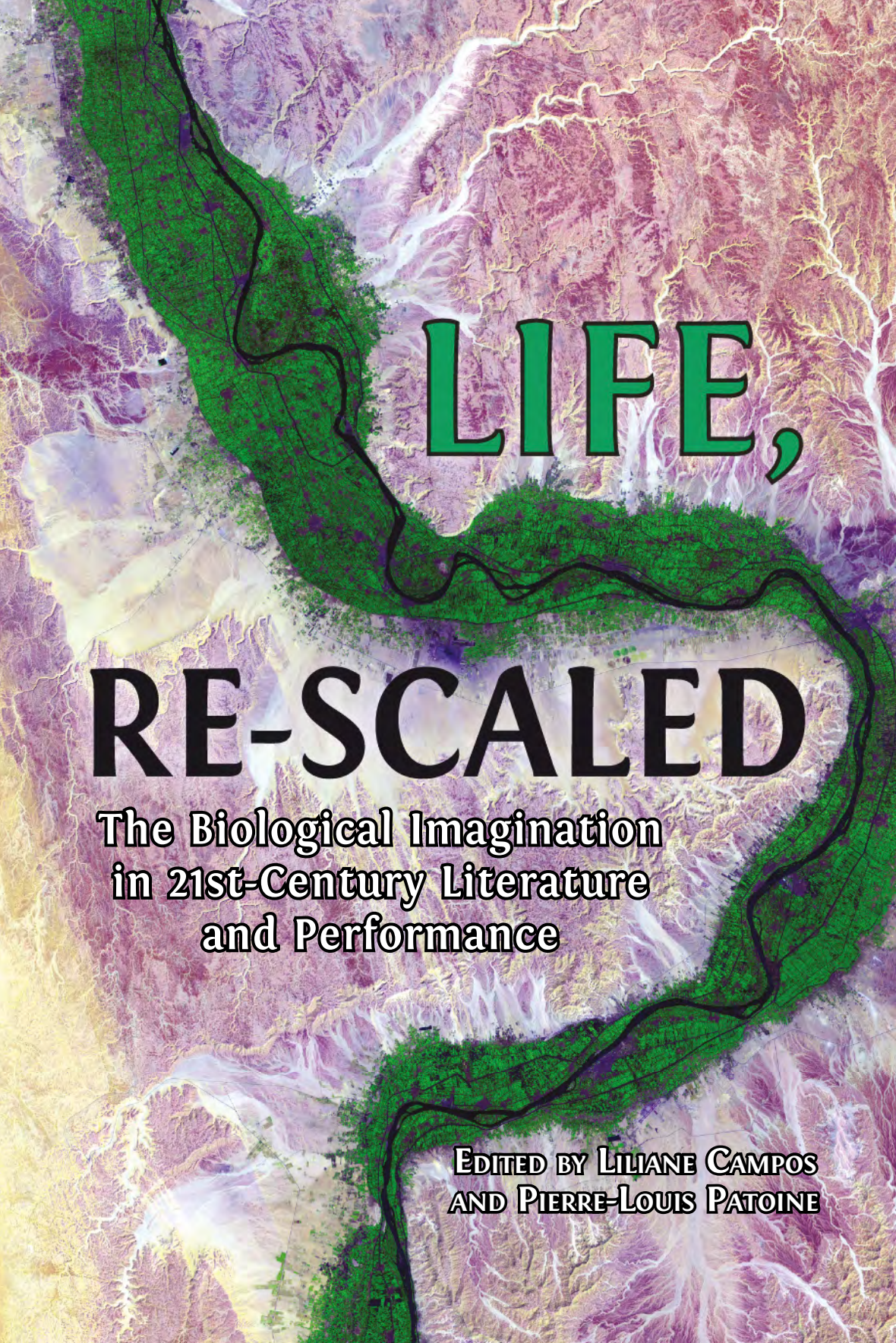
LIFE,
RE-SCALED
The Biological Imagination
in 21st-Century Literature
and Performance
Edited by Liliane Campos
and Pierre-Louis Patoine

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11. The Narrative and Aesthetic Strategies of Climate Change Comics

Susan M. Squier

Global climate change is an inescapable reality. While this phenomenon may seem the purview of physicists, atmospheric scientists, geologists, and geophysicists, the effects of climate change touch every living being. Yet many people find climate change too big to grasp and too traumatic to envision. Timothy Morton's concept of hyperobjects, 'things... massively distributed in time and space relative to humans', provides one useful framing for this wicked problem.[1] In a critical review of Morton's work, Elizabeth Boulton argues that his hyperobject frame can be helpful because it draws together all of the disparate details about climate change (which can otherwise be overwhelming) into one all-encompassing notion.[2] Yet she contends that art and literature can also play a crucial role in helping us face climate change, because 'humans

1 Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: The University of Minnesota Press, 2013). Horst Rittel and Melvin Webber have coined the term 'wicked problems' to describe issues with an indeterminate scope and scale that are too complex, multi-factorial, and shifting to admit of simple solutions. Horst W. J. Rittel and Melvin M. Webber, 'Dilemmas in a General Theory of Planning', *Policy Sciences*, 4.2 (June 1973), 155–69.

2 Editors' note: This view resonates with Kristin M. Ferebee's characterization of the hyperobject as marked by 'partedness' (chapter 8)—the irreconcilable heterogeneity of the parts forming a whole. Such characterisation is coherent with the hypothesis, formulated in this chapter, of an affinity between climate change—as an hyperobject—and the aesthetic heterogeneity through which artists choose to represent it.

 https://doi.org/10.11647/OBP.0303.11

[also] learn from stories, fable, and myths, which often describe dangerous or unwanted scenarios'.[3] A survey of some recent graphic narratives about climate change reveals that they address the challenges it poses not with abstraction but with scaled specificity, using narrative and aesthetic strategies afforded by the medium of comics. These climate change comics feature a narrative structure which see-saws between large scale non-fiction reporting and small-scale fictional interludes and an aesthetic strategy which toggles between a focus on the individual life course and attention to expansive complexities. As they move beyond generalities these comics can challenge our climate denial by showing us very specific, detailed, and affectively charged narratives that incorporate the biological discourses of ecology, environmentalism, epigenetics, and extinction.

Making the Global Threat Personal

'The Story of Kram and Ailat', an eight-part comic interspersed between the eleven chapters of Mark Kurlansky's young adult book on the problem of fish extinction, *World Without Fish*, presents the effects of climate change through several perspectives.[4] In Part I, Kram, an ocean biologist, takes his six-year-old daughter, Ailat, out fishing. The scene seems idyllic: they hear a humpback whale singing, and then it breaches right in front of them. Circling birds signal that fish are below and Ailat even catches a fish. Yet when she wants to take it back to her mother, her father, the ocean biologist, answers with the metaphor at the center of this comic: 'Sorry, my little sardine. There aren't enough of them left! We'll let this one go back to his family'. That evening, they dine out at Captain Leo's fish restaurant. 'Will you cut this halibut steak for me, daddy?' Ailat asks.

Thus begins a sequence of fishing trips in which Kram and Ailat join their friend Serafino, a commercial fisherman, and his sons, Frank and Salvy. Serafino has switched from line-fishing to netting, despite Kram's

3 Elizabeth Boulton, 'Climate change as a "hyperobject": a critical review of Timothy Morton's reframing narrative', *WIREs Climate Change*, 7 (2016), 772–85, https://doi.org/10.1002/wcc.410.

4 Mark Kurlansky and Frank Stockton, 'The Story of Kram and Ailat', in *World Without Fish* (New York: Workman publishing, 2011).

disapproval. 'Kram, I have to make a living', Sarafino explains. 'You won't be able to when all the fish are gone'. Kram counters. As Serafino and his sons adjust to the environmental collapse of the oceans, the comic juxtaposes their resourceful practices to Kram's increasing despair that his conservationist message is not being heeded. As Serafino's sons Frank and Salvy throw back the dead flounders that are bycatch, Kram broods that 'The whole system is out of balance… If we reorder the food-chain the whole thing could collapse!'

As the years pass, Serafino and his sons must alter their fishing methods to accommodate the shifting fish populations. The comic documents how their catch changes from halibut to Parrotfish, then herring, then krill, and finally to jellyfish and sea turtles. Kram and his daughter also alter their consuming practices, from their initial meal of highly valued halibut at Captain Leo's restaurant to the dystopian dinner that Kram and his daughter share near the comic's end. Their meal is krill, the food of baleen whales that is also used by industry to produce dog food and fish oil. With this final meal, the comic asks us to make connections along the food chain, from charismatic megafauna like whales, who are often over-represented in the imagination of extinction, to less charismatic species like sardines, and ultimately to human children, including Kram's 'little sardine', his daughter Ailat. In this narrative, sardines are the middle species, the mediators that make visible for both characters and readers the ecological relations that entangle and endanger all species, including humans.

'The Story of Kram and Ailat' is about more than the loss of fish populations. Through the eyes of Kram and his daughter we see not only the steady decline to a world without fish, but also the distal results of climate change: vanishing birds and insects, the ocean now orange and slimy from plankton, and fishing people struggling to maintain an endangered livelihood. Within each panel, we watch as age interacts with ethnicity and education, revealing economic, environmental, and social tensions, rendering some confrontations impossible and some questions unasked.

Kurlansky's comic addresses the tension between the fishing rights of indigenous peoples and the goal of scientific fish management. Yet it also demonstrates the limits of both forms of knowledge. From Kram the ocean scientist, to Serafino the fisherman and his sons, to

the newscaster and Dr. Kessel, who works for government fishery management, none of the adult men is able to fully formulate the social and environmental implications of fish decline. Instead, it takes the two young girls in the comic to articulate the situation: the declining ocean, with its diminishing tourism, is intimately linked to the social injustices resulting from climate change in the context of a global economy that requires fishermen to overfish. This augurs badly for human beings, because what happens to fish, birds, and insects can also happen—indeed, is already happening—to people. Ailat's daughter looks directly at the reader to ask a question that carries the punch of extinction: 'What is a fish?' [Figure 38] Addressing the biological theme of ecology, particularly the inescapable impact of the dwindling food chain, this comic encourages us to understand the affective and social impact of climate-change-based extinction.

Fig. 38 Frank Stockton, 'What's a fish?', from Mark Kurlansky, *World Without Fish* illustrated by Frank Stockton, p. 142 © Frank Stockton. All rights reserved.

'The Story of Kram and Ailat' uses a fictional narrative to encourage identification across species, making the threat of extinction personal. Josh Neufeld's *A.D. New Orleans After the Deluge* (2009) and Meredith Li-Vollmer and Mita Mahato's *Climate Changes Health: How Your Health Is at Stake and What You Can Do* (2016) rely on non-fiction narratives to press home the point that climate change adversely affects the health of the most vulnerable populations. The main actor in *A.D. New Orleans*

after the Deluge is clearly 'The Storm' as the first chapter reveals, in a twenty-one-page sequence of nearly wordless panels. Scene-to-scene panel transitions providing aerial images of New Orleans, Louisiana and Biloxi, Mississippi give way to satellite images of Hurricane Katrina itself as it spirals towards the coast in a series of moment-to-moment splash pages labeled August 23 through August 29. Finally, a two-page spread reveals the hyperobject itself, as the hurricane towers above New Orleans and (at the far right, in the most significant place) the Superdome. In the pages that follow, we see the devastation the storm causes, in panels offering sequential glimpses of a street sign being ripped away by the wind, buildings and houses battered by the cresting waters, and entire neighborhoods (and their inhabitants) under water.

While the first chapter follows a nonhuman actor, the next chapter reveals the many human agents who also figure in this story. In 'The City', Neufeld introduces us to the seven individuals whose interviews form the basis of the narrative: a doctor, a publisher and comic book fan, a waitress, a counselor, a high-school-aged Pastor's son, a Ukrainian-born convenience store owner and his fishing friend; they are all individuals who experience Hurricane Katrina, though in very different ways. To take one example, the story of Abbas the Ukranian store owner and his African-American friend Darnell demonstrates how cross-caste empathy and connection give rise to social support in a shared disaster. The men try to ride out the hurricane in New Orleans, but a two-page spread reveals the outcome:[5] the men stand waist high together in polluted water preparing to do battle against the expected rioters and looters. Their battle never comes; instead, the concentric circles of water around them draw the reader's attention to the expanding circles of people affected negatively by climate change. These concentric circles, in their scalar nature, are a visual strategy particularly well suited for the representation of the hyperobject Katrina. The men move beyond belligerence to access their own bravery, finding a way not only to survive but to help others, bringing bottled water to the other abandoned flood victims of the Third Ward. Neufeld's aesthetic decision to employ a

5 This image appears on pp. 100–01 of Josh Neufeld, *A.D. NEW ORLEANS: AFTER THE DELUGE* (New York: Pantheon Books, 2009) and can also be found in the original web comic: http://www.smithmag.net/afterthedeluge/2007/11/14/chapter-8/14/

progressive series of color washes as the comic progresses, representing all the people and places of a chapter in the same pastel color, challenges a conventional, racially binarized view of Katrina to illustrate the ever-expanding impact of this environmental disaster.

A similar expansive attention to the impact of climate change appears in Meredith Li-Vollmer and Mita Mahato's beautiful cut paper comic, *Climate Changes Health: How Your Health Is at Stake and What You Can Do*. Created under the auspices of Seattle and King County Public Health, by a public health educator and a cut paper artist, this comic links climate (often erroneously conceptualized as a non-biological entity) to health, and thus to both human and animal biology. The images of Seattle, Washington in the panels reveal the impact of climate change close to home. An asthma puffer juxtaposed to the familiar Seattle Sky Needle registers the respiratory impact of the changed Western Washington climate. Four panels invoke the most urgent public health concerns linked to climate change: 'mosquitoes, ticks, and other disease vectors' result in more cases of West Nile Virus and lyme disease, there is an increased incidence of toxic algae and polluted shellfish while 'wildfires, heavy rainfall, flooding, and windstorms' resulting from climate change trigger stress and anxiety; specific populations are at greater risk for health disparities, including low-income workers and pregnant women whose fetuses may incur the epigenetic impact of those climate-related stressors [Figure 39]. Yet, four final panels illustrate that human beings *can* make a difference, at the scale of the individual and the population. People can choose to use a drying rack for laundry, eat less meat and dairy and more vegetarian meals, repair and recycle clothes and electronic devices, and carry reusable water bottles. Together, they can ride buses or join van pools, plant trees, create community gardens, and engage in 'smart community planning and clean energy policies'.

Anthropomorphic Figures

Many climate change comics adopt a scientific perspective while also incorporating strategies to render the information more accessible and palatable to their readers. Yet even here the strategies differ widely. Darryl Cunningham's 'Climate Change', in his volume *Science Tales: Lies, Hoaxes, and Scams* (2011), reframes the scientific question and its human

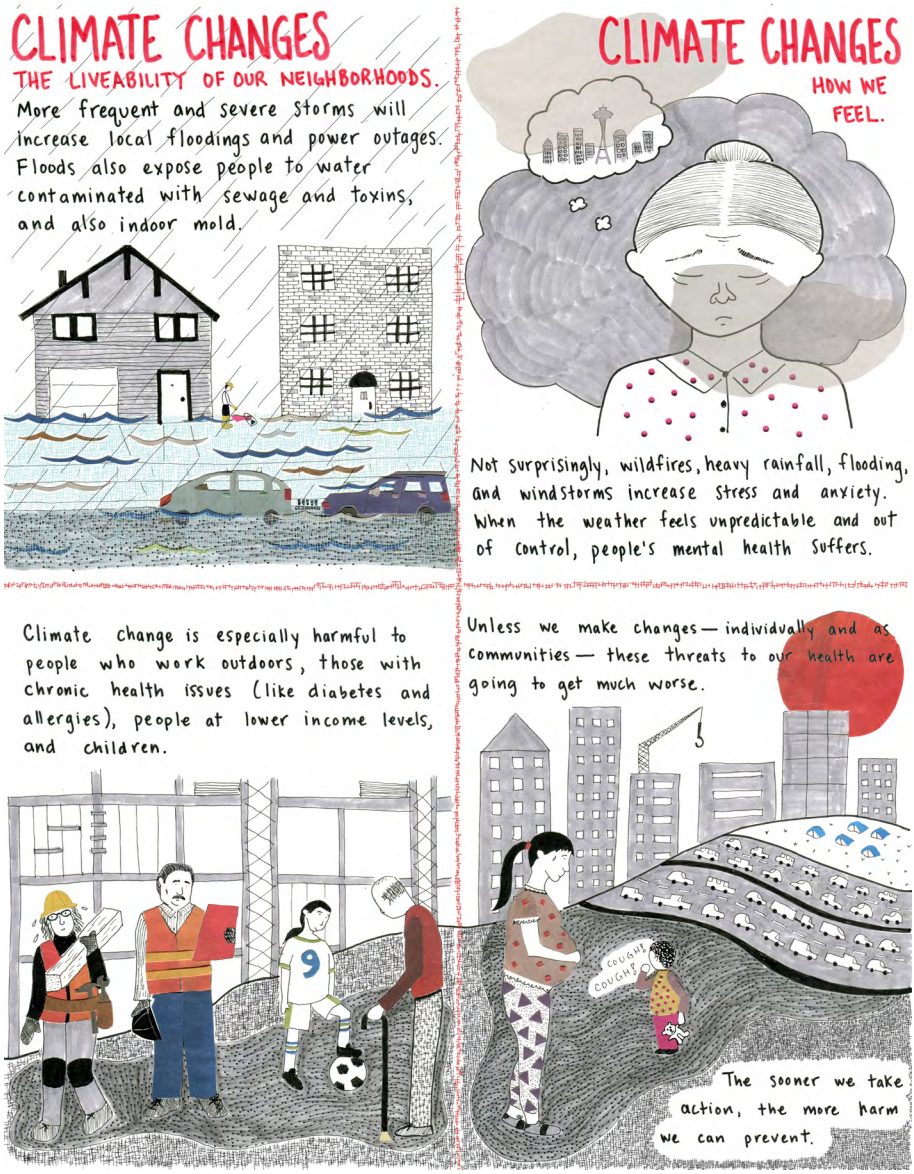


Fig. 39 Li-Vollmer and Mahato, from *Climate Changes Health*, written by Meredith Li-Vollmer and artwork by Mita Mahato, published by Public Health—Seattle & King County (2019) © Li-Vollmer and Mahato. All rights reserved.

reception by bringing its male protagonist into conversation with a polar penguin who explains 'the argument for human-driven climate change' in a punchy sequence of panels. The penguin distinguishes between the two sorts of people who resist the theory of human-created climate change: those who 'don't know all the information and are therefore doubtful of the theory. But... tend to be aware of the limits of their knowledge and so remain open to the experience that climate change might be real', and 'those who... reject climate change, not on scientific grounds, but on the grounds of ideology and dogma'.[6] Despite the 'funny animals' tone, there is a historical heft to this penguin preaching. The comic draws on an article in the 2010 *Proceedings of the National Academy of Sciences* surveying the climate change denial groups funded by the Heartland Institute, the American Enterprise Institute, and Koch Industries, the latter being the major donor to climate denialist organizations 'motivated by an ideological commitment to minimal government and free markets'.[7] We move then to the Climategate e-mail controversy of November 2009, in which climate scientists were charged with manipulating research by major media outlets. Although the scientists were ultimately exonerated, the damage was already done, since 'media outlets had devoted five to eleven times more stories to the accusations against the scientists than they had to the resulting exonerations'.[8] The comic ends with a bleak page of penguin exhortation that mingles photographs (close up and views from space) with lyrical cartooning to conclude: 'The science predicts that these events could happen. Let's not leave it to the super-rich to decide who lives and who dies'.[9]

The Great Transformation—Can We Beat the Heat? engages its readers by returning to one of the most venerable comics characters, Little Nemo, protagonist of Winsor McKay's *Little Nemo in Slumberland*, which ran in the *New York Herald* from 1905 to 1911. The plot framework is always the same: Little Nemo eats a dinner of Welsh rarebit and it disagrees with him, giving him a wild array of disastrous dreams. Struggling in 'slumberland' to save himself, he thrashes around, falls

6 Darryl Cunningham, 'Climate Change', *Science Tales: Lies, Hoaxes, and Scams* (Brighton, UK: Myriad Press, 2011), pp. 143–44.
7 Cunningham, 'Climate Change', pp. 147–48.
8 Ibid., p. 151.
9 Ibid., p. 153.

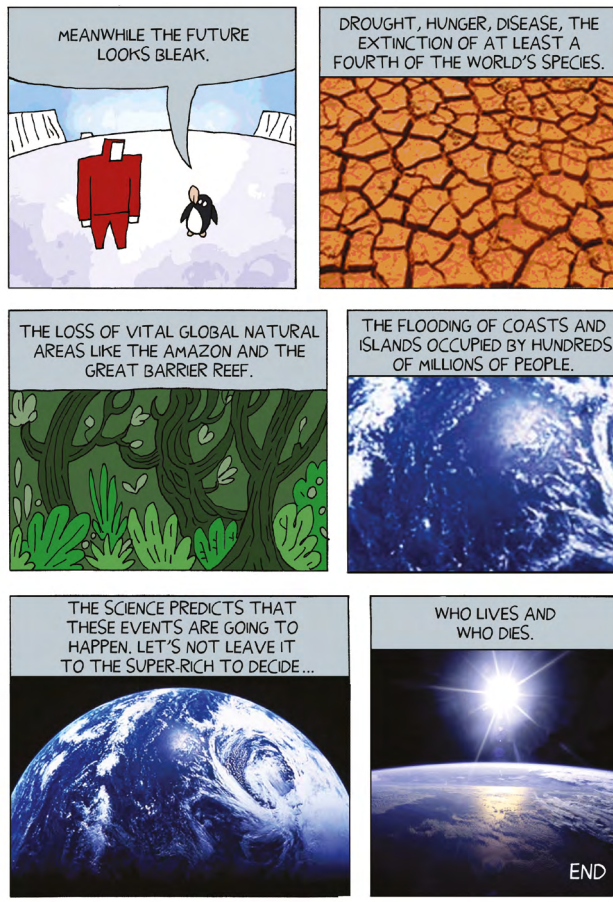


Fig. 40 Image reproduced from the chapter 'Climate Change' from *Science Tales: Lies, Hoaxes and Scams* by Darryl Cunningham © Myriad Editions, UK, 2019. www.myriadeditions.com. All rights reserved.

out of bed, and finally wakes up. Feverish Little Nemo reappears in *The Great Transformation* as the overheating earth. Its dreams are populated by climate scientists and politicians who compare the impact of two degrees of earth warming to the organ breakdown a fever causes in the human body. Unlike Darryl Cunningham's preaching penguin who makes the grim climate change story more palatable, the image of the

earth as Little Nemo elevates the climate scientists' predictions into our collective fever dream.[10]

Biography and Autobiography

Biographical and autobiographical comics enable a reader to draw near the overwhelming topic of climate change by taking a route that is measured, specific, and local. In Mary M. Talbot and Brian Talbot's *Rain* (2019), we open with images of the devastating 2015 Boxing Day flood in Thrushcross, Yorkshire: flooded streets, canal boats beached on cars half-submerged in mud; houses flooded and their drenched contents out on the street for pickup. Then, moving back in time, we follow Catherine, an English teacher from London, as she is drawn into environmental activism over a series of visits to the North of England to see her environmentalist lover, Mitch. We see things through Catherine's eyes, as she slowly comes to understand how traditional practices of burning the heath heather, digging drainage ditches, intensive grouse farming, and even grouse hunting create environmental destruction in the once idyllic Yorkshire moorlands. As Cath comes to understand the relationship between the local environmental issues and the flood risk all over the United Kingdom linked to climate change, she abandons her initial impatience with activism and joins a massive protest demanding 'Climate Action Now!'. *Rain*'s epigraph comes from Alexander von Humboldt: 'Our imagination is struck only by what is great; but the lover of natural philosophy should reflect equally on little things'.[11] Moving from the local story of one person's environmental activism to the more 'universal' narrative of natural philosophy animating von Humboldt's travel journal (1799–1804), the comic moves across cultural and temporal scales to portray the ecological scales of hyperobjects.

10 Alexandra Hamann, Claudia Zea-Schmidt, Reinhold Leinfelder, Jörg Hartmann, Jörg Hülsmann, Robert Nippoldt, Studio Nippoldt, and Iris Urgurel, *The Great Transformation: Climate—Can We Beat the Heat?* (Berlin: WGBU, 2014). I discuss this comic at greater length in 'Scaling Graphic Medicine: The Porous Pathography, a New Kind of Illness Narrative', in *PathoGraphics: Narrative, Aesthetics, Contention, Community*, ed. by Susan M. Squier and Irmela Marei Krüger-Fürhoff (University Park: Penn State University Press, 2020), pp. 205–25, https://doi.org/10.1515/9780271087337-014.

11 Mary M. Talbot and Brian Talbot, *Rain* (London: Jonathan Cape, 2019), p. 2.

In *Climate Changed: A Personal Journey through the Science* (2014), Philippe Squarzoni also combines a macro-scale perspective on climate change with a focus on micro-scale, or individual, experience.[12] The comic incorporates research and discussions with members of the IPCC (Intergovernmental Panel on Climate Change), as well as consultations with six other experts in economics, environmental management, sustainable development, nuclear physics, and development. Their accumulated knowledge is dense and frightening. But it is the personal narrative that brings it into focus.

As the book begins, Squarzoni ponders the aesthetic and narrative challenges of beginning 'a book, or a film, or a graphic novel', noting 'there are beginnings we never forget... openings that set the tone... the colors that impregnate the rest of the work... and the memories we keep'.[13] He settles on the memory of a country house he visited as a child, and acknowledges that 'for this book, it's not the beginning that's the most difficult. The hardest thing is... how to end it'.[14] On a return trip with his wife in 2006 he muses over his childhood memories: 'As if all those events happened simultaneously. As if they merged over time. But there must have been a sequence. A beginning, a middle... an end'. The questions of origins, causes, and outcomes stay with Squarzoni as he begins research for a new book that will help him understand not only what 'climate change', 'greenhouse gases', and 'reducing emissions' mean, but more importantly 'if it was global warming, do we have any leeway? How much longer can we just let ourselves go on doing nothing?'.[15] As he continues his research in that bucolic setting, sensual images of walks in the Swiss countryside clash with abstract images of charts and graphs and brassy visuals from commercial advertising in a gut-wrenching collision of different visual modes. 'Talking heads' interviews with climate change experts are interspersed with the author's personal diary, in which he struggles to overcome his own climate denial and acknowledge the trauma he feels in the face of impending disaster caused by our out-of-control consumerist lifestyle.

12 Philippe Squarzoni, *Climate Changed: A Personal Journey Through the Science* (New York: Abrams Comic Arts, 2014), translated by Ivanka Hahnenberger. Originally published in 2012 as *Saison brune* (Paris: Editions Delcourt).

13 Squarzoni, *Climate Changed*, p. 9.

14 Ibid., p. 14.

15 Ibid., p. 32.

The densely argued pages of interviews give a visual and verbal structure to Squarzoni's growing understanding of the ways the interlocked environmental and fuel crises put the entire globe at risk. Yet the emotional heft of the book is felt elsewhere. Squarzoni's most eloquent rhetorical strategy lies in the wordless panels in which his own personal response to the scientific research is open to the reader, so he (and we) can sit gazing at the mountain landscape and pondering the personal impact of climate change. And pondering. And pondering. The seemingly abstract challenge posed by his research is made fully specific when, midway through the volume, we find ourselves with Squarzoni still frozen at the beginning, trying to imagine an adequate response. Lyrical panels show the summer home, and the grassy lanes beyond it, followed by images of the road diving steeply downhill into a tunnel. Each quiet panel features a line or two of text whose poetic tone captures the metaphoric implications of the landscape:

> How to begin? / The clock is ticking. And time is running out./ It's already too late to go back. / The change has taken place. / A new story is beginning. / A story that we cannot avoid. / A time when we've already run out of time. / A time that's rushing away from us, expired. We're committed in spite of ourselves. / If we want to avoid the worst of the consequences of climate change, we have only a few decades to reduce our greenhouse gases significantly. / The coming years will be crucial. / When and where shall we begin?[16]

The sequential deferrals ('when and where shall we begin?') in this volume create a mood of hopelessness that lingers in the concluding sequence, a walk in the stark and snowy woods whose sequence of etched panels features thin lines of text that read like a haiku.

> I understand the desire to point out the answer. To finish this on a positive note. / But if I'm being honest with myself, I believe three things. / One, there's a doorway we need to pass through. / Technically, it's still possible to avoid the worst consequences of climate change and to take the necessary measure to manage the upheavals that are already inevitable. / Two: the doorway is not very wide. It closes a little more each day. And we have only a little time to pass through it./ Three: I don't think we'll pick that door.[17]

16 Squarzoni *Climate Changed*, pp. 148–51.
17 Ibid., p. 453.

At the end of the book, the attempt to conclude is repeated, as was the attempt to begin in earlier episodes. Close to the end, we find three tiered panels of stark black branches against the sky. The text returns us to where we began: 'So, how to end this book? / Just because the answer is filled with gloom doesn't mean the question was pointless. / To care how these questions are being asked shows that we care about the future'. The following page, two spare line drawings of branches against the sky and a snowy precipice, still seems to offer hope: 'And who knows? I could be wrong. / The story isn't over' (see Figure 41). The comic ends with an ambiguous image of sun breaking through clouds over the mountain range.[18]

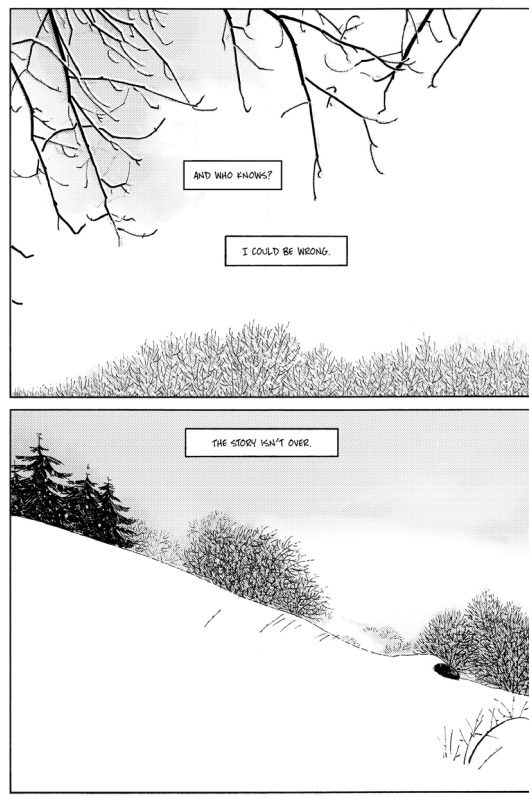


Fig. 41 From *Climate Changed* by Philippe Squarzoni. *Saison brune* by Philippe Squarzoni © Éditions Delcourt. 2012. Text and illustrations by Philippe Squarzoni. Translation by Ivanka Hahnenberger. English translation copyright © 2014 Harry N. Abrams, Inc. All rights reserved.

18 Ibid., pp. 456–58.

Scientific Distance Versus Intimate Experience

Two final climate change graphic novels take a more indirect route to the topic, but their impact is just as intense. Lauren Redniss' exquisite *Thunder & Lightning: Weather Past, Present, Future* introduces climate change in the eighth chapter, 'Dominion', following chapters addressing Chaos, Cold, Rain, Fog, Wind, Heat, and Sky, and followed by chapters addressing War, Profit, Pleasure, and Forecasting.[19] Although '[f]or millennia, people have found meaning, and divinity, in weather', Redniss first casts climate change as a problem approached from the technical side. For the IPCC, 'Warming of the climate system is unequivocal'. For Harold Brooks of the National Oceanic and Atmospheric Administration's National Severe Storms Lab, it's simple: 'The climate is warming, and the planet will continue to warm. That's almost an uninteresting statement, it's so obvious'.[20] The Military Board of CNA Corporation publishes a report stating that 'climate change will "place key elements of our national power at risk and threaten our homeland security"'. That report counsels its readers, 'When it comes to thinking about how the world will respond to projected changes in the climate, … it is important to guard against a failure of imagination'. Or, to put it directly, 'Can mankind and technology replace God and magic to claim dominion over the weather?'.[21]

Redniss introduces one of the prime movers in the argument for geoengineering to combat climate change: the mathematical economist and theoretical physicist Nathan Myhrvold. In a densely written text, she sets out his argument for what he calls 'the Stratoshield', a method for 'bounc[ing] some of the sunlight back out into space'. 'The simplest approach', which he admits 'sounds really dumb', involves 'a series of balloons that hold up a pipe' that pumps sulfate (or sulfur dioxide) into the sky. The Stratoshield would make it possible, Myhrvold argues, 'to

19 While this volume stretches the definition of comics by alternating between heavy pages of text and full-page and two-page images, it also incorporates many of the strategies of comics, from speech balloons to iconic animals. I also include it here because of the power and argumentative force that its images hold. They are far from merely illustrative.

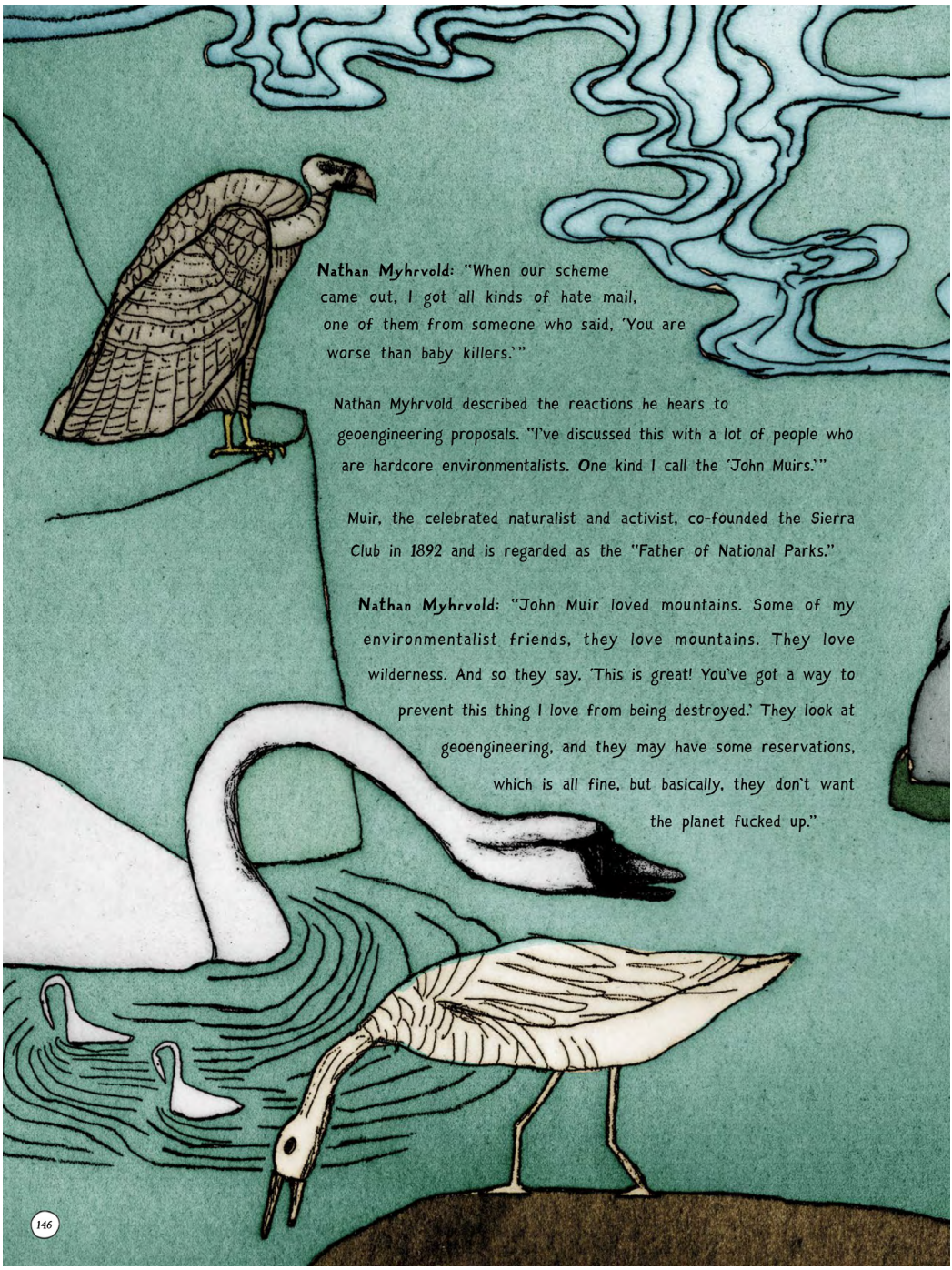
20 Lauren Redniss, *Thunder and Lightning: Weather Past, Present, Future* (New York: Random House, 2015), p 142.

21 Ibid.

stabilize the temperature, or stabilize the climate, at any temperature you wanted. So you could say, "Let's stabilize it at today's temperature." That's probably the best thing you could do. But you could also say, "Let's take it back to the preindustrial climate. Let's just negate all global warming"'.[22] Despite fear that this invention will turn our blue skies cloudy and grey, Redniss reveals that what was once an idea too absurd to countenance publicly is now being taken seriously.

In the following double page spread, Myhrvold describes the way that hardcore environmentalists, or those he terms 'John Muirs', respond to his geoengineering proposals. Myhrvold, journalists Elizabeth Kolbert and Emma Maris, climatologist Alan Robock and environmental scientist David Keith sit around a grey conference table debating the ethics of intervening in the climate. Threadlike speech balloons form a climate of their own, a dark brown atmosphere under which the group considers possibilities: what the economic impact would be were a multinational corporation to develop the technology and weaponize it; what the geopolitical impact would be should the technique be used by the Maldives or Brazil to produce a climate that suits their national needs; what the impact is of 'consciously admitting that we are living on a managed planet'; and finally whether, as distasteful as we find it to interfere with nature, a time will come when 'we are morally obligated to do it'. In his closing statement, Myhrvold brings the debate down to brass tacks: 'Look, geoengineering should only be deployed if we think there's really going to be a problem. If a disaster scenario doesn't occur, there's no reason to do this shit'.[23] Such directness is surprising in a book whose aesthetic strategy seems more aimed at soothing and lulling. Redniss shows that not only are both strategies compatible, but they are also surprisingly effective in presenting the complexity of this wicked problem. The contrasting styles, tones, and genres appear to be a feature shared by many climate change comics. Perhaps the 'hyperobject' that is climate change demands such formal and aesthetic heterogeneity.

22 Ibid., p. 145.
23 Ibid., p. 149.



Nathan Myhrvold: "When our scheme came out, I got all kinds of hate mail, one of them from someone who said, 'You are worse than baby killers.'"

Nathan Myhrvold described the reactions he hears to geoengineering proposals. "I've discussed this with a lot of people who are hardcore environmentalists. One kind I call the 'John Muirs.'"

Muir, the celebrated naturalist and activist, co-founded the Sierra Club in 1892 and is regarded as the "Father of National Parks."

Nathan Myhrvold: "John Muir loved mountains. Some of my environmentalist friends, they love mountains. They love wilderness. And so they say, 'This is great! You've got a way to prevent this thing I love from being destroyed.' They look at geoengineering, and they may have some reservations, which is all fine, but basically, they don't want the planet fucked up."

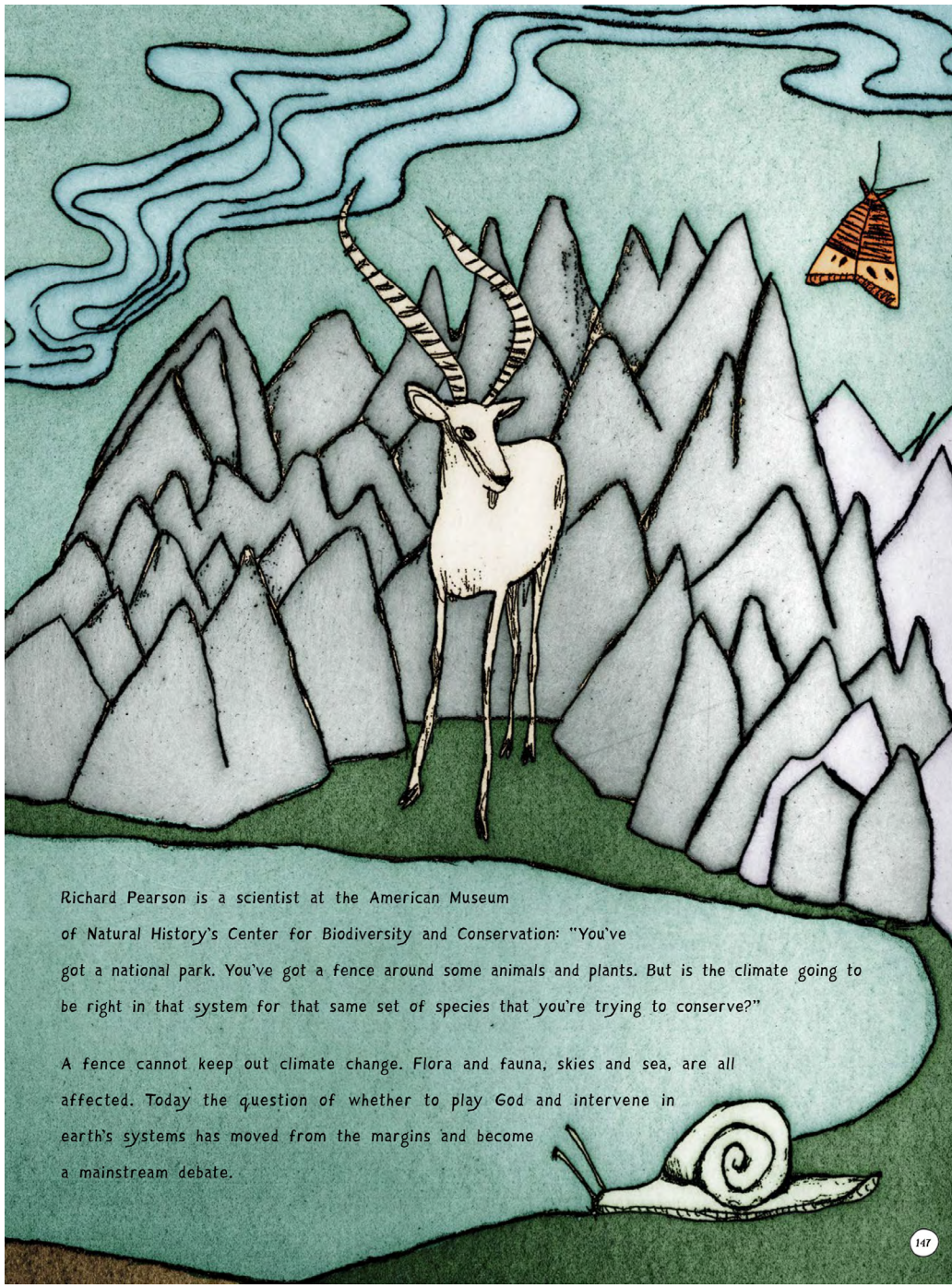


Fig. 42 Lauren Redniss, *Thunder & Lightning: Weather Past, Present, Future* (Random House, 2015), pp. 146–47 © Lauren Redniss. All rights reserved.

Conveying the impact of climate change also requires careful contextualizing. Images of mountains and rivers, a swan, a shorebird, a vulture, an antelope, a moth, and a snail precede the double-page spread that pictures the round-table discussion between environmentalists, journalists, and engineers. These natural images dramatize the tension between Myhrvold's aspirations to dominate nature and environmentalists' commitment to protect the wilderness and its creatures. The comment of Richard Pearson, a scientist at the American Museum of Natural History's Center for Biodiversity and Conservation, takes on additional force when considered in relation to the round-table discussion to follow: 'Flora and fauna, skies and sea, are all affected. Today the question of whether to play God and intervene in earth's systems has moved from the margins and become a mainstream debate'[24] [Figure 42]. Perhaps these iconic images of mountains and rivers, birds, and mammals are a way of convoking a 'Parliament of Things' in which 'all affected' can participate in the debate. Humans now occupy the margins while the mainstream is now the whole society of nonhumans, who will debate how best to address climate change.[25] A reviewer captures the impact of the deliberate contrast between visual form and conceptual content:

> On one question, [Redniss] is unequivocal: 'Scientists agree that we are living in an age of global climate change,' Redniss writes in 'Dominion.' 'Human activities are transforming the planet. The consequences, scientists contend, include warmer temperatures, extreme events, wildfires, floods and droughts, rising sea levels and species extinction.'
>
> One can imagine, at this point, certain dissenting readers sitting up in alarm, having been beguiled, perhaps, by the many personal anecdotes, the colors, the seemingly artless font… . Such a reader might find an approach like this particularly irresponsible, or even dangerous. Certainly, anyone will recognize its power.[26]

While interviews are used as a documentary method in the works by Li-Vollmer and Mahato and Squarzoni, and as a rhetorical strategy in

24 Ibid., p. 147.

25 My thanks to Liliane Campos and Pierre-Louis Patoine for this, and other, insightful suggestions. For 'Parliament of Things', see Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993), pp. 142–45.

26 Sadie Stein, '"Stormy Weather", review of *Thunder and Lightning* by Lauren Redniss', *New York Times* (11 October 2015).

the comics by Redniss and Hamman et al., interviews function as an authenticating strategy in Brian Fies' *A Fire Story*. This volume first began as a blog entry, a twenty-page online comic Fies created days after he was forced to flee his family home in 2017 to escape the Northern California wildfire that killed forty-four people and destroyed more than 6,000 homes, including Fies' own.[27] The wide readership and public acclaim this comic received led Fies to expand it, within the year, into 'a full-length graphic novel, including environmental insight and the stories of others affected by the disaster'.[28] Fies is one of the founders of the field of Graphic Medicine, as well as the author of the Eisner-winning comic *Mom's Cancer*, and this venture into documentary cartooning arguably stretches the field of graphic medicine to include the medical impact of a devastating fire. I am pushing the field still farther when I nominate *A Fire Story* as a climate change comic, so let me set out the reasons for making that leap.

One way to claim something as a climate change comic would be to identify explicit mentions of climate change in its argument or narrative. Most of the comics I have dealt with already make it explicit that their mission is to transmit information about climate change in such a way that the reader realizes the need to respond to its challenge, even if they differ in the responses they imagine. Fies' memoir is different: the challenges this comic documents are the forced evacuation from his home, its destruction by fire, and the fire's impact on his broader community, which ranges from forced displacement and economic devastation to social fragmentation. Only once Fies and his family have evacuated and are beginning the process of rebuilding the records of their lives does the concept of global climate change emerge.

A Fire Story avoids almost completely the graphs, talking heads, and over-arching explanations of climate change that characterize many of the comics I have discussed. Rather than abstract discussions of its ecological, environmental, and emotional impacts—the ways that fossil fuel use has led to rising greenhouse gases, and thus to droughts, floods, and fire, and finally to helpless despair—Fies' comic focuses on the impact of a climate-change related fire *in medias res*. In its attention to the

27 The Fies family fled on Monday 9 October 2017. The house was destroyed by the fire.

28 Brian Fies, flyleaf copy, *A Fire Story* (New York: Abrams Comic Arts, 2019).

objects, practices, and moments associated with one family's experience of the 2017 California fires, it represents human beings coping by telling themselves the oldest story of all: we will endure.

An early image in the comic links the fire to climate change, picturing the multiple 'weather and climate disasters' of 2017: fires in the West and hurricanes in the South and East.[29] But the story moves away from that macro-scale concept to concentrate on the local and specific practices essential to rebuilding. Like Squarzoni, Fies acknowledges the reader's need for hope and completion, yet admits he can't deliver. 'People seem to want a story with uplift and closure, but I have no uplift to give, and anyone who says "closure" around me gets a punch in the nose'. Like Squarzoni's comic, the conclusion of *A Fire Story* is ambiguous: 'But even if you lose the place and the stuff, home can still be the memory and hope and promise of those things. Sometimes home is nothing but a bare patch of dirt. This is mine'.[30]

So, what does this mean about the role of art and literature in communicating about climate change, or more specifically about the narrative and aesthetic strategies adopted by comics dealing with climate change? Perhaps that it is no longer possible to refuse the abstract perspective, to refuse to countenance the hyperobject and all its implications in a deliberate decision to focus on the smaller scale human story. That is, if we want to change our own narrative, and build a different future. When I reread Fies' 2019 comic in 2020, during the escalation of lightning-strike fueled fires in California, I found myself doubting Elizabeth Boulton's reassuring observation that, 'humans *learn* from stories, fable, and myths, which often describe dangerous or unwanted scenarios' (emphasis added).[31] I wondered whether there is a limit to our capacity to learn from those stories we tell. As Timothy Morton tells us, the hyperobject of climate change is not accessed 'across a distance', but rather must be faced 'here, right here in my social and experiential space ... [it] becomes clearer with every passing day that

29 Ibid., p. 48.

30 Ibid., p. 142.

31 As Farhad Manjoo observed in the *New York Times* on the day I am concluding this essay, 'climate change has ushered in a new era of "megafires" that includes some of the largest blazes the state has ever faced'. 'California, We Can't Go On Like This', *New York Times* Opinion section (26 August 2020).

'distance' is only a psychic and ideological construct to protect me from the nearness of things'.[32]

Perhaps that is why Fies' graphic narrative refrains from situating his family's story of endurance in a form that presents the full impact of climate change. That would be discouraging at best, and downright despair-inducing at worst. A temporally and spatially scaled perspective on the California fires, one presenting them as a widespread and escalating manifestation of climate change, might have undercut a commitment to rebuild one's home and one's community. At least it might generate a different definition of rebuilding, one modeled by the work of Jem Bendell and the Deep Adaptation Forum.[33]

Instead, the Fies family functions in synecdoche, as stand-ins for the human family more broadly. We follow their story as they respond not to climate change, which seems a distant problem to be managed by the National Oceanographic and Atmospheric Administration (NOAA), but rather to the specific, multiple Northern California wildfires that drive them out of their home. As we can see, if we contrast Fies' use of a full splash page of highly detailed satellite photography to show the fires to his choice of an abstract half-page schematic map claiming to present 'a historic year of weather and climate disasters', the fires seem frighteningly close, while climate change still seems a distant abstraction.[34] (see figures 43 and 44). In its material specificity, pragmatic detail, human warmth, and social embeddedness, as well as its portrait of a family not yet able to grasp the full implications of this hyperobject, *A Fire Story* may well be the indexical climate change comic.

32 Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: The University of Minnesota Press, 2013), loc. 526 of 4946.

33 See Jem Bendell's website (https://jembendell.com) and Jem Bendell, 'Deep Adaptation: A Map for Navigating Climate Tragedy' (2018, 2020), http://lifeworth.com/deepadaptation.pdf.

34 Fies, *A Fire Story*, p. 40 and p. 48.

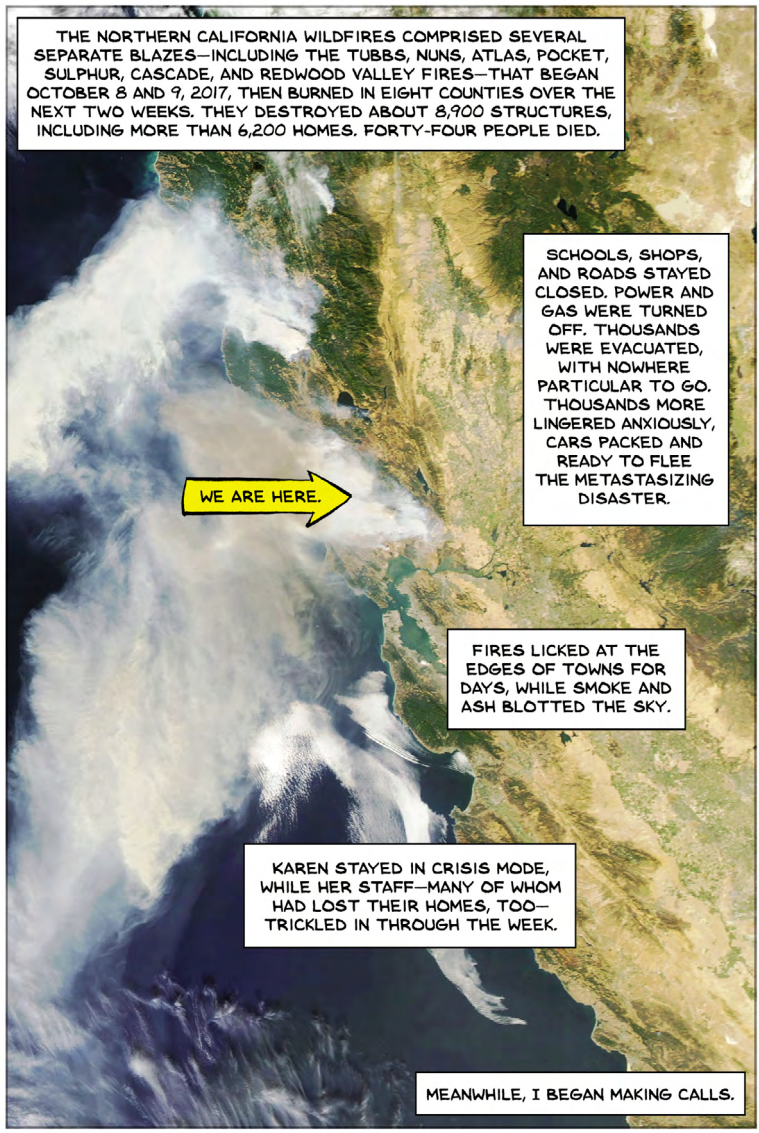


Fig. 43 From *A Fire Story* by Brian Fies. Text copyright © 2019. 2020 Brian Fies. Used with permission of Abrams ComicArts®, an imprint of ABRAMS, New York. All rights reserved.

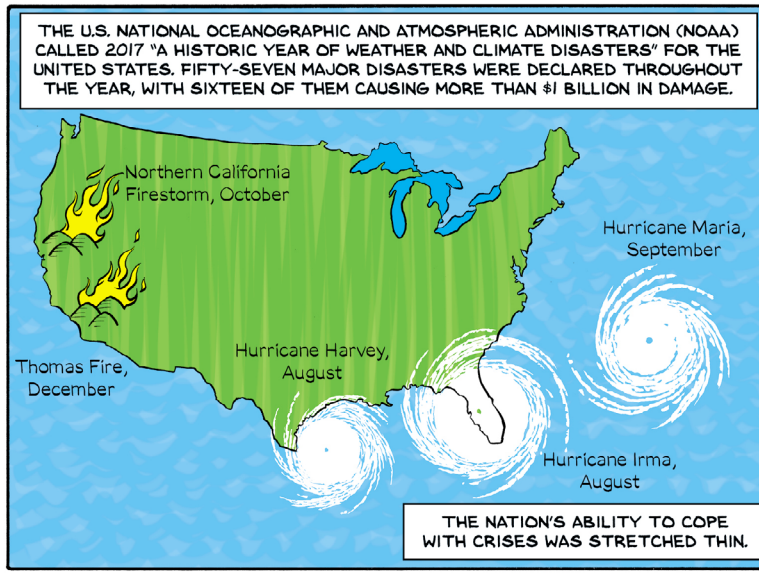


Fig. 44 From *A Fire Story* by Brian Fies. Text copyright © 2019. 2020 Brian Fies. Used by permission of Abrams ComicArts®, an imprint of ABRAMS, New York. All rights reserved.

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