructures, future cities and urban lives are likely to increasingly be shaped by digital and bio-ecological (often called 'nature-based') infrastructures and their hybridizations and mashups. For general purposes of urban growth and sustainability very broadly understood (to make cities richer, safer, more innovative, more efficient, more productive, more inclusive and participated, more resilient and self-reliant, as well as less stressful, less wasteful, less polluted, less polluting, and less demanding of natural resources)[1] , increasing numbers of non-human entities, processes and systems are already being invited into the traditionally very human context of the city, and included or even presupposed in city planning and everyday life.

Two distinct families of non-humans are gaining urban prominence. On the one hand is the digital family constituted by codes, algorithms, sensors, data, clouds, data mining and processing systems, platforms, actuators, monitoring systems, IT technologies, AI-driven ubiquitous computing, augmented and virtual reality systems, and more – all ideally connected to the smartphones, wearables, and vehicles of individual human city dwellers. In common parlance, as well as in the media and much political communication, cities that include and rely on many of the elements from this digital family are typically called "smart". On the other hand is the bio-ecological family constituted by plants, fungi, animals, gardens, allotments, parks, water courses and circulation systems, forests, wildlands, agricultural fields, protected areas, biodiversity corridors, composting areas, and more – all ideally reachable and accessible with relative ease by each individual city dweller at any time. Cities that include and rely on many of the elements from the bio-ecological family list are typically called "green".[2]

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1 An useful philosophical articulation of the manifold aspects of urban sustainability is in Kirkman (2010).

2 A concept that has recently gained prominence as a general framework for both smart and green urban planning is that of a "15-minute city", one in which citizens have access to all city services and amenities within a 15-minute travelling radius by biking or walking from wherever they may find themselves at any time. The 15-minute city model is based on a vision of self-sufficient hyperlocal communities that refers in various ways to the works of E. Howard (1902) and J. Jacobs (1961).

Somewhat surprisingly, urban greenness and smartness share a common, apparently unlikely genealogy, which is articulated in the next section.

Utopian Urban Visions, and the Eco-Techno Spaceship Model

During the 1960's, in the US and elsewhere, neighbourhood urbanism and environmentalism converged in many cities in various and often unplanned ways. In the US and elsewhere, a most poignant deliverance of such convergence were community gardens, self-managed neighbourhood spaces often occupied or reclaimed by local individuals and groups for food-producing purposes (Di Paola 2017). As urban issues of race, gender, and class became increasingly entwined with concerns for local and global environmental health and sustainability in the seventies and eighties, community gardens became bastions of resistance and contestation against the "cataclysmic money" (to use Jacobs' words) and rapid technological changes that were remaking neighbourhoods and whole cities by elongating them to the sky and/or by sprawling them further across the land - in both cases typically to the detriment of socio-economic minorities and in environmentally unsound ways (Pasquali 2008).

While important similarities exist, as well as a shared genealogy, smart and green visions of urban futures are fundamentally different paradigms for urban development.

Despite its overall marginality to the real-world urbanization processes of the past decades, the small-scale, ecologically conscious urban utopian thinking that wanted cities filled with self-managed neighbourhoods and community gardens seeded practices and consolidated concepts that have now - in riper times of globalization, rampant urbanization, accelerating technological progress and ecological crisis - become central to current visions of green and smart cities.

As for practices, one obvious example is urban agriculture, a pillar of both green and smart visions of urban futures that are less wasteful, polluting, and emitting along the food supply chain, and more resilient in the face of shocks or fluctuations in global food systems - including those related to climate change, resource scarcity, geopolitics and financial speculation (Di Paola 2017).

As for concepts, one clear and important example is that of a 'closed-cycle environment' - a matrix for the more complex template of 'the circular economy' that informs contemporary smart and green visions of urban futures.[3] Given limited amounts of space and fertile soil, community gardens had to strongly rely on the optimal management of available local resources, including recycled, composted and re-used organic waste, to make up for physical 'limits to growth'.[4] Indeed, in the mind of many urbanites, composting is still something like the epitome of the way closed-cycle environments work (see Pollan 1991).

Although a genealogy of green and smart visions of urban futures must importantly refer to the small-scale, often vernacular experience of neighbourhood urbanism and community gardens, it took a far more complex, refined, pervasive and futuristic "eco-tech" narrative to shape the planning culture that informs contemporary urban utopian thinking green and smart. Curiously, that narrative originated at an even smaller scale than community gardens.

As P. Anker (2005) has explained, the technology, terminology and methodology developed in the

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See https://www.c40knowledgehub.org/s/article/How-to-build-back-better-with-a-15-minute-city?language=en_US

3 For a concise but effective presentation of the concept of 'circular economy' see https://www.ellenmacarthurfoundation.org/circular-economy/concept ; for its operationalization at policy level see https://ec.europa.eu/environment/circular-economy/index_en.html

4 This is another trope that has influenced environmental and political imagination and representations from the seventies onwards. The expression was coined in Meadows et al. (1973).

1960's by military engineers and information theorists who were engaged in research on submarines, underground nuclear shelters, and manned spaceflight has been of paradigmatic importance to ecological thinking. In all those cases, humans had to inhabit cabins for prolonged periods of time. "Cabin ecology" (a term first used in astronautics in the late 1950's to describe the environment inside a space vehicle – Anker 2005: 240) emphasized the idea that each element in the cabin performed a function that favoured the whole, as well as the notion of "carrying capacity", and the working assumption that complexity favours rather than hinders the resilience and sustainability of a system – an assumption shared by information theorists and ecologists alike.[5]

The idea of small-scale, self-sufficient, stable, closed-cycle ecosystems that would utilize solar energy, produce their own sustenance, and recirculate air, water, and waste, all with the crucial aid of technology, enjoyed increasingly large credit among scientists concerned with ecologically sound futures. Expanding out of its cramped early spaces, cabin ecology went global. The notion of "Spaceship Earth" entered the world of design, particularly ecologically experimental urban design, through the seminal work of B. Fuller (1969), who explicitly promoted cabin ecology as the paradigm approach for tackling environmental challenges on Earth, including and particularly those involving city planning and urban habitation and sustainability. The notion of Spaceship Earth also entered economics through the equally seminal work of K. Boulding (1966). In the early 1970's, "Spaceship Earth" became a standard locution in UN talks and documents (Anker 2005: 245). Eventually, the space-floating, self-regulating, cybernetic system of cabin ecology became a model for planetary ecology itself, as in the work of J. Lovelock and A. Margulis (1974).

At urban scales, cabin ecology inspired narratives of technologically enabled ecological balance in resource-challenged environments via increased reliance on renewable energies, solar cells, waste-processing, sewage management, elements recirculation and material recycling/reuse, and possibly food production. With that, it inspired experimental forms of urban planning whose main task became finding ways to scale up closed-cycling, from small spaces like space cabins and community gardens to cities whole.

That is roughly the challenge that cities still face today. According to those working on urban smartness and greenness, technology and planning can help with the upscaling. A utopian "spaceship city" for the new millennium is envisioned to be one in which both the socio-economic prosperity and the ecological congeniality of carefully planned, engineered, and monitored human habitats is ensured by means of infrastructures, bioecological (green) and/or digital (smart), which enable and/or require urbanites to perform everyday practices in ways green and/or smart. Feedback-driven intelligence and more nature-intensive, ecologically savvy design re-structuring human habitation at city scale.[6]

Open questions

The smart and green routes to urban futures are far from being mutually exclusive, and indeed it is something of a platitude today that cities should take both routes simultaneously if the objectives of growth and sustainability are to be met, today and especially in a warmer, more crowded and interconnected future. Clear examples of the complementary nature of (at least some versions of) urban smartness and greenness include precision urban agriculture (i.e. vertical hydroponic or aeroponic

5 Such assumption is today at the heart of the 'circular economy' construct.

6 It is worth underlying that 're-structuring' ought not be understood modestly, as 're-vamping' the existent. It should rather be understood broadly, to also include 're-imaging' city-scale human habitation entirely. Autonomous cities floating in unclaimed international waters are an example of what may come – see www.seasteading.org. For a complex treatment of the relation between imagination and the architecture of future cities see Dobraszczyz (2019). It is equally worth noting that such bold re-imaginings could entail some significant restructuring of global politics.

farms), AI-based traffic control, and smart energy grids, among others.

Most of those working on urban smartness do so with urban environmental sustainability in mind: climatic adaptation, healthier air and waters, less waste production and more recycling, less greenhouse gas emissions and less resource consumption (including through distributed self-production of energy and food) are explicit objectives of most smart city planning. For their part, most of those working on urban greenness fully appreciate the role of digital technologies in enabling the bio-ecological infrastructures they envisage for urban landscapes – including for environmental monitoring, resource use optimization and energy efficiency, urban farming, water and waste management, or the maintenance of green areas.[7]

There is thus a pragmatic as well as a programmatic sense in which urban smartness converges, at least to a large extent, with urban greenness. And there is wide agreement that it is precisely the potential inherent in the compatibility of the two visions, and the promise of synergy and mutual reinforcement, that according to many represents the best opportunity for prosperous and sustainable urban futures. In addition, as suggested in this paper, the two share a common genealogy, rooted in and inspired by cabin ecology.

However, pragmatic and programmatic convergence, and even a shared genealogy, neither presuppose nor imply paradigmatic coincidence. As conceptual and value frameworks (at least as presently articulated by most stakeholders) urban smartness and greenness could still be fundamentally different and even divergent.[8] A likely source of that divergence may be the very different families of non-human entities, processes, and systems that green and smart visions invite into the city (bioecological and digital, respectively), and thus the very different more-than-human relations and practices that they enable, require, and envisage as central to future urban experience.

Indeed, precisely because there is little doubt about the pragmatic and programmatic importance of conjugating them, it is worth inquiring about their paradigmatic compatibility. If it turns out that smartness and greenness are fundamentally heterogeneous and possibly conflicting conceptual and value frameworks for urban development, rather than assuming smooth sailing as we attempt to operationalize them simultaneously we should be assuming a potential tension whose negotiation, then, should be indicated as being of delicate and utmost importance for the future of cities.

Such negotiation will obviously refer to different circumstances, parameters, and factors in different cities at different times - yet all cities will plausibly have to confront questions of emphasis and balance: if the prosperous sustainability of cities is the goal, which vision of urban futures is ideally preferable, a "green smart" or a "smart green" one?

7For further points of congruence between urban smartness and greenness, as well as examples of how cities are attempting to run these together, see https://www.thenatureofcities.com/2017/12/18/can-smart-cities-smart-green-cities-well-see/

8 For a detailed analysis of their paradigmatic differences see Di Paola "Green and Smart Visions of urban Futures" in *Greentopia*, ed. A. Kallhoff, Springer (forthcoming). See also, among others, Greenfield (2017), Sennett (2018).

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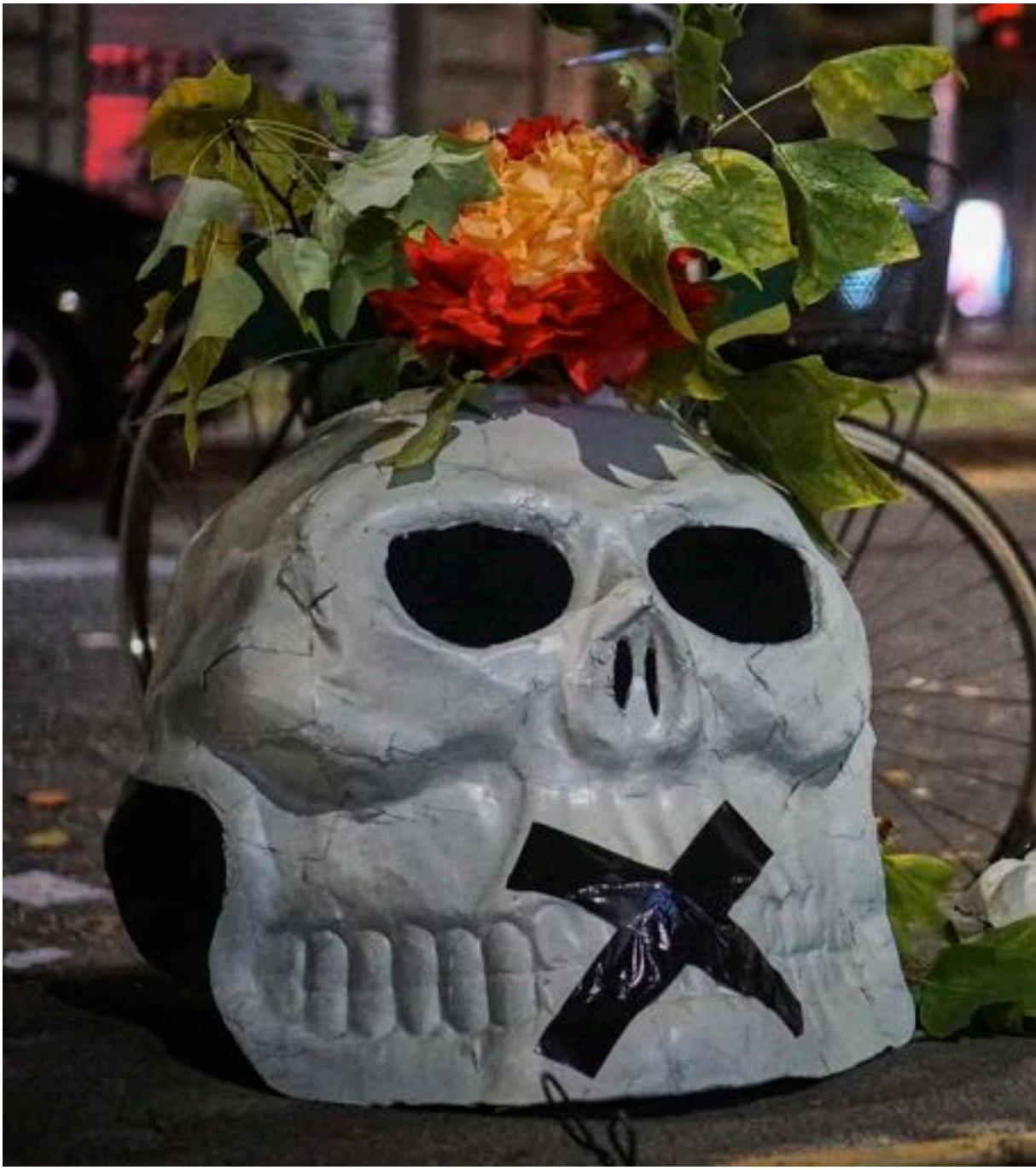

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Climate Turn

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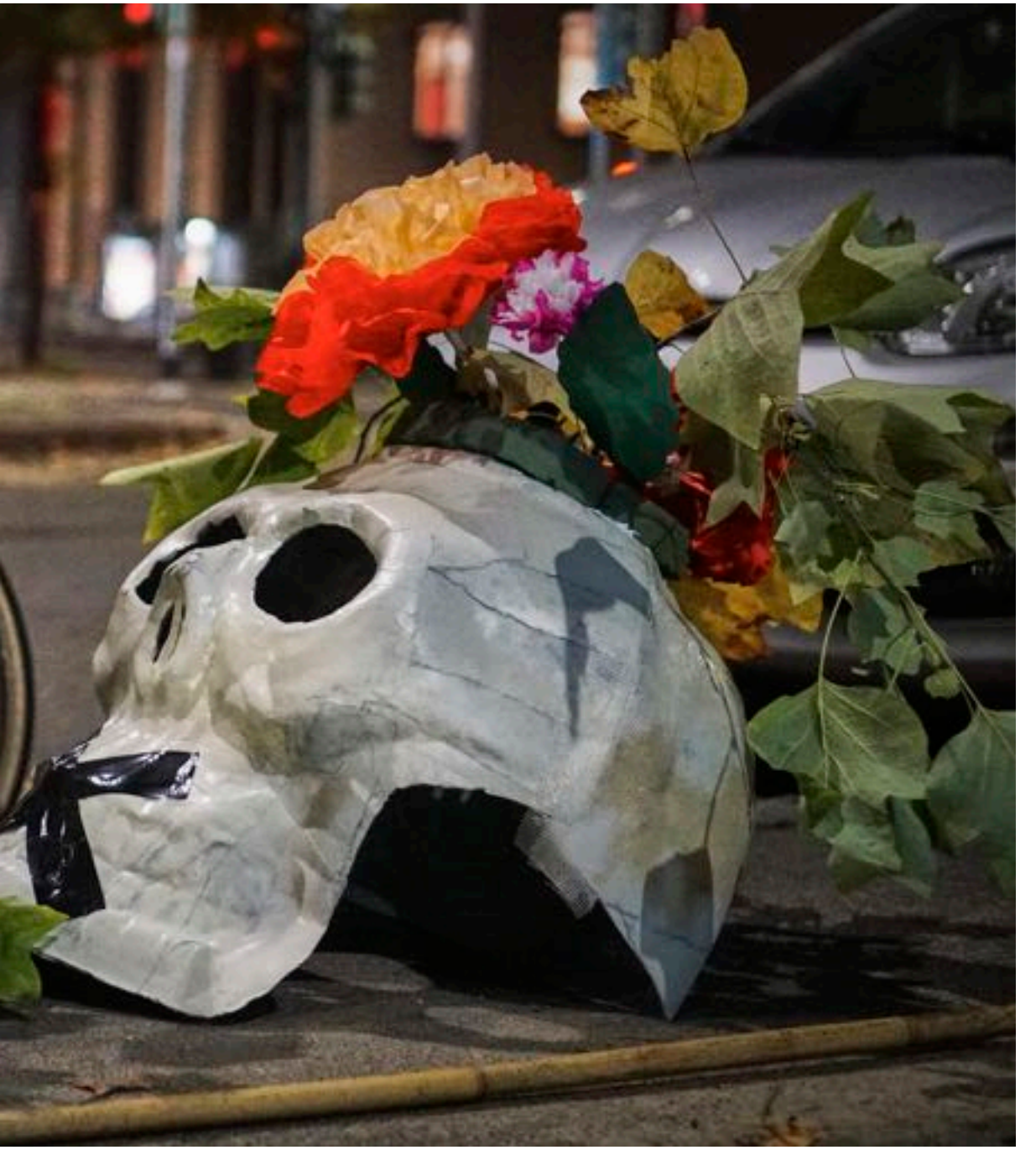

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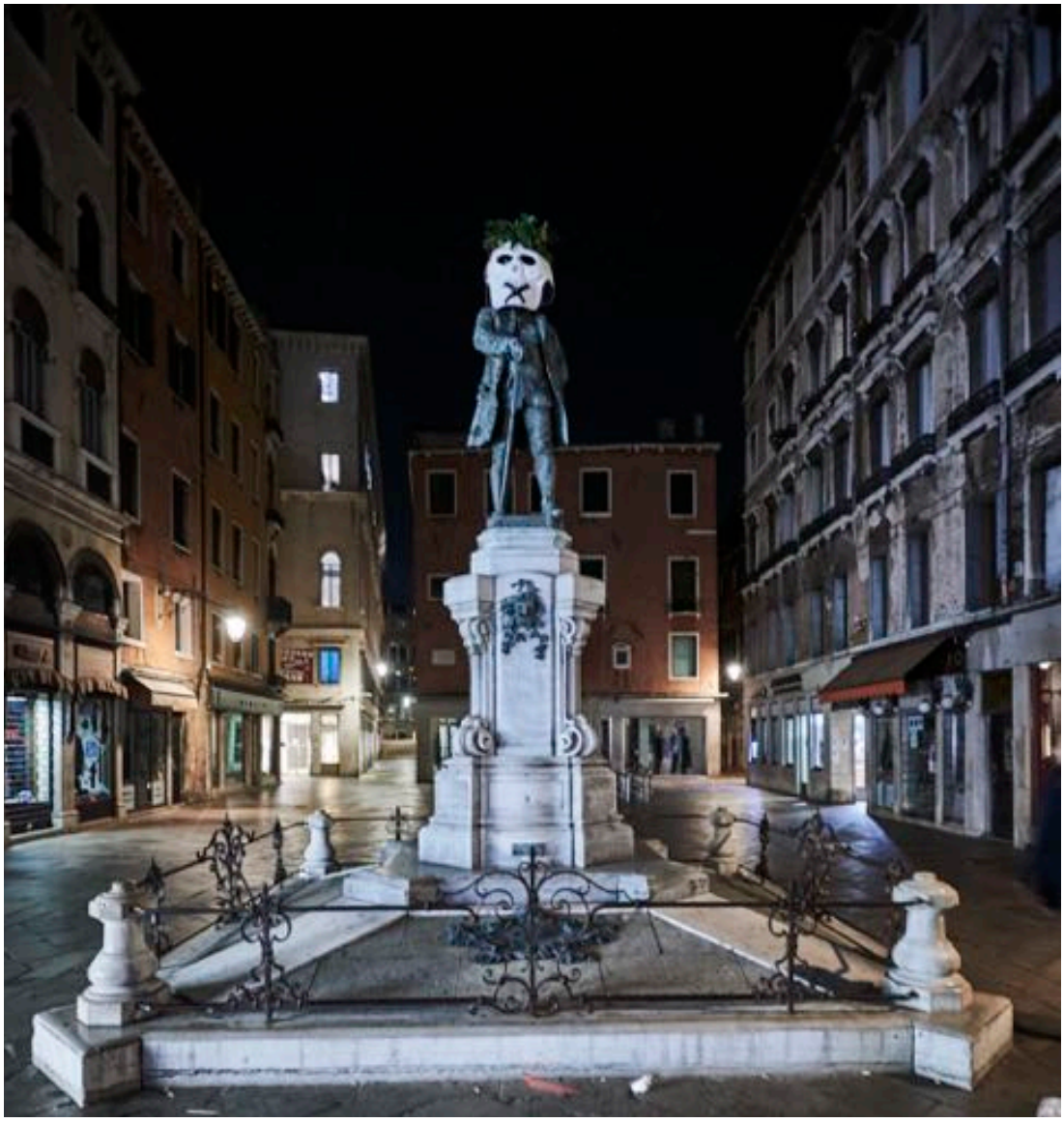

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At Arm's Length. Understanding Distance Management

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