# Transcultural Ecocriticism

## *Global, Romantic and Decolonial Perspectives*

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BLOOMSBURY ACADEMIC
LONDON • NEW YORK • OXFORD • NEW DELHI • SYDNEY

BLOOMSBURY ACADEMIC
Bloomsbury Publishing Plc
50 Bedford Square, London, WC1B 3DP, UK
1385 Broadway, New York, NY 10018, USA
29 Earlsfort Terrace, Dublin 2, Ireland

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First published in Great Britain 2021



Cover design: Eleanor Rose
Cover image: Ocean currents map, 1876 © Getty Images



A catalogue record for this book is available from the British Library.

A catalog record for this book is available from the Library of Congress.

ISBN: HB: 978-1-3501-2163-8
ePDF: 978-1-3501-2164-5
eBook: 978-1-3501-2165-2

Typeset by Deanta Global Publishing Services, Chennai, India

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Ursula K. Heise

## Urbanization and Anthropocene

Urbanization is one of the main characteristics of the Anthropocene. The ecologist Eugene Stoermer and the atmospheric chemist Paul Crutzen mentioned a tenfold increase in urbanization over the course of the twentieth century, among many other benchmarks, when they proposed the Anthropocene or 'Age of Humans' in 2000 as a designation for the new geological era in which we are currently living. A few years later, various divisions of the United Nations published data showing that for the first time in the history of the species, more than 50 per cent of humans lived in cities, a percentage that is expected to grow to 70 per cent by mid-century.[1] While some debate has surrounded the definition of the city and the statistical methods that inform these assessments,[2] there is no disagreement with the basic diagnosis: as the global human population continues to grow throughout the twenty-first century, most people will be born in cities in the first place or end up living there, whereas rural populations will continue to shrink.

Urban populations are forecast to increase particularly rapidly in Africa and Asia, in nations that are poor, in municipalities that have limited infrastructure, and under administrations that lack the will or the means to enforce what laws and building codes exist. Cities will grow, in other words, under what are often called conditions of 'informal urbanization' in which citizens typically have no legal title to their homes, no formal employment contracts and no access to urban grids of electricity, water or sanitation. The geographer Mike Davis has more bluntly portrayed these conditions in many of the world's regions as leading to a 'planet of slums'. Rural populations, he argues, are drawn from no longer sustainable agricultural livelihoods to cities, as rural residents in Europe were during the age of industrialization in the nineteenth century.

But as opposed to European cities two centuries ago, metropolises in the global South today offer many fewer possibilities of employment, leading to the growth of an urban underclass with few practical chances of ascending to a working- or middle-class way of life on the European or North American model.

For environmentalism, urbanization poses a new challenge. As environmental studies scholars Kai N. Lee, William R. Freudenburg and Richard B. Howarth have argued, the older challenge of total population growth that has been one focus of environmental concern, from Paul Ehrlich's classic *The Population Bomb* (1968) to Alan Weisman's *Countdown* (2013), has found a clear, if slow, solution in the demographic transition that began in Europe 200 years ago and is now taking place in most regions of the globe, from high birth and death rates to high birth and low death rates and finally both low birth and death rates. By contrast, the new challenge of growth in urban populations – sometimes even under conditions of overall population decline – has no such clear solution. During the lifetime of today's college students, they highlight,

> humans will create, somewhere in the world, urban settlements containing as many people as in all cities that now exist. This is, potentially, a great opportunity: to build a sustainable urban habitat that works economically, environmentally, and socially for its residents. And it is a daunting challenge because this habitat is already being built, willy-nilly, and much of it is locking in a dependence on automobiles and other technologies that will be difficult to implement in an environmentally sustainable fashion.[3]

Urbanization is not just a challenge for the environmental movement because it contributes to socio-economic inequality and creates unsustainable habitats, important as these dimensions are. The growth of cities also forms part of the pervasive reshaping of planetary ecosystems that the concept of the Anthropocene points to. 'Growing cities replace one landscape, largely natural in its functions, with one in which human control dominates. The creation of a human habitat in cities is expensive and permanent in the way it transforms ecosystems. The urban environment may be the greatest unrecognized environmental challenge of the twenty-first century.'[4]

This challenge is increasingly being addressed, however, by research in urban ecology and urban planning that recognizes cities as a novel type of ecosystem with its own climatic characteristics such as the urban heat island effect, its own soils, fauna and flora. Biologists such as Menno Schilthuizen have even pointed



to evolutionary processes that are tied to urban environments.[5] Over the last thirty years, an ever-increasing number of studies and organizations has also addressed urban political ecology – research on the causes and structures that coproduce uneven natural spaces and unequal social conditions – and urban environmental justice, research and advocacy on behalf of those who suffer the consequences of these inequalities, from lack of access to green spaces to pollution exposure and disproportionate vulnerability to other risks such as flooding, water scarcity and fires.

Climate change has loomed large in these reimaginations of urban nature and urban futures. From Matthew E. Kahn's *Climatopolis* (2010) and Peter Calthorpe's *Urbanism in an Age of Climate Change* (2011) to Ashley Dawson's *Extreme Cities* (2017) and Jeff Goodell's *The Water Will Come* (2017), to name just a few, urban planners, geographers, journalists and environmental activists have foregrounded the risks that face coastal cities inhabited by hundreds of millions of humans worldwide. Whether they seek the answer to the urban risks of climate change in the functioning of markets, as Kahn does, or in the wholesale overthrow of capitalist market mechanisms, as Dawson suggests, the city is at the centre of their attention: in particular, the city flooded or drowned because of rising sea levels and increased storms, rather than the city dried up because of heat, drought and aquifer depletion. If the recent water crises in Chennai, Capetown and São Paulo suggest that dry cities may be as likely as flooded ones in the age of climate change, it is nevertheless the drowning or drowned city that has served as the focus of narratives about the future of cities. Indeed, drowning cities tend to loom large even in those studies that are primarily focused not on urbanism but on climate change broadly understood, such as David Wallace-Wells's *The Uninhabitable Earth* (2019). The flooded city, in other words, has become one of the principal proxy images for climate change in public discourse.

In this chapter, I will focus on fictional rather than nonfictional narratives of climate futures to show that in this genre, too, drowning cities have played a crucial role in portraying climate change. In the second section, I will outline some of the typical story templates that recur in many novels, films and short stories whose climate-change scenarios revolve around a flooded city. In the third and fourth sections, I will take a more in-depth look at two works that adopt more unusual and original idioms and plot lines to portray drowning cities: Saigon in Nguyễn-Võ Nghiêm-Minh's film *Nước 2030* (*Water 2030*, 2014) and New York in Kim Stanley Robinson's *New York 2140* (2017).

## Drowning cities: An aquatic anatomy

Literary scholars as well as journalists and experts in environmental communication have intensively explored the question of how our most common literary forms might deal with the challenges of portraying an ecologically altered world. The journalist Dan Bloom coined the term 'cli-fi', or climate fiction, in 2007, obviously on the assumption that a new genre had emerged to address if not the Anthropocene in all its dimensions, then at least climate change, its most publicly discussed manifestation. How climate fiction might be defined by anything other than a broadly shared theme, however, is not as yet clear. Literary critics such as Adam Trexler and Timothy Clark and writers such as Amitav Ghosh have foregrounded the difficulty of representing events at the temporal and spatial scales that appear necessary to engage with global warming and other aspects of the Anthropocene, as well as, to a lesser extent, the question of how non-human agency might be portrayed in such contexts.[6] Yet in spite of the doubts and reservations about the ability of current forms of poetry and narrative to portray climate change adequately, several hundred poems, short stories, novels and films about climate change have already been published, and more continue to appear in a variety of languages each year. Many though by no means all of them adopt central themes and narrative strategies of science fiction, which is itself becoming an increasingly common genre even in regions and literatures that do not have a deep tradition in this form of narrative.

How, then, do climate fictions create an image of the world? By what narrative and metaphoric strategies do they represent a global environment caught up in processes of rapid change? In looking for such an anatomy of the climate change story, a few major plot patterns and narrative strategies emerge that repeat themselves across many works with variations. I will briefly highlight three of these story templates here: the climate disaster story, climate dystopia and the climate proxy story.

The most salient of these story templates is no doubt the climate disaster story, equally prevalent in novels and film. It focuses on a major hurricane, flood, fire or other climate catastrophe that is predicted by scientists but ignored by authorities and public, and that ends up causing large-scale and spectacular damage to people and built environments. Environmental film scholar Alexa Weik von Mossner has called this genre the 'Nature Attacks' film, which 'combines spectacular scenes of weather-related disaster with a melodramatic storyline, all the while lecturing viewers about the great risks associated with abrupt climate change. Such disaster scenes need not be scientifically accurate,



nor does the natural spectacle itself have to be authentic . . . the very condition of a dangerously active nature precludes filming the actual thing'.[7] The plot usually revolves around a nuclear family that is threatened by disaster but ultimately saved, usually through the heroic action of the father figure. It is only after the damage is done to society at large that rethinking or reform takes place. In spite of major losses, the ending is, if not happy, usually at least mildly optimistic.[8] Roland Emmerich's feature film *The Day After Tomorrow* (2004), the first film to take on climate change, illustrates all of these narrative ingredients in its focus on the family of a scientist, initially ignored by authorities, who sets out to rescue his son from drowned and frozen Manhattan.[9]

More recent works offer variations on this pattern. In Liz Jensen's *The Rapture* (2009), the protagonist, Gabrielle Fox, is a psychotherapist who has remained paralyzed after a car accident. She is assigned as a patient a disturbed teenager, Bethany Krall, who has murdered her mother. Bethany suffers from what initially seem like paranoid delusions about impending disasters, but her predictive visions become, time after time, ecological realities. Fox's superiors ignore her warnings and belittle her for taking what they think of as her patient's hallucinations seriously. In the meantime, the disasters follow each other, and at the end, London is destroyed in a cataclysmic flood, just as Bethany had predicted. As she looks ahead to the bleak future of 'Bethanyland', Fox discovers she is pregnant – a reassertion of the family motif even after Bethany's own suicide. In Nathaniel Rich's *Odds against Tomorrow* (2013), completed in late 2012 as Hurricane Sandy hit New York, the protagonist is a risk analyst who accurately predicts the dangers that his corporate clients may face in the event of a major storm or flood. He is ignored by most, until an apocalyptic hurricane that devastates New York and the Eastern Seaboard turns him into a cult prophet of sorts. But Rich turns the basic story template into a more original narrative when the protagonist rejects his own cult status, refuses to cash in on his predictive powers and in the end decides to remain in a marginal zone of Brooklyn, outside the urban society of Manhattan, which is eagerly rebuilding. His failure to reintegrate casts doubt on whether anything has really changed for society at large. While the spectacular descriptions of Manhattan underwater perfectly illustrate the conventions of the disaster story template, the protagonist's persistent loneliness and his final isolation mark a departure from the disaster novel's typical family focus.

Climate dystopias also focus on the catastrophic consequences of global warming, but they do so while emphasizing a broader spectrum of changes: rising sea levels and heat waves or storms combine with other social and ecological

problems such as population growth, inequality, discrimination, resource scarcity, violence and corruption. Catastrophes unfold more gradually in climate dystopias than in climate disaster stories and typically involve a larger cast of characters so as to create a scenario of structural crisis well beyond one-time disaster. Solutions are more difficult to come by, and the final outlook remains more often pessimistic than in climate disaster stories. In Brazilian novelist Ignacio de Loyola Brandão's *Não Verás País Nenhum (Memorial Descritivo)* (1981; translated as *And Still the Earth*), for example, increasing heat, total deforestation of the Amazon and food and water shortages have led to a military presence and fascist dictatorship that are equal parts futuristic projection and reflections on Brazil's military dictatorship at the time. George Turner's *The Sea and Summer* (1987), set in Melbourne, shows a city beset by climate change and sea level rise that exacerbate gross inequalities between the 'Sweet' and the 'Swill' – shorthands for the wealthy and poor, jobholders and jobless. Paolo Bacigalupi's *The Windup Girl* (2009) juxtaposes the perspectives of four major and a range of minor characters in a future Bangkok devastated by famine, genetic engineering, successive outbreaks of disease and rising waters. In all of these novels, climate change becomes part of a much broader social and political scenario that is criticized with great attention to detail as well as sweeping vistas of entire societies.

A third common story template, the climate proxy story, uses a different narrative strategy. Rather than featuring a wide and diverse array of characters and their differing perspectives, these climate stories focus on an individual character and either a central experience of loss or a series of disappointments that come to stand as a synecdoche for the global losses that are occurring in the background. Finnish novelist Antti Tuomainen's *Parantaja* (*The Healer*, 2010), for example, portrays a poet who searches for his missing journalist wife in a Helsinki that is perpetually rainy, flooded and overrun by climate refugees from much hotter, now uninhabitable regions of the planet. Tapani Lehtinen, the protagonist, as well as other characters explicitly draw parallels between the small-scale tragedies of their lives and the larger ones afflicting the planet. In Megan Hunter's *The End We Start From* (2017), the protagonist's water breaks and she gives birth to a child just as the sea inundates London, in an all-too-obvious parallel that turns parenthood into a proxy for the individual and collective challenges of dealing with climate change. More originally, the geologist in Bulgarian-German novelist Ilija Trojanow's *Eistau* (2011; translated as *The Lamentations of Zeno*) mourns the loss not of a person but of his favourite glacier; here too, melancholy turns into the point of departure and proxy for a broader portrayal, in this case a climate travel narrative.



The climate disaster story, climate dystopia and the climate proxy story are three narrative templates that repeat themselves frequently in climate film and fictions, albeit often with original variations. In these as well as other climate story templates, the scale transition between the experiences of individuals and the fate of regions or even the planet at large is often mediated by the portrayal of a metropolis. This strategy makes sense not only in view of the importance of urbanization as the dominant human habitat in the present and future that I discussed earlier, but also in view of literary-historical traditions. In the history of the novel in the nineteenth and twentieth centuries, cities such as London, Paris, St. Petersburg, New York, Rio de Janeiro, Mexico City, Mumbai, Shanghai and Tokyo have often functioned as narrative microcosms that bring together characters, cultures, technologies and world views from around the globe in uneven, conflictive and sometimes violent encounters. In climate fiction, this figuration of the metropolis as global microcosm takes a new turn as global weather propels characters' migrations and encounters. But as I will show in the third and fourth sections, some earlier strategies of urban narrative resurface in recent works of fiction and film that portray different characters in their struggle with new conditions of existence.

Urban climate narrative draws on the modern tradition of the metropolis as microcosm of the world, but at the same time it often taps into the even older tradition of drowning cities as synecdoches for the passing of civilizations. From the mythic city of Atlantis that Plato claimed was submerged by the gods as a punishment for its antagonism to Athens in *Timaeus* and *Critias* (360 BCE) to the anticipated drowning of Tokyo in Abe Kōbō's 第四間氷期 (*Dai-Yon Kampyōki*; translated as *Inter Ice Age 4*, 1959) and of London in J. G. Ballard's *The Drowned World* (1962), the sunken city has functioned as a major symbol for the end of historical eras, the transience of beliefs and cultures and the eventual downfall of even the most powerful empires. Climate scientists' predictions of increased floods and sea level rise lend a new realism to this age-old trope, which makes it unsurprising that film-makers and novelists have given the drowning or drowned city pride of place in climate fictions and films. From Melbourne under water in Turner's *Sea and Summer* and Denver at the bottom of the ocean in Kevin Reynolds's film *Waterworld* (1995) to New York hit by a tsunami in Emmerich's *Day after Tomorrow*, multiple world cities levelled by floods in Frank Schätzing's novel *Der Schwarm* (*The Swarm*, 2004) and Stephen Baxter's *Flood* (2008), Bangkok drowned in Bacigalupi's *Windup Girl*, London flooded in Jensen's *Rapture* and Hunter's *The End We Start From* and New York navigable only by canoe in Rich's *Odds against Tomorrow*, the spectacular sinking of well-

known metropolises has commanded a central significance in climate fiction. The misery and horror of climate catastrophe, especially for those not affluent enough to protect themselves against the floods, are sometimes foregrounded but often enough overshadowed by the long-established pleasures of urban disaster spectacles. Indeed, in spite of the very real dangers of sea level rise for low-lying cities such as Dhaka, Jakarta or Miami, the sinking or sunken city has become so much of a narrative cliché that it has lost a good deal of its power to convey the real-life threats of climate change to urban life.

But innovative writers and film-makers have revived the flooded city as a vehicle of climate narrative, approaching it from different conceptual angles and with the help of narrative and cinematic strategies that twist the story templates I have mentioned earlier into new shapes. Claire Miye Stanford's lyrical short story 'Neither Above nor Below' (2019), for example, portrays Jakarta in the year 2099 in an ecotopian vein as a city of canals to which humans as well as animals have successfully adapted. The American science fiction novelist Kim Stanley Robinson, in his novel *2312* (2012), describes Manhattan in the early twenty-fourth century as a 'SuperVenice' where canals and aerial walkways have replaced streets in an urban landscape that one of the off-world characters perceives as one of the most natural places she has ever experienced, compared to the artificial habitats humans have built on other planets. Robinson has recently returned to this vision of Manhattan underwater in *New York 2140* (2017), a novel I will discuss in the fourth section. But film-makers are also contributing to the reimagination of the sunken city, as the Vietnamese film *Nước 2030* demonstrates in a surrealist-inspired vision culminating in a submarine Saigon that is both memory and future for the characters.

## Submarine surrealism: *Nước 2030*

Nguyễn-Võ Nghiêm-Minh's *Nước 2030* (2014) is set largely in the titular year in the Mekong Delta, approximately 100 kilometres south of Ho Chi Minh City (Saigon). A vast area of wetlands and rivers at sea level, the Mekong Delta with its towns, agriculture and dense population is projected to be at extreme risk from king tides, floods and rising seas. A brief paragraph at the beginning of Nguyễn-Võ's futuristic film indicates that by 2030, 80 per cent of the population has been evacuated from the area because of climate change. The ensuing plot is presented to spectators through a frame narrative and three acts. In the frame narrative, which appears at the beginning of the film and the opening of the



third act, a young fisher woman, Sáo (Quỳnh Hoa), retrieves the body of her husband, Thi (Thạch Kim Long), from the floating hydroponic farm where he was killed during work. She goes on to seek and find employment at the same farm – perhaps to make a living, but also to find out why and how her husband died. This frame narrative, therefore, cues spectators to expect a somewhat futuristic murder mystery – or a version of the climate proxy story that I outlined in the second section, which uses an individual loss as a synecdoche for collective decline.

But Nguyễn-Võ twists this story template in unusual ways. In the film's first act, Sáo and Thi are shown in the weeks leading up to Thi's death in 2030, leading what looks like the fairly normal life of a poor young couple in the global South: they fish, grow greens, try to conceive a baby and live in a house on stilts in the flooded bay where Thi's land once was. In this part of the film, Nguyễn-Võ cinematically stages an argument that Indigenous and postcolonial scholars have made in more theoretical terms: what is perceived as climate-change apocalypse or dystopia in the global North is often already a lived reality for communities in the global South. Poverty, displacement, precarious food supplies and uncertain futures are nothing new for communities that have experienced colonialism in its various forms. From this perspective, climate change and its consequences are not as new in terms of lived experience as they are in terms of their scientific causes. By the same token, adapting to climate change involves structures of inequality and struggles for justice that have driven progressive political movements for centuries.

The second act adds complications to this basic plot line of a poor young couple coping with difficult circumstances, and of a woman left widowed by her husband's mysterious death. The plot here flashes back to the year 2020, when a university student named Giang (Quý Bình) from Saigon visits the Mekong Delta to do research on plants to be engineered for future climate-resilient farming. Giang and Sáo fall in love after meeting at a bookstore café where she works as a waitress, and Sáo shows him a particular kind of local seaweed that is able to thrive in both fresh and saltwater. This seaweed becomes the core of Giang's research as he genetically modifies it so as to turn it into a crop plant capable of absorbing saltwater – an important asset in the flooded landscapes of southern Vietnam and the world. But at the end of his research, Giang leaves Sáo, returns to Saigon and marries into the wealthy family that funded his research and owns the hydroponic farm where Thi works later on.

In the third act, the film returns to 2030 and the moment where recently widowed Sáo embarks on a quest that combines knowledge, revenge and bare

survival. Two versions of Thi's death emerge from her inquiries. Thi's brother, Thanh (Hoàng Phi), tells Sáo that he heard Giang on the floating farm ordering his men to kill Thi, punishing him for allegedly stealing genetically modified seeds for resale on the black market. But Giang himself later tells Sáo a different version of events: he claims that he hired Thi to smuggle seeds out from his family's farm so that they could be made available to the poor, but that Thi was caught and killed in the ensuing tussle. Just how reliable a narrator Giang might be is not easy to tell – and neither is it clear whether Giang and Sáo's continuing (or renewed) attraction might have played a role in bringing about Thi's demise in either Thanh's or Giang's version of the story. But Sáo at least pretends she believes Giang's account. During a typhoon that approaches the floating farm, the two board a submersible and float downward – perhaps to be safe from the storm, and perhaps to take knowledge of the genetically modified plants away from the corporation's possession. They travel through a mysterious underwater city, and then end up lying next to each other on an infinite stretch of sand.

*Nước 2030*'s pace and tone are slow, quiet and lyrical – in stark opposition to the disaster mode of many North American films about climate change. Gradually but inexorably, the film transitions the viewer from the familiar hardships of life for the poor in the global South to a far stranger and more unsettling world. Uncertain concepts of property play a much more central role in this transition out of the ordinary world of everyday life than disaster scenarios. In an early scene, for example, Thi runs his boat into a group of men fishing near a floating sign that reads 'Private property'. He demands they get off his land; they express scepticism that the sea can be owned. In response, he leaps into their boat and starts throwing fists. Not long after, he finds holes in his fishing net and his fish eaten – the revenge of the fishermen he has chased away. At that point, he decides that holding on to his flooded land is not worth the trouble, and paints over the property sign with a 'For Sale' message and a phone number.

It is when his land is up for sale that Thi receives the call that leads to his working for Giang's hydroponic farm. As I already mentioned, property and theft are at the heart of the two conflicting versions Thanh and Giang tell about his death – the question of who owns or should own the genetically modified plant that is cultivated on the farm and that might save poor people like Sáo and Thi from famine. This question concerns material and intellectual as well as public and private property questions. In the second act, which takes viewers back to the years around 2020, one scene shows Giang presenting the findings of his research to the executives of the company he works for. Once he has revealed



that he made the breakthrough they were hoping for, a moment of tension arises in the boardroom. Whereas Giang wants to use this technique to seed the ocean itself with produce, the board members suggest partnership with a leading research university and further development of the floating farms, which would turn the plant into a commodity for sale.

At the end of the film, this question re-emerges in Giang's claim that he hired Thi because he wanted the genetically modified produce to become publicly available, whereas the company that employs him – and to whose owners he is related by marriage – wanted it to remain proprietary. But even apart from the company, is the GMO plant Giang's to give away? After all, it was Sáo with her intimate knowledge of the ocean who led him to the original plant in the first place; Giang, the graduate student from Saigon, would not have found it on his own. So one might argue that Giang's academic research originally appropriated Sáo's vernacular knowledge without any compensation. The proxy story of personal loss that the film started out with here combines in increasingly intricate ways with an exploration of possession and ownership. Again and again, the film raises these questions of property in the context of climate change: what belongs to whom, and how ownership functions become uncertain issues in a world that is more ocean than land.

These subtly accumulating questions of ownership against the background of adaptation to life in and with the sea gradually convey a sense of a different world in which old concepts, laws, practices and institutions have only intermittent traction. The strangeness of this new world emerges especially in Nguyễn-Võ's extraordinary underwater scenes: Sáo and Thanh, for example, dive down to lay flowers on Thi's blue coffin at the bottom of the bay – a beautiful gesture of mourning and memory, strangely displaced from a cemetery to the ocean. But it is especially the image of a city underwater at the end of the film that drives home to what extent climate change unsettles ordinary conceptions of reality.

As a typhoon approaches and all the workers have already left the floating hydroponic farm, Giang and Sáo embark in a submersible that floats gently down and then glides across an underwater cityscape. The city is unmistakably Saigon, with one of its architectural landmarks, the Bitexco Tower, clearly visible. This scene does not make logical sense in the storyworld of *Nước 2030*, which is set well south of Saigon: in several earlier scenes, the city skyline was shown on the horizon, well above water. And the underwater city is lit up as if the electricity could still be on. Sáo and Giang then float by the bookstore café where she worked as a waitress and they first met in 2020. The café, the hammocks and even the books are all still implausibly intact, and the scene makes it

seem as if it is now the fish reading the books – including one called *2020* in a metafictional allusion to the film itself. Climate-change realism here morphs into the imagery typical of French surrealism with its surprising juxtapositions and self-contradictory metaphors. This mesmerizing combination of beauty and incongruity in the underwater scenes sends the film's clearest signal to viewers that its futuristic storyworld no longer corresponds to the old world before climate change: not because of disasters, destruction and death – the typhoon, for example, is not portrayed as a major threat – but because the omnipresence of the ocean unmoors both collective institutions and individual practices.

In the same slightly disorienting fashion, *Nước 2030* turns its portrait of southern Vietnam into a synecdoche for global change. At three different moments in the film, the camera pulls slowly back from the unfolding scene to show the landscape or seascape through a fish-eye lens that highlights the curvature of the planet. These are not vistas that any of the characters perceive, but ones that the film audience is supposed to see – the planetary story behind the Vietnam plot. Instead of drawing on the familiar story templates and film images of hurricanes, flood waves, displaced crowds and destroyed cities, Nguyễn-Võ draws on the estrangement techniques developed by the high-modernist European avant-garde in the early twentieth century to create an aesthetically appealing but also deeply unsettling vision of land, wealth and culture going underwater.

## Urban amphibiguity: *New York 2140*

Experimental narrative forms drawn from the modernisms of the early twentieth century also inform one of Robinson's more recent science fiction novels, set in a climate-change metropolis. Yet rather than the poetic experiments of surrealism, Robinson takes as his model the narrative innovations of John Dos Passos in *Manhattan Transfer* (1925) and the *USA* trilogy (1930–6). These novels, one focused on the city of New York and the others on the United States as a nation, share with other modernist experiments in narrative, such as James Joyce's *Ulysses* (1922), Virginia Woolf's *Mrs. Dalloway* (1925) and Alfred Döblin's *Berlin Alexanderplatz* (1929), the break-up of plot into the perspectives of multiple characters who inhabit the same urban space, but perceive and remember it in divergent ways. Like other modernist novelists, Dos Passos mixed these different character perspectives with bits and pieces of public or collective discourse that populate urban spaces and airways: overheard



conversations, radio announcements, newspaper headlines, cinema newsreels, billboards, fragments of legal texts, bits of popular music and many other types of discourse that emanate from human crowds, municipal institutions or communications technologies. Unlike Joyce or Woolf, however, Dos Passos did not foreground the psychological interiority of his characters as a counterpoint to public discourse. Following the legacy of naturalism, his novels tend to emphasize the political, social and economic structures that his characters are forced to confront and that often leave them very limited room for choice. As a consequence, his narratives come closer than those of other modernist writers to not really featuring any clear protagonist; rather, the voices of many different characters have approximately the same weight and presence in the narrative.

Robinson, too, as a writer who has deeply engaged with Marxist and socialist thought, emphasizes institutional contexts and political forces in his portrayal of New York underwater in the middle of the twenty-second century. One of the most obvious manifestations of this emphasis in *New York 2140* is the voice of someone simply called 'the citizen' or 'that citizen', which in some later passages in the novel morphs into 'the city' – a voice that provides a good deal of urban history and much commentary on the contemporary sphere, but is not attached to a clearly defined character. A dozen or so other characters, much more minutely personalized, complement this voice of the municipality itself: Franklin Garr, a stockbroker; Charlotte Armstrong, a refugee advocate who is elected Representative of Congress towards the end of the novel; Gen Octaviasdottir, an African American police woman whose Nordic name alludes to the science fiction novelist Octavia Butler; Vlade Marovich, a building superintendent who originally came from Eastern Europe; two computer hackers, nicknamed Mutt and Jeff, who seek to overturn the capitalist market; Amelia Black, an internet celebrity who travels around the globe in an airship to broadcast live reports on the state of biodiversity and endangered species; two illiterate and orphaned boys, Stefan and Roberto, who spend much of their time with a retired historian whose maps, they hope, will lead them to treasures underwater. All of these characters come from different personal histories and social backgrounds, and inhabit the urban space in different ways even as they also represent larger forces of the market, the political establishment and the media, among others. All of the characters coincide at the MetLife building, where they either live permanently as part of a cooperative of the kind that is common in Manhattan in 2140, or squat temporarily in one of its spaces.

Climate change and rising sea levels are one of the major external forces that all the characters have to contend with. Robinson portrays Manhattan after two

major pulses of ice thaw and sea level rise that have raised ocean water by sixty feet – by current scientific standards, an extreme but not impossible future. Under these circumstances, upper Manhattan, which lies 150 feet above sea level, has continued its vertical growth and sports new 'superscrapers' of unprecedented height. Midtown Manhattan has turned into an 'intertidal' zone where waters come and go, and the survival or collapse of buildings has become a prime object of real estate speculation. Lower Manhattan has completely flooded. But this scenario, usually the point of departure for large-scale urban disaster narratives, is far more ambivalent in Robinson's portrayal. The novel leaves no doubt that sea level rise and increased hurricanes have inflicted heavy damage on New York and the many other coastal cities in the age of climate change for which it stands as a proxy. But with its proverbial resilience, New York has not only survived but benefited from the flood. The characters variously call it an 'aquatropolis'[10] or a 'SuperVenice, fashionably hip, artistic, sexy, a new urban legend'.[11] In fact, to some extent, climate change has catalysed social change and utopian experimentation: 'Hegemony had drowned, so in the years after the flooding there was a proliferation of cooperatives, neighborhood associations, communes, squats, barter, alternative currencies, gift economies . . . also free open universities, free trade schools, and free art schools.'[12]

But of course, hegemony has not quite drowned. Just as the flooding of Thi's ancestral land leads to 'amphibiguity' of property values in Nguyễn-Võ's *Nước 2030*, the loss of homes to the rising waters features centrally in *New York 2140*. Climate refugees flood steadily into the city, where Charlotte Armstrong's Householders Union seeks to help them find their way through immigration and housing application procedures. Mutt and Jeff, the two computer programmers, squat on the grounds of the MetLife building's vertical farm because they have no permanent home. Stefan and Roberto, the two orphans whose origins are never clearly determined, do not seem to have any fixed abode either, and end up staying for an extended time at the MetLife building. Their mentor, the retired historian Gordon Hexter, sees the building he inhabits in midtown Manhattan start to shake and 'melt' due to the impact of the tides one day. He is only saved thanks to Stefan and Roberto's intervention at the last minute and then relocates to the MetLife.[13]

Rising waters, in other words, drive some of the characters from their homes, while others find new homes by squatting in buildings that can no longer be officially rented. Yet others seem unable to find a home because housing may be unaffordable to them in the first place. The intertidal areas of New York and other coastal cities have turned into privileged zones for real estate speculation,



showing how capitalism itself has adapted to a radically changed world. Franklin Garr, a stockbroker whose first-person narrative and bildungsroman-style development over the course of the plot function as the novel's narrative backbone, not only participates in this speculation on the death and life of great American buildings. He has also created a new stock index, the intertidal property pricing index (IPPI), which is designed to help investors profit from this speculation, 'because if the intertidal has any value at all, even if it's only a million or two, then someone wants to own that. And other people want to leverage that value right out to the usual fifty times whatever it might be.'[14] This kind of speculation can make even risky buildings like Gordon Hexter's too expensive to live in for the young and the poor.

Questions of ownership are at the forefront of this narrative engagement with climate change, even though in Robinson's metropolis these issues are foregrounded more bluntly in their systemic implications than in the personal stories of Nguyễn-Võ's lyrical meditation. Indeed, the plot of *New York 2140* is bookended by two attempts to overturn the capitalist order that keeps real estate speculation alive even and especially when the real estate is going underwater. Mutt and Jeff, in the novel's very first scene, hack the international legal code that underwrites banking and stock market transactions. They cause a disruption of a mere few seconds before their intervention is discovered and reversed – although they are subsequently kidnapped and held captive for several weeks by shadowy corporate agents to prevent any further intrusion into the workings of international markets. The technological elite, however progressively minded, will not be able to bring about any lasting change, in Robinson's view. But at the end of the novel, an unusual alliance between masses of consumers and the governments of most nations does lead to an incisive change. Instigated by activists such as Charlotte and Amelia, millions of customers start to withhold payment on their loans, credits, and mortgages, precipitating international markets into a financial crash on the model of the one that occurred in 2008. In 2140, governments step in and offer to bail out collapsing banks and corporations, as they did in 2008 and 2009 – but this time on condition that the enterprises cede at least 51 per cent of their stock to the government. Effectively, then, the householders' payment strike in combination with government policy leads to the socialization of major enterprises – for Robinson, a step in the right direction, away from the ubiquitous power of capital.

The future city as Robinson portrays it, then, is not just (partly) underwater because of rising sea levels and climate change. It is also 'underwater' in more metaphorical, financial senses. The novel plays extensively on the metaphorical

superimposition of money and water in both its plot and its language. 'Combining a housing index with sea level was one way to view the drowned coastlines, and that was at the heart of what I did,' Franklin Garr says about his financial approach.[15] Stefan and Roberto, the penniless orphans who are often referred as 'drowned rats' by the adults and repeatedly come close to actually drowning on their diving expeditions, do end up locating a sunken galleon with the help of Hexter's historical maps and gold bullion worth four billion dollars – although, in an ironic twist, the historic treasure has to be kept confidential and melted down to translate into wealth for them in the capitalist market. The novel's first chapter is entitled 'The Tyranny of Sunk Costs', which according to the citizen is what makes New York New York: 'People can't give up on it . . . once you've put so much time and money into a project, it gets hard to just eat your losses and walk. You are forced by the structure of the situation to throw good money after bad. . . . You persevere unto death, a monomaniacal New Yorker to the end.'[16]

Another chapter is entitled 'Liquidity Trap', in another pun on money and water. And one whole page of the novel is simply an enumeration of real and made-up, present and future idioms and synonyms related to sinking, drinking, drowning and going under water:

> six fathoms under, wet, all wet, moldy, mildewed, tidal, marshy . . . scubaed, plunged, high diving, sloshed, drunk, dowsed, watered, waterfalled, snorkeled, running the rapids, backstroking, waterboarded . . . jawing with Jonah, in the belly of the whale, pilot fishing, leviathanating, getting finny, shnockered, dipped, clammed, clamming, salting, brined, belly-flopping, trawling, bottom-feeding, breathing water, eating water, down the toilet, washing-machined, submarining, going down . . . liquidated, liquefied, . . . inundated, laved, deluged, fluvialized, fluviated, flooded, Noahed, Noah's-neighbored, U-boating, universally solventized, ad aqua infinitum.[17]

The omnipresence of water in Robinson's drowned Manhattan, through these plot twists and linguistic games, takes on multiple meanings that include but are not limited to literal rising sea levels. They also point to social structures, market transactions and historical memories, all of which shape how the different individuals that populate the novel understand and live with the futuristic city they inhabit. Dealing with climate change, in this context, is not only a matter of better technologies (such as waterproof diamond-sheeted buildings), of new construction in devastated urban districts, of biological conservation and restoration, of innovative social experiments or of civic activism – though all of these play important roles in the plot. It is mainly an issue of reimagining value



itself, the processes through which value is attached and removed from places, practices, objects and people themselves.

Such a reimagination is possible, in Robinson's perspective, and nowhere is this clearer than in the way in which the flooding of Manhattan has in and of itself turned into a process of ecological restoration. Amelia Black, in the aerial view she describes to her internet viewers, often highlights the way in which greater New York was always a landscape of bays, estuaries and coastlines – an essentially marine landscape. And the citizen celebrates the rebirth of water-borne biodiversity in and around New York that the city's inundation has catalyzed:

> On the floors of the canals, the old sewer holes spew life from below. Up and down life floats, in and out with the tides. Salamanders and frogs and turtles proliferate among the fishes and eels, burrow in the mulm. Above them birds flock and nest in the concrete cliffs of the city. . . . Right whales swim into the upper bay to birth their babies. Minke whales, finbacks, humpbacks. Wolves and foxes skulk in the forests of the outer boroughs. . . . River otters, mink, fishers, weasels, raccoons: all these citizens inhabit the world the beavers made from their version of lumber. Around them swim harbor seals, harbor porpoises. A sperm whale sails through the Narrows like an ocean liner. Squirrels and bats. The American black bear. They have all come back like the tide, like poetry.[18]

Like the stock market transactions, ecological change is here conveyed through the metaphor of the tide – metaphorical nature represents the literal return of nature to the city.

Through his persistent play on water, floods, liquidity and drowning in *New York 2140*, Robinson seeks to realize the narrative quest for what he often refers to as 'optopia'. The neologism seeks to eschew the connotations of static social structures and political authoritarianism that are often attached to older visions of utopia, as well as the idea that only a perfect society is worth striving for. Optopia, in Robinson's approach, is the best society you can achieve, given the circumstances: less than perfect, but better than current conditions. In *New York 2140*, his signal narrative achievement is to base his vision of a future urban and ultimately national and international optopia on precisely the thematic foundation that usually leads authors of speculative fiction to dystopia. Nguyễn-Võ's surrealist submarine Saigon in Giang and Sáo's dream-like voyage offers a more meditative and less optimistic vision of the future, but like Robinson's Venetian Manhattan, it foregrounds the lives of ordinary people seeking for ways to adapt to strange, climate-changed urban landscapes. The city drowned by climate change, in both works, becomes a way

of imagining other worlds and sometimes better futures by turning it into a complex meditation on ownership, property, markets and values that sink or swim, come and go with floods and tides.

## Notes

1 See UNFPA (United Nations Population Fund), *State of World Population 2007*; United Nations Department of Economic and Social Affairs/Population Division, *World Urbanization Prospects: The 2007 Revision*; and UN-HABITAT (United Nations Human Settlement Programme), *The State of the World's Cities Report 2006/2007*.

2 Neil Brenner and Christian Schmid, 'The "Urban Age" in Question', *International Journal of Urban and Regional Research* 38, no. 3 (2014): 731–55; Thomas Buettner, 'Urban Estimates and Projections at the United Nations: The Strengths, Weaknesses, and Underpinnings of the World Urbanization Prospects', *Spatial Demography* 2, no. 2 (2014), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.679.297&rep=rep1&type=pdf.

3 Kai N. Lee, William R. Freudenburg and Richard B. Howarth, *Humans in the Landscape: An Introduction to Environmental Studies* (New York: Norton, 2012), 208.

4 Lee et al, *Humans in the Landscape*, 223.

5 Menno Schilthuizen, *Darwin Comes to Town: How the Urban Jungle Drives Evolution* (New York: Picador, 2018).

6 For a detailed discussion of the insights and shortfalls of these analyses, see Ursula K. Heise, 'Science Fiction and the Time Scales of the Anthropocene', *English Literary History* 86, no. 2 (2019): 275–304.

7 Alexa Weik von Mossner, *Affective Ecologies: Empathy, Emotion, and Environmental Narrative* (Columbus: Ohio State University Press, 2017), 68.

8 Many ingredients of the climate disaster story were already described in the context of nuclear disaster stories by Susan Sontag in her 1965 essay, 'The Imagination of Disaster', in *Against Interpretation and Other Essays* (New York: Picador, 1990), 209–25.

9 For ecocritical analyses of Emmerich's film, see Robin L. Murray and Joseph K. Heumann, *Ecology and Popular Film: Cinema on the Edge* (Buffalo: SUNY Press, 2009), 3–10; Weik von Mossner, *Affective Ecologies*, 137–8, 153–61.

10 Kim Stanley Robinson, *New York 2140* (New York: Orbit, 2017), 285.

11 Robinson, *New York 2140*, 279–80.

12 Robinson, *New York 2140*, 209.

13 Robinson, *New York 2140*, 117.

14 Robinson, *New York 2140*, 120.



15 Robinson, *New York 2140*, 19.

16 Robinson, *New York 2140*, 33.

17 Robinson, *New York 2140*, 138.

18 Robinson, *New York 2140*, 319–20.

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3

# Scaling down our imagination of the human

## Ted Chiang and the fable of extinction

Chris Danta

## Scale effects

The Anthropocene is an idea currently reshaping our thinking about what it means to be human. In a 2000 article for the *Global Change Newsletter*, Nobel-Prize-winning atmospheric chemist Paul J. Crutzen and biologist Eugene F. Stoermer proposed using the term 'Anthropocene' to designate the current geological epoch. According to Crutzen and Stoermer, the impacts of human activities on the earth and atmosphere have escalated to such a degree over the past three centuries that humankind has become a major geological and environmental force.[1] Anthropocene, from the Greek roots *anthropo* (human) and *cene* (new), is a term intended to take account of what Crutzen calls in a 2002 article in *Nature* 'the geology of mankind'. 'It seems appropriate to assign the term "Anthropocene" to the present, in many ways human-dominated, geological epoch', Crutzen writes in that article, 'supplementing the Holocene – the warm period of the past 10-12 millennia'.[2]

The Anthropocene has yet to gain official sanction as a new geological epoch in Earth history. But the term has captured the imagination of scholars working not just in the environmental sciences but also in the humanities. One reason for this, I suggest, is the growing fascination in various fields with how the problem of scale affects our understanding of the human. The Anthropocene narrative achieves its forcefulness through a grotesque magnification of the scale of human agency. As the historian Dipesh Chakrabarty notes in his influential 2009 article 'The Climate of History: Four Theses':

> To call human beings geological agents is to scale up our imagination of the human. Humans are biological agents, both collectively and as individuals. They