The marvel of building

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The origin myth of the modern Netherlands was most likely written down by a Scottish clergyman, one James Fraser, who made a *Grand Tour* of Europe between 1657 and 1660.[2] Once home, he wrote about the country he had encountered here. The theologian had visited the markets, caught eye of the milkmaids, and had of course marvelled at the dikes and the polder mills. What Fraser had seen, was a coastal landscape completely subjugated by technical intervention. About this he wrote the following poem:

Gods made their land, the Hollanders their shore;
That was a mighty work, but this was more.
Gods in their works, no obstacle did find;
'Gainst Hollanders, both Sea and land, combin'd;
And Nature too. In this then lay the ods,
They made their Dicks, in spight of all the Gods.

What remains some centuries later is its first line. 'We can do this', wrote Rutger Bregman, child to a preacher, in his 2020 letter to the Dutch citizens about sea level rise. 'Because God created the world, but we created the Netherlands.'

The grand story Bregman is alluding to, has lost most of its appeal. It's about a nation that, through hard work and nifty techniques, broke free from the chains of nature. The Frisian coast used to be a wet, uninhabitable swamp, so we hear, about which some decades after Christ the Roman writer Plinius complained that it lacked pastures to herd

[1] The title of this essay is taken from a chapter in *Jorwerd: The Death of the Village in Late Twentieth-Century Europe* by Geert Mak.
[2] Niemeijer 2021

cattle on and wild game to hunt. We are told it was a lost landscape, which the miserable inhabitants made inhabitable and plowable by constructing turtleback-like landforms at first, then dikes and windmills, and ultimately steam and electric pumps.

The land, initially as thin as skin on hot milk, became dry, sturdy, and could eventually uphold the heavy machinery. First dry socks, then the potato, then came abundance.

This is our origin myth in an oyster shell: while all that lives on earth must make do with Gods providence, the Dutch chose a different route. Designing all kinds of techniques they formed the earth around themselves.

What to think of these myths of exceptionalism? They are rarely recounted as is. Yet sometimes they seep into the discussions about the future of the Netherlands. I'm thinking of the words of the Delta Commissary, who said at a congress last year that no place on earth is so well-equipped to handle sea level rise as that the Netherlands.

Or, like the nineteenth century Frenchman Alphonse Esquiros wrote: 'The entire civilization of Europe would be swept away before Holland becomes victim of the waves.'

And even when there is critique, controlling the landscape is seen as utterly exceptional. Then too, it's the human that controls his environment — though it's no longer something to be proud of. Not while insects, birds and fish return each year in lesser numbers; while the waves reach higher and the land sinks further into the earth; while the Dwingelderveld and the dunes of Terschelling are plagued by windswept fertilizer.

Now we are no longer an exception to Gods creation, but to the alleged laws of Darwin. Organisms adapt to the environment, and those that don't, will perish. Isn't that

what *survival of the fittest* means? Once again, it's the Dutch that are extraordinary: we have succeeded to take an otherwise uninhabitable environment and adapt it to our needs.

Only then, it's precisely our artificial ways that need changing. So too criticism can reproduce the old idea that humanity and nature are wildly opposing forces.

Is it really that exceptional to control your environment? In *The Extended Organism* by physiologist J. Scott Turner the reader is presented with a seemingly non-mystery.[3] Why is it that earthworms live underground? Most members of its genus live underwater, and based on their physiology you can tell that earthworms shouldn't thrive in soils. Put simply, the earth is too dry for them.

That's why the earthworms will have to create an environment that's abundant in water by themselves. They do so by digging tunnels, fortifying them with calcite. Earthworms excrete a mucus that binds smaller soil particles together, and pull leaves and root fragments deeper underground. That's how they make the soil grainy and porous.

In a country obsessed with getting rid of its water, the earthworm works to keep things wet. Fields that contain earthworms can hold several hundred percent more water than without. They are referred to as *ecosystem engineers* within the biological literature, and it's no coincidence that earthworms attract attention now that weather extremes are intensifying.

So too the earthworm can be seen as an exception to Genesis. Just like the Dutch, this organism manages to make an otherwise uninhabitable environment suitable for itself,

[3] Turner 2000

not by adapting itself, but by adapting the environment to itself.

The earthworm is not alone in this. Everywhere on earth organisms adapt their environment to their needs. Termites are known to build impressive castles within which they regulate the temperature and atmosphere. Life in the rain forest works together to keep humidity levels high.

Even on a planetary scale, organisms create their own environment.[4] The totality of life on earth is keeping earth's atmosphere in a chemical composition that is suitable for itself: 78 percent nitrogen, 21 percent oxygen, 0.04 percent CO2. However, these levels are instable. When left alone, the chemicals react and result in an atmosphere that is uninhabitable to many: too much CO2, too little oxygen. The reason this doesn't happen, is because life is working to keep the atmosphere out of equilibrium.

The earth is not by miracle inhabitable for life, life makes it so. This is one of the key insights behind the Gaia-theory, the idea that the earth functions somewhat like a single cell or organism.

A quick reading of the theory of evolution, in which organism adapt to their environment, is only half of the story — and overlooks much of what is interesting about Darwins work. Organisms also shape their environment. The urge to control the landscape is not categorically exceptional. Building is not a truly human activity.

Likewise, artificial isn't synonymous to evil, natural not to good: this dichotomy makes for an ethical compass that lacks cardinal directions.

A nation that lives, builds towards its future. These words are featured on the monument of the Afsluitdijk, erected to

[4] Lenton & Dutreuil 2021

celebrate the great national effort it took to triumph over the sea. What meaning do the words carry today?

Nowadays it's possible to gauge the impact of the Dutch 'terraforming' of the previous centuries. Peat extraction, land consolidation, the Delta Works and the enclosures of the Zuiderzee and the Lauwerszee: they brought abundance, but they are also among the greatest ecological disasters this part of the earth has been through.

My interest is often caught by the materials with which they were build. Most earthly engineers use resources that are decomposable within short time. Beavers build with wood, worms with calcite, termites use spit and faeces. *Bio-based materials*, they are called nowadays, and by using them these organisms hold only a soft grasp on the environment.

But in making the human infrastructure, it's as if the engineers confused the future and eternity. Canal walls, dams and sluices are made of stone, steel and concrete — materials that erode slowly and are hard to appropriate by other forms of life. Because of this, there are approximately 150.000 obstacles in European waterways that do not serve a purpose anymore. They are often obsolete dams that are difficult to clean up by non-human demolition firms: the elements, the algae, the fungi or the snails.

The difference in material use, for me, points to something bigger: to what degree do technical interventions allow other earthly beings to construct the earth along with us? The unbudging Dutch landscape is also a materialized form of paternalism, in that it excludes the many engineers of this world.

Fraser was of course wrong. The coast wasn't just built by the Dutch, but also by the sea threading upon the land and leaving its sediment. The outer row of dunes wasn't built by Staatsbosbeheer, but also by the sand coach grass, a

pioneer plant that roots itself in virgin tidal flats and is the first to create new land. The rich soil is in part thanks to the earthworms.

After a long era in which non-human landscape engineers kept to the background, they are starting to re-emerge. The sea level is rising, weather extremes are intensifying, and salt water is crawling under the dikes into the polders.

To keep the earth inhabitable, we do not need to eradicate all forms of artificiality. It's more a question of what it means that artificiality isn't just a human and technical affair. How to respond to the fact that the habitability of this earth is a 'joint venture'?[5]

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[5] Lenton & Dutreuil 2021