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Lost Words and Lost Worlds: Combatting Environmental Generational Amnesia

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Abstract

This essay explores the problem of society's environmental memory loss and the potential for literary and cultural works to counteract it. It uses the concepts of environmental generational amnesia and shifting baseline syndrome to argue that our connection to the natural world has been eroded by our severely limited experience of it. Each generation's perception of what is "normal" in nature is shaped by their own experience rather than an objective standard. As a result, we forget what we have lost and do not realise the full extent of environmental degradation that has occurred over time. People's baseline expectations of the state of the environment are constantly being reset to a lower level as they are born into a world with fewer resources and a more degraded environment than the generation before. The essay examines two case studies to illustrate how creative works can play a vital role in reversing these trends and curing our planetary amnesia: *The Lost Words: A Spell Book* and its sequel *The Lost Spells* by Robert Macfarlane and Jackie Morris, and *What Is Missing?*, an interactive digital project by Maya Lin.

Keywords

environmental generational amnesia – shifting baseline syndrome – aesthetic agency – mnemonic care-work

1 Introduction

Two of the greatest threats humanity is currently facing are climate change and biodiversity loss. While there are many reasons why our efforts to confront these linked crises are woefully insufficient, in this essay I will focus on one of them that strikes me as important yet somewhat neglected. Before identifying this, I will provide two brief illustrations that will help clarify it.

On 12 May 2021 the *New York Times* published an article titled “There’s a new definition of ‘normal’ for weather”. It noted that the National Oceanic and Atmospheric Administration (NOAA) had issued its latest “climate normals”; that is, “baseline data of temperature, rain, snow and other weather variables collected over three decades at thousands of locations across the country” (Fountain & Kao, 2021, para. 3). The article went on to explain that these normals are updated every ten years, and that they are used by TV meteorologists when they tell their audiences that the day’s weather was a certain number of degrees warmer than normal for that time of year, or that more rain had fallen in a single downpour than is typical for an entire month. Because the normals have been produced since 1930, they also provide valuable information about long-term weather patterns, showing how the climate in the US has changed due to the emissions of greenhouse gases over more than a century. The project manager at NOAA’s National Centers for Environmental Information is quoted as saying, “we’re really seeing the fingerprints of climate change in the new normals. We’re not trying to hide that” (Fountain & Kao, 2021, para. 8). While that may be so, if the definition of “exceptional weather conditions” is tightened because that term must otherwise be used more often than not in the daily weather report these days, it will inevitably make us less likely to feel that it is “abnormally” warm for the time of year. The new normal that NOAA’s updated baseline weather data foster thus threatens to erode the sense of urgency to address climate change.

My other example will sound familiar to drivers of a certain age. If you drove a car in the 1970s or 1980s, your windscreen would quickly become covered in dead insects that had flown into it. However, this no longer occurs as the number of insects has significantly decreased since then. This is known as the “windscreen phenomenon” (McCarthy, 2017, para. 12), and the dramatic decline in insects over the last fifty years or so has been dubbed the “global insect apocalypse” (Cardoso & Leather, 2019). However, millennials and members of Generation Z are generally unaware that the current scarcity of insects is not “normal” because they did not experience the rich and diverse nature of previous generations. The frame of reference has shifted, and they often do

not realise that what seems obvious or normal to them now was not at all so to previous generations, which had different baselines. As a result, the need to take action to protect biodiversity may seem less acute to members of younger generations, who lack personal experience of nature's past abundance.

2 The Argument

Scholarship on ecological mourning, by which I mean the process of grieving losses related to the degradation and destruction of the natural environment, has yet to fully account for the impact of the planetary amnesia to which these two examples point (Cunsolo Willox, 2012; Cunsolo & Landman, 2017; Albrecht, 2019; Barnett, 2022; Craps, 2023). Global warming and biodiversity loss are slow, long-drawn-out processes to which humans gradually become acclimatised, which hinders intergenerational recognition of these challenges, making them hard to grasp and respond to. Humans often do not realise the full extent of what has been lost because their reference points for what is considered “normal” have shifted over time. This failure to understand the magnitude of the environmental losses that have occurred makes it particularly difficult to grieve and come to terms with them. As the American nature writer Aldo Leopold once said, “we grieve only for what we know” (1949, p. 48).

This essay will explore the problem of society's environmental memory loss and the potential for literary and cultural works to counteract it. The psychologist Peter Kahn (1999) has coined the term “environmental generational amnesia” to refer to the idea that each generation's perception of what is “normal” in nature is shaped by their own experience rather than an objective standard. As a result, Kahn notes, we forget what we have lost and do not realise the full extent of environmental degradation that has occurred over time. This phenomenon is closely related to the notion of “shifting baseline syndrome”, introduced by the marine biologist Daniel Pauly (1995), which describes how people's baseline expectations of the state of the environment are constantly being reset to a lower level as they are born into a world with fewer resources and a more degraded environment than the generation before. Drawing on the work of the literary scholar Ann Rigney (2021) and the political theorist Mihaela Mihai (2022), I will examine two case studies – Robert Macfarlane and Jackie Morris's illustrated poetry collections *The Lost Words: A Spell Book* (2017) and *The Lost Spells* (2020) and Maya Lin's ongoing multi-platform memorial project *What Is Missing?* (2010-) – to illustrate how creative works can play a vital role in reversing these trends and curing our planetary amnesia.

3 Environmental Generational Amnesia

Each generation is handed a world shaped by their forebears but seemingly forgets that fact. This kind of generational amnesia was observed in the mid-1990s, independently of one another, by Pauly and Kahn. In a short article published in 1995, the former proposed the term “shifting baseline syndrome” to describe the invisible long-term decline in fish stocks. As a fisheries scientist, Pauly noticed that, despite evidence of a sustained reduction in the numbers of certain fish populations, each new generation of scientists appeared to be using the lower levels of abundance and diversity they studied as the new standard:

Essentially, this syndrome has arisen because each generation of fisheries scientists accepts as a baseline the stock size and species composition that occurred at the beginning of their careers, and uses this to evaluate changes. When the next generation starts its career, the stocks have further declined, but it is the stocks at that time that serve as a new baseline. The result obviously is a gradual shift of the baseline, a gradual accommodation of the creeping disappearance of resource species, and inappropriate reference points for evaluating economic losses resulting from overfishing, or for identifying targets for rehabilitation measures.

1995, p. 43^o

According to Pauly, fisheries scientists do not tend to pay any serious attention to accounts by previous generations that reported seeing marine life in significantly different conditions. For example, he recalls the experience of a colleague’s grandfather, who was frustrated in the 1920s because he frequently caught bluefin tuna in his mackerel fishing nets in the Kattegat, a region where this species is rarely found nowadays. Instead of incorporating such earlier knowledge into the present models of fisheries, scientists routinely dismiss them as insignificant anecdotes. As a result of this blind spot, each new generation accepts the diminished world it inherits as normal. Pauly discussed shifting baseline syndrome as an effect afflicting researchers studying fish, but the phenomenon has since been observed in many areas of society beyond the fisheries community. In a sign of the extent to which the concept has entered common parlance by now, it features as the title of a recent poetry collection by the American poet Aaron Kreuter (2022) and a newly released music album by the American doom metal band Escaping Aghartha (2023).

While “shifting baseline syndrome” is a concept developed and used in conservation biology (Dayton et al., 1998; Papworth et al., 2009; Jackson

et al., 2011; Pauly, 2019; Jones et al., 2020), it has an important psychological dimension, which is the focus of Kahn's research. Around the same time as Pauly, Kahn described a similar effect in a very different context. In a psychological study conducted together with his colleague Batya Friedman, he interviewed inner-city African American children in Houston, Texas – one of the most heavily polluted cities in the US – about their environmental views (Kahn & Friedman, 1995). To their surprise, they found that while two thirds of the children understood ideas of air and water pollution in general, only one third believed their own city to be affected. “How could this be?”, they wondered. “How could children who know about pollution in general, and live in a polluted city, be unaware of their own city's pollution?” (1995, p. 1414). The answer they came up with was that

to understand the idea of pollution one needs to compare existing polluted states to those that are less polluted. In other words, if one's only experience is with a certain amount of pollution, then that amount becomes not pollution, but the norm against which more polluted states are measured.

1995, p. 1414

Kahn and Friedman went on to suggest that the psychological phenomenon they had observed in these Houston children was not unusual: It could occur whenever individuals lack an experiential baseline by which to judge the health or integrity of nature. Indeed, they ventured, it affects us all from generation to generation (1995, pp. 1414–1415).

Kahn elaborates on these ideas in a series of later publications. Among other things, he points out that there are both upsides and downsides to what in his book *The Human Relationship with Nature* he calls “environmental generational amnesia” (1999, p. 7). The positive aspect is that “each generation starts afresh, unencumbered mentally by the environmental mistakes and misdeeds of previous generations” (Kahn, 2007, p. 204). The drawback, though, is enormous as we fail to fully comprehend that the nature we experienced during childhood is not the norm but already degraded: “Thus we're constructing our environmental ethic, and structuring our relationship with nature, based on incomplete and partly inaccurate perceptions and understandings” (Kahn, 2007, p. 204). As a result, the sense of urgency required to tackle major environmental issues is diminished. In an article co-authored with Thea Weiss, Kahn identifies environmental generational amnesia as “one of the most pressing psychological problems of our lifetime”, whose

“insidiousness” makes it particularly challenging to address (Kahn & Weiss, 2017, p. 20).

While he can see “no easy answer” to the question of how to solve the problem of environmental generational amnesia, Kahn does offer some suggestions, which revolve around childhood, as that is where it has its genesis (2002, p. 110). He recommends “engag[ing] in dialogue with children about what has been lost” and “us[ing] such dialogue to help shape the future” (2002, p. 111). Such dialogues “provide a means for children to gain information (otherwise unavailable in a direct experiential way) from which they can construct more veridical understandings of the natural world” (2002, p. 111). Other solutions he proposes besides intergenerational communication include teachers “us[ing] historical diaries and historical novels to convey a sense of the landscape of years past” and setting writing assignments asking students to compare the landscapes described in these texts with their contemporary environments. Moreover, Khan recommends “help[ing] children experience more pristine nature” that can “provide the baseline of ecological health from which children (and societies at large) can construct notions of ecological disease” (2002, p. 112). However, the tricky question of just how far back one is supposed to go – how “pristine” a state of nature one should aim for – remains unaddressed, as does the equally thorny issue of whether a yearning for a comparatively “unspoiled” past could not be politically suspect or lead to a sense of despair, given the practical impossibility of returning to an assumed pre-industrial Eden.

4 The Agency of the Aesthetic

But for a passing reference to historical novels (by which Kahn seems to mean novels both from and set in an earlier era), the role the creative arts can play in countering environmental generational amnesia appears to be of little interest to both Khan and Pauly. I will draw on recent research by Rigney and Mihai to argue that literature and the other arts do in fact have a major contribution to make to the project of unforgetting lost environmental knowledge, which not only has a cognitive dimension but is also affective and embodied.

In an essay titled “Remaking memory and the agency of the aesthetic”, Rigney (2021) theorises the role of artworks in bringing about mnemonic change. In order to find out how histories can change from “inert” or “disabled” to active, from overlooked to not forgotten, she focuses on the ways in which cultural forms contribute to generating memorability (2021, p. 12). She posits that the creative arts can be seen as “catalysts in creating new memories,

supplementing what has been documented with imaginative power and creatively using cultural forms to generate vibrant (if not always literally true) stories that may then be picked up and reworked in other disciplines” (2021, p. 12). Rigney insists on the importance of studying what happens in “the intimacy of reading and viewing”, which, she maintains, is as crucial as “larger-scale social and cultural developments” (2021, p. 12). Taking her cue from Rita Felski, she argues that the artful deployment of media can help create new sites of memorability by enchanting the reader or viewer: “[T]he role of the arts in the remaking of memory [...] derives from their power to enchant; specifically, to capture our attention through mastery of a given medium” (2021, p. 15). The use of complex forms that disrupt habits of memory can provide an opportunity for unfamiliar experiences to register as memorable: “Remaking collective memory begins with the disruption of old habits in the micropolitics of reading, viewing and reacting, with repeated small movements gradually acquiring larger-scale consequences” (2021, p. 18).

Rigney’s emphasis on the enchantment of artworks that seduces people into stepping beyond the comfort of habitual patterns of perception as a starting point for transformations in collective memory resonates strongly with the conceptual apparatus Mihai employs in her book *Political Memory and the Aesthetics of Care: The Art of Complicity and Resistance* (2022) to account for the ways in which certain artworks can open up a space for remembering and imagining differently. Mihai contends that literature, cinema, and other artforms can “*seductively sabotage* our attachments to dominant – comfortable and reductive – narratives about the past” (2022, p. 9; italics in original). Thanks to their capacity to provide a powerful prosthetic experience and to pleasurably sabotage reductive discourses, certain artworks have the potential to create “‘epistemic friction’ between shared, entrenched, exclusionary mnemonic habits, on the one hand, and alternative visions of historical temporality, on the other” (2022, p. 9). Mihai reads these artists’ work of seductive sabotage as “a work of *mnemonic care* for the health of the hermeneutical space of memory – one that is delivered aesthetically” (2022, p. 9; italics in original). She refers to the artists in question as “caring refuseniks”, that is, dissenting memory agents who reject reductive narratives and who nurture a plural space of memory-making (2022, p. 62).

The case studies Rigney and Mihai consider in their respective publications have little to do with the phenomenon that concerns us here: The former investigates the (un)forgetting of colonial soldiers in European armies during the First World War; the latter (challenges to) the double erasure of the realities of pervasive complicity and impure resistance in the aftermath of political violence in France (the German occupation), Romania

(the communist dictatorship), and South Africa (apartheid). Even so, the theoretical frameworks they advance can also illuminate other cases, including, it seems to me, the problem of environmental generational amnesia. In what follows, I will attempt to demonstrate the value of artistic engagements with this intractable psychological phenomenon. Like the artworks Rigney and Mihai look at, the ones I will discuss here can be seen to perform vital mnemonic care-work, “the work of caring refusal” (Mihai, 2022, p. 238), in identifying and rejecting shifting baselines of ecological health and recovering forgotten (or about to be forgotten) cognitive, affective, and sensory knowledge of past environmental conditions. By engaging the intellect, the emotions, and the body, they subvert the public’s investment in its own ignorance about the true state of the world, destabilise hegemonic memory regimes, and hold out hopes for a liveable future.

5 Precursors

Before I proceed to analyse the environmental mnemonic care-work undertaken by Macfarlane and Morris, on the one hand, and Lin, on the other, I will briefly highlight two well-known short poems, by a nineteenth- and a twentieth-century poet respectively, that show that artists have assumed this responsibility since long before the onset of what Lynn Keller (2018) terms “the self-conscious Anthropocene”, a period in which there is a growing awareness of the scale and severity of human effects on the planet.

The Victorian poet Gerard Manley Hopkins (1897) addressed the phenomenon of environmental generational amnesia *avant la lettre* in his celebrated poem “Binsey poplars”. The poem begins with the speaker mourning the loss of the poplar trees that had once stood tall and majestic by the river. He laments how these trees were cut down, and how the beauty they once held is now gone forever. A meditation on the loss of natural beauty, “Binsey poplars” also reflects on the disconnect that can arise between generations due to what we now call “environmental generational amnesia”. The line “After-comers cannot guess the beauty been” emphasises the disconnect between generations in appreciating the natural world. The speaker implies that future generations will not be able to understand the beauty of the poplars that have been lost because they never witnessed them. The poem highlights the importance of preserving and passing down knowledge of and reverence for the natural world so that future generations can also grasp its value.

It drives home the gravity of the loss to the reader – who is, after all, an “after-comer” – through the use of “sprung rhythm”, Hopkins’s innovative metric form

which counts the number of accents in a line but not the number of syllables. This allows him to create onomatopoeic effects by grouping accented syllables together, for instance in the third line of the poem, where the repetition of the accented words “all” and “felled” sounds like the pounding of an axe on the tree trunks to the listener’s ear: “All felled, felled, are all felled”. Another way in which the speaker conveys his pain over the felled trees is by offering the startling image of the pricking of an eyeball as an analogy for the irreversible environmental damage he has witnessed being inflicted. The image suggests that the disappearance of the trees is as calamitous as the loss of one’s eyesight: The reader is harmed as much as the landscape; we are made to feel as if we have suffered a personal loss. Not only will the landscape no longer be there, but we will also be unable to see it – it will effectively be as if we had had our eyes pierced.

Just over a century after Hopkins, the American poet W. S. Merwin (1988) published a short poem titled “Witness” that treads similar ground as “Binsey poplars”. It reads in full:

I want to tell what the forests
were like

I will have to speak
in a forgotten language

1988, p. 65

Like Hopkins’s poem, “Witness” can be interpreted as a lament for the destruction of the natural world and a call to remember what has been lost. The first two lines, “I want to tell what the forests / were like”, express a desire to share what the speaker has seen and experienced in the past. He remembers a time when the natural world was more abundant and vibrant than it is now. It has changed in ways that make it difficult to describe to others. The third and fourth lines, “I will have to speak / in a forgotten language”, suggest that the speaker’s memories of the forests are not easily communicated to others. The language of the past is no longer understood or appreciated, which implies that the current generation is disconnected from the natural world and its importance. Together, these four lines can be interpreted as a warning against the loss of the natural world and a plea to remember what has been lost.

The use of the phrase “forgotten language” implies that the speaker’s memories are slipping away, and that unless something is done to preserve them, they will be lost forever. Not only have we lost the forests themselves (through such factors as widespread logging, the devastation caused by bark

beetle infestations, and the growing threat of wildfires), but we also risk losing our ability to describe them. Deforestation can be seen to deplete language; the words we use to name what is missing are themselves endangered. What Merwin's poem bears witness to, then, is a double crisis: an ecological and a linguistic one. "Witness" calls on the reader to recognise the importance of the natural world, to relearn the language of the past, and to protect what remains. The poem can be seen to illustrate and resist environmental generational amnesia, where every successive generation forgets the environmental conditions that were once commonplace in the past, and therefore lacks the knowledge and motivation to work towards restoring them.

6 *The Lost Words and The Lost Spells*

The Lost Words: A Spell Book and its sequel *The Lost Spells* consciously take up Merwin's challenge for literature and art to reclaim the forgotten language of nature. *The Lost Words* came about as an attempt to restore nature words to the vocabulary of British children after the *Oxford Junior Dictionary* decided to drop a number of such words from its pages, in a clear example of shifting baseline syndrome in action. The British nature writer Robert Macfarlane and the British illustrator Jackie Morris responded by evoking the wonders of nature through enchanting verse and beautiful illustrations that together seek to conjure lost, or nearly lost, words and species back into our everyday lives.

In his book *Landmarks*, Macfarlane recounts what happened after a sharp-eyed reader had noticed the disappearance of dozens of words pertaining to nature from the 2007 edition of the *Oxford Junior Dictionary* as follows:

Under pressure, Oxford University Press revealed a list of the entries it no longer felt to be relevant to a modern-day childhood. The deletions included *acorn*, *adder*, *ash*, *beech*, *bluebell*, *buttercup*, *catkin*, *conker*, *cowslip*, *cygnet*, *dandelion*, *fern*, *hazel*, *heather*, *heron*, *ivy*, *kingfisher*, *lark*, *mistletoe*, *nectar*, *newt*, *otter*, *pasture* and *willow*. The words introduced to the new edition included *attachment*, *block-graph*, *blog*, *broadband*, *bullet-point*, *celebrity*, *chatroom*, *committee*, *cut-and-paste*, *MP3 player* and *voice-mail*.

2015, p. 3; italics in original

Oxford University Press defended its decision to replace words associated with nature with words relating to technology by stating that the latter were more relevant to the typical experience of modern-day childhood than the

dictionary aimed to reflect. Macfarlane, though, lamented the loss of “[a] basic literacy of landscape” and, with it, “something precious: a kind of word magic, the power that certain terms possess to enchant our relations with nature and place” (2015, p. 4). Teaming up with Morris, he set out to create a “spell book” that would conjure back twenty of these lost words and the entities they name. Macfarlane and Morris had bonded in 2015 as co-signatories of an open letter calling on the editors at Oxford University Press to reinstate the nature words they had cut from their *Junior Dictionary* in a future edition (Atwood et al., 2015). That letter, signed by 28 famous writers, journalists, and scholars, betrayed an acute awareness of the entanglement of word and world: losing the language to name the natural world means losing our connection to it.

In *The Lost Words*, Macfarlane does not name the dictionary debate directly, but there is a veiled allusion to it in the introduction, which begins with the spell-binding language of a fairy tale:

Once upon a time, words began to vanish from the language of children. They disappeared so quietly that at first almost no one noticed – fading away like water on stone. The words were those that children used to name the natural world around them: acorn, adder, bluebell, bramble, conker – gone! Fern, heather, kingfisher, otter, raven, willow, wren ... all of them gone! The words were becoming lost: no longer vivid in children’s voices, no longer alive in their stories.

MACFARLANE & MORRIS, 2017, introduction

This excerpt underlines the insidiousness of the changes the book aims to undo. *The Lost Spells*, the earlier book’s “little sister”, is equally suffused with loss, of both language and what it represents. Its introduction notes that “Loss is the tune of our age, hard to miss and hard to bear. Creatures, places and words disappear, day after day, year on year. But there has always been singing in dark times – and wonder is needed now more than ever” (Macfarlane & Morris, 2020, introduction). The phrase “singing in dark times” comes from Bertolt Brecht’s 1938 *Svendborg Poems*, written in the Danish countryside, where he lived during his exile from Nazi Germany. In the motto with which the series of poems begins, Brecht asks: “In the dark times / Will there also be singing?” (1976, p. 320). His answer: “Yes, there will also be singing / About the dark times” (1976, p. 320). This intertextual reference indicates that what is at stake for Macfarlane and Morris far exceeds a mere lexicographical quibble. Like Brecht back in 1938, writing in the shadow of Nazism, they think of themselves as working during one of the most perilous times in world history,

on the brink – if not in the midst – of a global cataclysm no less momentous than the Second World War.

At once elegiac and uplifting, *The Lost Words* sets out to revive twenty lost nature-related words in the voices, imaginations, and experiences of both children and adults using the power of language and art. Each word receives three dedicated double-page spreads. The first of these does not picture the plant or animal in question but features a word search, where the reader can decode the letters making up the name of the species, painted in gold, from a scattering of alphabet letters. This is followed by an acrostic poem based on the word in question, which is accompanied by a full-page painting of the natural entity it designates that resembles a religious icon made with sumptuous gold leaf. These poems are called “spells” as they are meant to be spoken aloud, so the introduction explains, in order to “summon lost words back into the mouth and the mind’s eye” (Macfarlane & Morris, 2017, introduction). Finally, there is a large, double-page watercolour illustration of the plant or animal in its native habitat, often in the company of other species. Macfarlane and Morris followed up *The Lost Words* with another book evoking the wonders of nature that is smaller in size but kindred in spirit and tone. Like its large-format predecessor, *The Lost Spells* invites readers to revel in and connect with the natural world by interweaving spell-poems – 21 this time – and beautiful illustrations. Some of these poems are summoning spells, which remind us of what is no longer visible. Others are charms, meant to protect what is under threat. Others still are expressions of wonder and joy, a celebration of the magnificence of nature. *The Lost Spells* also includes a glossary, which encourages readers to find each named species in the book’s illustrations and urges them to take a step further by venturing outside to find the actual creatures in nature. By insisting on the importance of naming and knowing nature, both books appeal to the reader to engage more fully with their environment. They allow children and adults alike to see the world anew and remind them of what they lose when they let it slip away.

As it turns out, *The Lost Words* and the various related projects it has inspired – including not only the pocket-sized companion volume *The Lost Spells* but also two folk albums (*The Lost Words: Spell Songs* and *Spell Songs II: Let the Light In*), a BBC Prom concert, a stage adaptation, jigsaws, and boardgames – have cast an extraordinary spell on hundreds of thousands of people. Selling half a million copies worldwide and winning multiple awards, *The Lost Words* has become “an international cultural phenomenon” (Barkham, 2020, para. 1). Fundraising campaigns resulted in the book being donated to “more than three-quarters of primary schools in England, Wales and Scotland and

to every hospice in the country” (Barkham, 2020, para. 4). Thus, it has led to the mass participation of schools in learning nature literacy and supported the health and well-being of adults. Indeed, *The Lost Words* has effectively begun a grassroots movement to re-enchant the world and re-wild the lives of both children and adults. An eloquent protest at the loss of the natural world around us, it has managed to make the very words that were not being used enough anymore to merit inclusion in a children’s dictionary central to the cultural conversation once again. In a powerful demonstration of the role of the creative arts in effecting mnemonic change – or rather, counteracting it – through enchantment, the book’s runaway success has helped shift the baseline for what is considered normal in nature across the UK and far beyond back upwards, if only ever so slightly.

7 *What Is Missing?*

Another sprawling art project that makes a no less determined attempt in this direction was started by the American artist and architect Maya Lin, who is best known for designing Washington, DC’s Vietnam Veterans Memorial. That memorial, which honours all members of the US armed forces who died as a result of their service in the Vietnam War, gives visitors a sense of the large-scale loss of human lives while also memorialising each individual service member. More recently, though, Lin has turned her attention to more-than-human losses. In 2010 she launched a website called *What Is Missing?*, which serves as a global memorial to the planet (Lin, 2010c). It is intended to be her “last memorial”, she says, and one that she will be adding to for the rest of her life (Lin, n. d., para. 2). The site showcases the numerous disappearing creatures and environments on our planet.

Its homepage features a map covered in colourful dots, many of which represent endangered or extinct species. Clicking on these dots leads the visitor to images or videos of, and stories about, those species. The black-and-grey colour scheme of the map, which is referred to as the “Map of Memory”, recalls the black granite stone of Lin’s Vietnam Veterans Memorial with its grey inscriptions (Lin, 2010a). There is also an interactive page allowing people to add their own memories to the map, or stories they were told by their parents or grandparents about *their* memories of the way it used to be: something they have personally witnessed diminish or disappear from the natural world.¹ Thus, they can help transform “a global memorial” into “something both personal and close to home” (Lin, 2010b).

The project's goal, which is made explicit on the "about" page, is to create "a collective memory of the planet" that can help wake people up to environmental generational amnesia (Lin, 2010a). While that term is not used as such, the description of the condition that is provided, which contains a reference to "shifting baselines", accurately captures it. In fact, in interviews Lin has credited Pauly's "shifting baseline syndrome" as a source of inspiration, along with Jared Diamond's related concept of "landscape amnesia", that is, the tendency for people to forget the historical and ecological changes that have occurred in a landscape over time (Moffit, 2021; Toomey, 2012). Moreover, in early 2011 she reportedly asked Pauly to provide input for the project (Strub & Pauly, 2011, p. 1).

The relevant section of the "about" page is titled "WHAT IS MISSING FOCUSES ATTENTION ON PHENOMENA THAT PEOPLE MAY NOT EVEN BE AWARE ARE DISAPPEARING". Under this heading, the insidiousness of these disappearances is explained as follows: "Each successive generation accepts what they see as normal, not realizing what has been lost. And over time we forget how abundant the natural world once was. Scientists refer to this as shifting baselines" (Lin, 2010a). These lines are illustrated by a graph showing the gradually but significantly declining average weight of cod over time, from an astounding 211 pounds in 1895 to merely 15 pounds by 1953. Apparently, the weight of a cod in 1895 was more than that of the fisherman who caught it, who is pictured in silhouette looking smaller than his catch, while the cod caught just over half a century later barely reaches the man's heels. Nature, which used to be larger than human life, has literally been brought to heel, or so it seems.²

1 Insofar as it uses crowdsourcing to document diminishing species and habitats, *What Is Missing?* takes its place among a number of participatory heritage programmes set up by natural history and science museums around the world in recent years with the goal of documenting long-term environmental transformations. Moving away from an exclusive reliance on experts, these institutions have started recruiting members of the public as witnesses to environmental change over time, collecting their testimonies, sometimes using historical artifacts as a trigger. A good example is *Changing Natures*, a collaborative project undertaken by the natural history museums of Berlin and Paris that "invites the public to contribute objects and personal stories to a digital collection that explores unfolding processes of environmental transformation" (Project, 2022-, para. 1).

2 The information in this graph is not actually supported by the scientific evidence. According to Pauly, who advised Lin on this specific matter, there has indeed been a significant reduction in average cod weight and size since the onset of industrial-scale fishing in the mid-1800s, but it is hardly as spectacular as the graph makes it out to be (Strub & Pauly, 2011, p. 3). In fact, that the graph is inaccurate is already apparent from the fact that the year 1953 features twice on the axis, where it is associated with two different weights. Be that as it may, the general point stands.

The next section, titled “HOW CAN WE PROTECT IT IF WE DON’T EVEN REALIZE IT’S MISSING?”, lists a number of things that as a society we do not realise we have lost due to shifting baseline syndrome:

The scale of species
 The abundance of species
 The ability of animals to migrate freely
 The sounds of once common songbirds in our backyards
 Rivers flowing freely to the sea
 Clean water
 Clean air
 The visibility of stars at night
 The memory of what this planet used to be

LIN, 2010a

The final list item sums it all up: Environmental generational amnesia has made us forget what the planet used to be like. Like the proverbial frog, unaware that it is being boiled until it is too late to jump out of the pot, humanity adapts to its gradually changing environmental circumstances until they become wholly unfit for human (as well as more-than-human) habitation. We let the planet become uninhabitable, slowly but surely, without even noticing it.

What Is Missing? is actually a multimedia and multi-sited project – “a work that can exist in multiple forms and places around the world”, as the website puts it (Lin, 2010a). The memorial also includes permanent sound and media sculptures, travelling exhibitions, and temporary installations such as *Ghost Forest*, a haunting public art installation from 2021 consisting of 49 dead trees in midtown Manhattan’s Madison Square Park. The website serves as the project’s nexus, though. Its Map of Memory allows the visitor to explore thousands of stories about and memories of disappearing or lost species and environments, as well as to add personal memories of the natural world. Engaging with Lin’s interactive archive documenting extinct and endangered life forms and ruined environments is a powerful experience for visitors. In an essay titled “Island of no birdsong”, the CHamoru poet Craig Santos Perez has described the impact of *What Is Missing?* on him as follows:

For me, it has created a space to feel my grief, reflect on extinction, and remember what was lost. It has inspired me to do what I can to conserve what has survived, restore our relationship to the world, and cultivate hope for a more sustainable future.

2020, para. 37

This response aligns well with the project's goals, which are not just to raise awareness about the full magnitude of the climate and ecological crisis but also to "emphasize that by protecting and restoring habitat, we can both reduce carbon emissions and protect species" (Lin, 2010a). *What Is Missing?* seeks not so much to overwhelm the visitor with grief for what has been lost but to spur the transition to a more sustainable world by offering them "steps each one of us can take in our own lives to help make a difference" (Lin, 2010a). While grief is an unavoidable part of Lin's memorial project, so too are hope, advocacy, and action. Beyond lamenting environmental destruction, *What Is Missing?* includes conservation and restoration success stories as well as a comprehensive set of solutions, a "Greenprint" showing how we could yet forge a different path and envisage a viable alternative future. However, this future-oriented section of the website is largely text-based, didactic, and not very interactive, making it less compelling and memorable. Along with the fact that it was not added until fairly recently,³ this may help explain why the backward-looking parts of the project have attracted more attention.

8 Conclusion

To sum up, I have argued that environmental generational amnesia represents a major obstacle to widespread and urgent environmental action, and that artworks such as *The Lost Words*, *The Lost Spells*, and *What Is Missing?* have a crucial role to play in overcoming it.

If we collectively forget what a healthy biosphere looks like because of shifting baselines of what is considered normal, and hence acquiesce and unquestioningly adapt to increasingly dire environmental circumstances, we risk letting the prospect of a liveable future slip away for good. The intergenerational dimension tends to remain out of sight in scholarship on ecological mourning, which typically focuses on the individual's "lived experience" of environmental change (Albrecht et al., 2007, p. S96). To avoid sleepwalking into environmental collapse, we have to confront the problem of environmental generational amnesia, which can be seen to sustain the Anthropocene (Hoek, 2022). It is vital that society at large wake up to the ramifications of our impaired vision. Zoomed in too tightly to see things for what they really are, we need to ensure that memories of past environmental

³ According to the *What Is Missing?* website, "Greenprint" was added in 2016, "Solutions" in 2021 (Lin, 2010a).

conditions are kept alive in the social fabric, while remaining vigilant not to succumb to a politically dubious and debilitating nostalgia.

Acknowledgement of nature's past abundance and diversity has to go beyond mere cognition and into the realms of affect and embodied experience for it to be effective. This is where literature and art come in: They can make present and felt what is absent, with stories, images, and sounds that are corporally sensed and that openly engage emotions. I have interpreted Macfarlane and Morris's books and Lin's memorial project as instances of environmental mnemonic care-work that enchant the public, seducing it away from its habitual ways of seeing, thinking, and feeling to remember and imagine differently. Through their aesthetic agency, they help shatter our environmental generational amnesia with a view to halting the creeping destruction of the natural environment and safeguarding the habitability of the planet for future generations.

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