

The Things We Knew in 1972

The Forgotten Green History

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Sample Translation

Original title Wat we toen al wisten
Publisher Querido, 2022

Translation Dutch into English
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Prologue – The sound of the climate crisis

‘... man must be careful, in cutting down the woods, not to transgress the limits which Nature has prescribed.’

Harland Coultas, *What may be learned from a tree* (1860)¹

This is not what woods or forests should sound like. Snapping under our footsteps are not twigs, but leaves. Some brown, but most are eerily green. And that's not how it should be either: shiny green leaves on the ground. In August. In autumn, all the fallen leaves are brown and lifeless. If there has also been rain, the woods become a little soggy. And the leaves don't crackle when you walk on them. But they do now. It has been dry for weeks, but we hear a thunderclap in the distance: today we are not walking through the woods, we are walking on the climate crisis.

And the summer of 2020 didn't even seem that extreme. 2018 was truly dry; the month of July was never drier, and on top of that we had sixty consecutive days with a temperature of 20 degrees or more that summer. 2019 saw no fewer than eleven tropical days (30 degrees or higher), the mercury even hovering around 40 degrees for days on end. The weather was never that scorching hot in 2020; plus there was a normal amount of precipitation. And yet, eleven tropical days were measured by Dutch meteorological institute KNMI in De Bilt, eight of which on consecutive bone-dry days. And this umpteenth weather record was too much for the trees in our Bilthoven woods. They dropped their leaves en masse. A survival mechanism. Did we have one too? Or was it just our imagination that we were seeing the consequences of global warming before our eyes and feet?

Six months later, biogeochemistry professor Filip Meysman from Antwerp confirmed the suspicion in the newspaper: ‘During the heat wave of August 2020, we were spending a few days on the coast. When we came home, the lime tree and hornbeams in our

garden had lost nearly all their leaves. Trees defend themselves against the heat by evaporating water. But the prolonged drought during the spring meant there wasn't enough water in the soil to evaporate.' And so the trees shed their leaves, to prevent the moisture in their branches and trunks disappearing. 'It was the first time I had seen climate change at work in my own garden,' said the professor. 'It felt like autumn in my garden, in the middle of summer.'ⁱⁱ

Unforeseen consequences

If I want to know how exceptional a weather phenomenon is, I have to look it up on a meteorological institute's website. Meysman knows those numbers by heart. And he also knows the climate reports that predicted such an abrupt increase in heat waves, albeit not before 2050. So global warming is not only well under way, it is also happening much faster than feared, than believed, than anticipated.

It is no surprise and yet we are surprised. By the speed. By the heat. As early as the autumn of 1971, American computer pioneer Jay Forrester explained on Dutch television how this was possible. People expect cause and effect to be clearly observable. Drop a glass; the floor is wet. But in complex systems, the link is not that simple. The interactions between the individual components can have consequences we don't anticipate. So, according to Forrester, we had better stop relying on our intuition because man frequently makes things worse due to his limited understanding of the actual interplay between the various components. A wise lesson, yet one we did not learn.

If we heat our homes with gas, it becomes less cold inside. But that it would also cause the temperature to rise outside - who would have thought that? Letting things get out of hand is also inconsistent with how we view ourselves. The central theme of history was that it would bring us more control over the elements. And perpetual progress. Witness the set phrases uttered by relatives, stunned by science and technology again and again, in those same 1970s: 'The things they invent!'; 'Well, you have to keep up with the times, don't you?'; 'There's no stopping progress'.

It is a cruel irony of history: a civilisation driven by faith in progress producing a permanently damaged world in which the survival of some species, human beings included, remains structurally uncertain. Over the course of history hubris has repeatedly had disastrous consequences, but any calamities almost always affected contemporaries, not all future generations. However, carbon dioxide that we burn today will remain in the atmosphere for another hundred thousand years before it is absorbed by sediment and rock.ⁱⁱⁱ

Dissonance

Overconfidence is bad and the damage to the planet is unfortunately irreparable, but if there is no ill will involved, can we and especially our ancestors be blamed? They genuinely believed in progress, and all of us who are alive today thanks to vaccines and other miracles of science can only humbly bow our heads in the face of so much ingenuity and invention. Besides, as with slavery and colonialism - those were different times! Well, not quite. Just as

there was plenty of protest against those forms of subjugation of other persons and peoples two hundred years ago, so, too, there was fierce criticism of our interaction with nature.

As early as 1818, during the Industrial Revolution, Mary Shelley evoked a world in *Frankenstein* in which man would lose control of his own creation. At that time, the romantic poet William Wordsworth spoke of a 'crime against Nature', which called for 'avenging her violated rights'. Belgian Roman Catholic priest, writer, and poet Guido Gezelle in the mid-nineteenth century warned of the indomitable 'power' of the 'vapour-driven monstrosity' - the steam train that was merely an early product of the even more indomitable human desire to dominate nature and so 'pushed blindly forward / into the black future'.

His French contemporary, Parisian lawyer Eugène Huzar, emphasized that modern science took little or no notice of the impact of its inventions, and he foresaw that things might end badly: 'In a hundred or two hundred years, when the world will be criss-crossed by railways and steamships and covered with factories, we will emit billions of cubic metres of carbon dioxide and carbon monoxide, and as by then the forests will also have been destroyed, it is not unlikely that those hundreds of billions of cubic metres of carbon dioxide and carbon monoxide will disrupt the harmonies of the world'.

Not only imaginative poets and apocalyptically inclined jurists were concerned. Diplomats and scientists who were able to travel extensively saw the devastation that was already happening in more and more places. In 1847, the German botanist and agricultural scientist Carl Fraas stated that it was an illusion to think that the ecological damage caused by clearing a forest could ever be repaired, not even in a purely economic sense. In a cleared area, the soil is so degraded that it can never again sustain equally rich vegetation.

In his pioneering *Man and Nature* (1864), building on the work of Fraas and others, the American polyglot George Perkins Marsh - he quoted the medieval Nibelungenlied, but also Dutch-language verses by the agricultural poet A.C.W. Staring to reinforce his natural history insights - pointed out the interconnectedness and interdependence of all life forms, what we today call the ecosystem. And what man is systematically doing, Marsh stated explicitly, is disrupt that system: 'Wherever he puts his foot, he turns nature's harmonies into dissonance'. He exterminates indigenous vegetables and animals and replaces them with exotic species that cause disruptions man can hardly oversee, let alone reverse.

In the meantime, this extermination should be taken literally. Some birds and mammals were hunted so fanatically that they were already threatened with extinction in the nineteenth century. For the letter Q in an acrostic, printed in a colonial newspaper in Surinam at the end of May 1883, it said: 'is the Quagga, related to the donkey, / Does not belong here'. Which made it more than ironic that the very last female specimen of this South African zebra species met its end on the 12th of August of the same year... in Amsterdam Artis Royal Zoo.

What mankind did, and which was clear in the nineteenth century to anyone willing to see it, was *over-exploit* nature. It was the world-famous chemist and inventor of artificial fertiliser Justus von Liebig, by the way, who launched the term 'over-exploitation' (in 1861 he published a text that would later be translated into Dutch as *The search for circular agriculture*), a term that had also caused a commotion among Dutch farmers.

Man took poor care of the animals, the forests, and the land, but - most amazing of all - also of himself. The pollution of rivers and air reached such proportions that it killed mainly city dwellers in industrial areas. At the beginning of the 20th century, the word

'smog' appeared in English newspapers, a mixture of fog and smoke that shrouded the cities in darkness, giving free rein to microbes. Respiratory diseases became a real scourge and, according to the medical correspondent of *The Observer*, there was only one solution: stop using coal.

Not all inhabitants of the world faced these modern plagues. While Asia and Africa had to supply raw materials, their colonisers generally did not allow industrialisation. In some countries, for that matter, there was also internal opposition. In 1928, Mahatma Gandhi stated with characteristic sharpness: 'God forbid that India should ever take to industrialism after the manner of the West. If an entire nation of 300 million took to similar economic exploitation, it would strip the world bare like locusts.'

So, modern life was up for revision, but how? Lobbies were needed, associations that could purchase large natural areas, international treaties to protect animals, and strict legislation to ban toxic gases. Ever since the nineteenth century, these have been the go-to remedies. Yet almost all environmental problems from that time still exist today in one form or another, and often the situation has only deteriorated.

The continuous advances of science and technology also burdened man and the planet with a series of new dangers. After the development of the atomic bombs that were dropped over Hiroshima and Nagasaki, the realisation soon dawned, also among the scientists involved, that man had now appropriated the power to destroy the entire planet. But even ordinary everyday behaviour in peacetime proved risky. Insecticides and the unceasing damage being done to habitats devastated biodiversity. Night flights to and from ever-expanding airports invaded our sleep. And it became increasingly clear that the earth is warming up to a dangerous level and that this is a result of the emission of greenhouse gases, as the Swedish physicist and chemist Svante Arrhenius already understood and calculated at the end of the nineteenth century.^{iv}

A missed opportunity

In her high-profile speech to the United Nations in September 2019 ('How dare you! You have stolen my dreams and my childhood with your empty words'), Arrhenius' distant cousin Greta Thunberg pointed out that it had been crystal clear to science for 'thirty years' that this warming is already well under way. She probably got those thirty years from the work of Nathaniel Rich. 'By 1979, we knew nearly everything we understand today about climate change,' are the opening words of his climate book *Losing Earth: A Recent History*. It is an account that ends in 1989, thirty years before Thunberg's speech, when a broad consensus had developed regarding this knowledge and, according to Rich, an international climate agreement seemed briefly within reach. So, long before she was born, the matter could have been settled, but obviously was not. How long would this inertia continue, against our better judgment? Thunberg's question is no less urgent. Rich had also wanted to convey this urgency, but he lost sight of some essential nuances along the way.

At the end of July 2018, while Europe, North America and Northeast Asia were groaning under a heat wave, *the New York Times Magazine* published an apparently high-profile article by Rich. 'Losing Earth: The Decade We Almost Stopped Climate Change' was accompanied by a trailer as if it were a new blockbuster ('a story that will change the way you think about global warming'). This thirty-thousand-word piece, together with sobering

photos by George Steinmetz, would fill the entire magazine; an expanded version was published in book form in early 2019. 'The world was ready to take action,' according to the trailer. 'We failed, however, to do what was necessary to avoid catastrophe. Rich tells a suspenseful story that reads like a historical whodunit.' These big words were effective. It was a media event that resonated globally. Barely three weeks later, Apple announced that it had bought the film rights to this eco-historical detective story.

Still, not everyone was convinced. Scientists and activists reacted to the article with disappointment, some with outrage. In keeping with time-honoured western tradition, Rich had reduced a complex issue to a story in which American heroes faced American villains but, unlike in traditional westerns, the villains won. There was no disagreement about the latter, by the way: even today we have no enforceable climate agreement and the delaying tactics, disinformation campaigns and lobbying by oil and gas companies continue unabated. In a much-discussed critique, Naomi Klein reproached Rich for making the villains too small. By blaming the failure of 1989 primarily on 'human nature', he spectacularly misjudged who the enemy was. In the neo-liberal climate at the end of the Cold War, it had become unthinkable to impose restrictions on companies; it had nothing to do with 'human nature'. More than that, she observed sharply, if it really is in our nature, then we'd better give up the fight, because our efforts to save the planet will come to nothing anyway. But she refused to believe that, as history offered plenty of examples of eras and cultures in which people did and do know how to live in harmony with the planet.

And with that, Klein touched on an essential point. By using only American scientists and politicians as protagonists, Rich obscured the cultural, economic, and geopolitical aspects of the climate issue. And if anything has become clear since the failure of the 1989 Noordwijk Environment Summit, with which Rich concludes his story, it is that global problems require global solutions that do justice to this complexity.^v

Growing awareness

Perhaps Rich was too impatient. In a reaction to *Losing Earth*, French philosopher of science Bruno Latour, who understood better than anyone, shares the sense of urgency expressed by both Thunberg and Rich, but emphasises the consequences of the all-encompassing environmental challenge: 'it is not just the American president and a few bankers who need convincing. The revolution in thinking we are talking about requires an enormous transformation of consciousness. That takes time. In the 1970s we started to see that what we were doing could not last forever, but political action does not follow automatically from this knowledge.'

Today we are in the middle of the transformation of consciousness that Latour describes. He also dates its beginning to the 1970s, but unlike Rich he does not refer specifically to 1979 - the moment when climate science had supposedly found 'the solution' - but to the realisation much earlier in the decade that the fairy tale of progress was really coming to an end. Or rather: should be. This book is about that realisation and that moment.

The very first Earth Day, on 22 April 1970, when 10 per cent of the American population campaigned against the pollution of air, soil, and water, also made headlines here in Europe, but *The things we knew in 1972* tells the story from the perspective of 1972. In that year it turned into an international struggle, taking place not only on streets and

squares, but also in conference centres, bookstores, courtrooms, university auditoriums, cinemas and even in space. Unprecedented momentum was created when, as if prearranged, diplomats and politicians, alongside scientists, journalists, intellectuals, artists, writers, directors, songwriters, cartoonists, activists, and concerned citizens, raised the alarm all over the world. From that moment on, concern for the environment was no longer a hobby project for so-called nature lovers, it became a globally recognised problem. One could also say: together they declared a state of emergency. The fact that this state of emergency has been declared a few more times since then - most recently in August 2021 by UN Secretary-General António Guterres - suggests that we have never really succeeded in organising life according to the lessons of 1972.

That inevitably also makes this book a story of omission, neglect, and oblivion. In 1972, mankind knew that the planet was in danger. The question mark at the end of the title of the widely distributed Unesco paperback of that year - *Planet in Peril?* - was mainly intended leave the reader with some optimism. The photo inside, of a Japanese woman who needs to refuel at an oxygen dispenser to cope with Tokyo's pollution, illustrated the seriousness of the situation for every reader. Foul smelling air and rivers were hard to ignore, but a flood of publications and special TV and radio broadcasts made it clear to more and more people that, in the environmental crisis, everything is interconnected, and therefore invisible pollution also presents a danger. Every citizen was able contribute to a better environment, but in 1972 the real solutions were expected from the *system*: politics and economy.

For economist Jan Pen from Groningen, it was clear what had to change: 'Specific costs of environmental degradation should be charged to the product'. A perfectly logical and necessary step, one would think, but 49 years later this necessity still had to be argued. In early April 2021, the editorial board of *NRC Handelsblad* bemoaned that, because of prevailing economic thinking, 'environment, climate, biodiversity' still have no role in 'profit and loss accounts' and are thus 'nobody's responsibility'. A few months later, a publication by the Dutch Central Bank DNB revealed why this is so. The ecological damage caused by, among other things, the manufacturing, energy, transport, and waste sectors and by agriculture is so extensive it can never be recovered. The authors of the report do not draw this conclusion, but it seems inevitable: neither companies nor politicians dare pass these costs on to the citizen, and so for decades we have been passing the bill on to the planet and its future inhabitants.^{vi}

ⁱ Coultas 1860:180.

ⁱⁱ Weather data from the Royal Netherlands Meteorological Institute, KNMI, and the online file *Bodemdroogte of De Volkskrant* on dryness of the soil; Meysman in Debrock 2021.

ⁱⁱⁱ Forrester in *Panoramiek. Eén wereld of geen wereld* [One world or no world] (nos, 26 September 1971); basic knowledge about the climate crisis from Verheggen 2020, this example on 110; future scenarios per degree of warming in Lynas 2008.

^{iv} Mutual inspiration anti-slavery and environmental movements McCormick 1989:4; Parker 2013:696 and Ghosh 2016:66-68 about the circumstances, perhaps determined by an extreme volcanic eruption (and therefore abrupt climate change), in which Frankenstein took shape; an alternative, ecomodernist version of *Frankenstein* by Bruno Latour in Shellenberger & Nordhaus 2011; Wordsworth 1870:300; Gezelle 1949:130-131 (incidentally, Gezelle also glorifies the steam train as a 'Pious servant' and so this power could also be used for good); Huzar adapted from Fressoz 2010:98 – see Bonneuil & Fressoz 2016; Fraas adapted from Schramm 1984:113; Marsh 1864:109, 35-37, quote on 36; quagga: *Suriname: koloniaal nieuws- en advertentieblad* 22 May 1883; McCormick 1989:9; www.quaggaproject.org/; 'Roofbouw' [over-exploitation] from a publication by Von Liebig 1862, quoted after Schramm 1984:117-119; Liebig's 1861 text was entitled *Es ist ja dies die Spitze meines Lebens. Naturgesetze im Landbau*; early Dutch mention of 'roofbouw' in *Landbouw-courant* 17 July 1862 and dozens of times in subsequent years (via Delpher) – for the Dutch 'Roofbouw' debate, see Wille 2019:253; stop using coal: A Medical Correspondent 1919; later industrialisation India Ghosh 2016:87-115 (quote Gandhi 111); list of remedies since nineteenth century in McCormick 1989:2-20.

^v Rich 2019:3; *Magazine* 2018; prepublication: Rich 2018; film right: Barnes 2018; Klein 2018.

^{vi} Latour in Kruk 2021:77; *Planet in peril* = Dasmann 1972; Pen 1972:160 (similar comments in, among others, Nordhaus & Tobin 1972:16 and Solow 1973:49-50); Editorial 2021; De Nederlandsche Bank: Smeets et al. 2021.