

BROKEN FORESTS

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Introduction

Keywords: solastalgia, sacrifice zone, sbs aka baseline syndrome, place, wildfires, trauma, trees, Anthropocene.

The landscape around me has been heavily shaped by human activity. There are eucalyptus plantations as far as the eye can see. The closest river is blocked by a dam that produces electricity and underwater lay old overflowed villages.

The utilitarian mindset that claims that actions are right if they increase the happiness of the majority of people has shaped the forests and the waters, mountains and seas and even the invisible air. The geological epoch called Anthropocene, where nothing seems to escape the human touch of death and extinction is more than present here in the heart of Portugal. The Anthropocene is understood as a geological age where human activity is shaping the environment.

With my work I will take a closer look at my surroundings and how the hills and mountains have changed over time. The presence of industrialised forests of eucalyptus points to broken relationships on the earth and I would like to draw attention to it on a local scale. Since I can't make changes on the scale that I would like, I intend to describe the landscapes and create a physical descriptive work in metal.

The cork oak aka *Quercus suber* which is one of the local inhabitants of these lands will be my ally along the way. With its fireproof bark which has been used by humans for thousands of years, it stands magnificently against the odds and challenges of changing times. I am going to use cork oak bark as a medium for physical works that accompany this written thesis.

The work consists of two parts, the first part talks about my surroundings before the fire, it describes the introduced eucalyptus trees and native cork oak trees and draws out the differences between the two species. The second part talks about the fire, about the fear of the future and of losing the feeling of safety. The practical works are

introduced under the fire section. They were created focusing on the fire and using the fire, they express the protection and vulnerability.

The practical work is of various metals which were cast into the bark of cork oak and the insides of burnt and exploded olive trees. They are presented as fragments of a broken forest, for a broken forest is nothing more than fragments of once whole ecosystems. In my work I aim to create as much as is necessary and as little as possible. The methods used are basic for silversmiths and goldsmiths. The form of the cast will be of my surroundings. The materials used are from thrift stores and leftovers from my own studio. In the end all metals came from the insides of the earth. This work aims to find words and form for an Anthropocene trauma and trauma of living on post apocalyptic landscapes.

My hypothesis in this work and in my own life is that if humans would do less, organize less, need less and be less then life around them would organize and sort things out for itself. If the native trees were allowed to grow as they wish, unhindered by human development then the forests would return. The aim of this work is to introduce my surroundings and to understand my local environment at a deeper level. I am answering Bruno Latour's call to tell the earth stories.¹ This is an earth story of the Pedrógão Grande area.

¹ B. Latour, Agency at the time of the Anthropocene. — *New Literary History* 2014, vol 46, pp. 1–18.

I BEFORE THE FIRE



I live in the country that I am not from and I live in the countryside. Most of my companions here in the heart of Portugal are nonhuman. The amount of time I spend around plants and other creatures is longer than the time I spend with fellow human beings. The land has become a close friend and a companion.

It has turned me into a gardener more than into a jewellery artist. Both activities are similar in a way — both include hands and both transform something almost nonexistent into something touchable. Planting a seed in the ground and making an idea come to life are similar. The way that those two are alive varies. Plants offer pleasure to more senses than jewellery, although some jewellery artists have managed to bring the senses of taste and smell into the field — nothing compares to the liveliness of the green for me. Sitting somewhere in the garden and observing the bees and plants and birds has become my ultimate choice of leisure. The land is slowing me down and making me feel ancient, almost one thousand years old.

For the past six years my life has been tightly connected with an almost abandoned village in the Centre of Portugal, close to Pedrógão Grande. A visit to a friend became a meeting with my new home. I have always wanted to live within olive groves, orange trees, fig trees and almond trees. Now I am. The rural land here is made to offer food for the people and one could solely live on the products of the land if there is a will to work hard. The surplus of fruit is mind boggling. My immediate surroundings are something of a paradise garden — bountiful and serene. Close by though lurks a danger, as I found out later.

The village is located within the eucalyptus plantations that have replaced the native species. Life stands still there, the local habitats keep out, hardly any birdsong can be heard. There seems to be nothing for any one in it except for some profiting humans. I found out on my own skin that eucalyptus is notorious for burning. In the exceptionally hot summer of 2017 I watched it burn and everything along with it. My freshly planted young fruit trees included. 30.000 hectares of land together with my garden, turned black within a few weeks.² It was the first time when forces other than humans became a threat to my existence, or so I thought.

² Mia Alberti, Portugal's wildfire that broke the community, 2018. – BBC, <https://www.bbc.com/news/world-europe-44438505> (accessed 20 January 2022).

Tree Time

I walk around with curious eyes and senses wide open to familiarise myself with my new place in the world. I walk through the valleys, in the village and on the eucalyptus covered hills. I witness traces of the past. David Farrier's book on living on a damaged planet calls these traces the 'ghosts of the Anthropocene'.³ To me they do not appear as ghosts. These traces appear mostly as tiny shoots of European oaks and *Quercus suber* and they are everywhere — in abandoned olive groves, in the terraces and even in the plantations. I salute them and wish them all the luck needed to survive. I am amazed that they have. These shoots have turned the bottom field of our garden into a young forest with mushroom networks.



Young oaks of our bottom field have grown in sizeable trees in 6 years. The fire in 2017 only left their roots untouched.

Now the bottom field, once an agricultural land, is ruled by the slow and long tree time. Peter Wohlleben writes that young trees are taught by the old mother trees to

³ D. Farrier, *Anthropocene poetics, deep time, sacrifice zones, extinction*. Minneapolis, London: University of Minnesota press, 2019, p. 4.

grow slowly in order to live long and healthy.⁴ There are not many older trees around to teach our young ones. Hopefully these now young trees will in a hundred years time have their offspring to slow down. Tree time is like an endless river with slow flow, deep curves and underground channels. Its journey can only be recorded by hundreds of generations of humans. One mortal can only witness a glimpse of it.

Trees have been on this planet longer than humans and their survival skills exceed that of the humans. Yet trees are treated as subordinates and made to serve humans. Trees could live a slow and long life if uninterrupted. Compared to trees, I live extremely fast. Yet the speed and intensity of my life is provided by trees — liquid trees and plants from deep time.⁵ Deep time consists of the time that fossil fuels have lied inside the earth. It also consists of the time that it took for the plants to turn into black liquid and of the time it took for the plants to grow. Thanks to the liquid trees and plants I can travel to places unknown to my foremothers. Unlike a tree I can move and choose my home among my favourite trees. All thanks to human extraction from the deep time. According to Farrier, deep time deals with human's geological status.

One of the most striking and unsettling aspects of the Anthropocene is the newly poignant sense that our present is in fact accompanied by deep pasts and deep futures. Fundamentally, the Anthropocene describes how humanity has radically intruded in deep time, the vast time scales that shape the Earth system and all the life-forms that it supports. Deep time has become both an astonishing and disorienting—and a familiar—element in the everyday. Our dependence on fossil fuels, rare earth minerals, and plastics puts us in intimate contact with far-distant pasts; the prehuman Earth shapes the present not just in terms of geological strata and evolutionary biodiversity but in terms of the textures, devices, and processes that articulate our experience of modernity.⁶

⁴ Peter Wohlleben, *The hidden life of trees, What they feel, how they communicate, discoveries from the Secret World*. Vancouver, Berkley: Greystone books, 2015, pp. 10–20.

⁵ D. Farrier, *Anthropocene poetics, deep time, sacrifice zones, extinction*. Minneapolis, London: University of Minnesota press, 2019, pp. 4–7.

⁶ D. Farrier. *Anthropocene Poetics, deep time, sacrifice zones and extinction*. Minneapolis, London: University of Minnesota Press, 2019, p. 6.

Trees in the forests are sharing information and energy through the woodwide network. In order for the network to exist there must be old and young and dead trees in the forest.⁷ Trees from all walks of life and afterlife are needed to create a forest. The forests of today would become liquid fuels one day far away if allowed. ‘Run forest, run!’ If only it could, and if it could, where would it go?

The plantation trees can’t create a woodwide network. For they are all the same age – planted and cut down at the same time when still middle aged. The human intrusion into tree time has left Europe bare of forests. The organising hand creates more damage than order in the web of life. The simplification does not work in the complicated system which is not thoroughly understood and can not be understood within the utilitarian paradigm. Tree species are disappearing before any knowledge about them is gathered. Among the vast multitude of species only the ones that are useful to people are surviving.

***Quercus suber* AKA Cork Oak**

Cork oak aka *Quercus suber* belongs to the family of oaks. Unlike eucalyptus, it has been grown in Portugal for thousands of years. Each time I see a new shoot I witness the unremembered time returning. These young oak shoots prove that the land used to belong to their giant ancestors, covering the hills and mountains all the way to Alentejo, where the giants are still standing. In Alentejo most of the cork oak forests are *montados* and can be up to 7000 years old. *Montado* is a monoculture forest of wide apart standing cork oaks, usually surrounded by a fence. Cows and cheep live in the *montados* but also fields of grain can be seen. These oaks were planted by humans and also offer a rich habitat for the wildlife, Iberian lynx included. Today

⁷ Peter Wohlleben, The hidden life of trees, What they feel, how they communicate, discoveries from the Secret World. Vancouver, Berkley: Greystone books, 2015, pp. 10–20.

22% of Portugal's territory is covered with different types of cork oak forests, some mixed oak forests and others *montados*.⁸



Montado in Alentejo. Close to Almendres Cromlech which dates back to 2000 years B.C. It is said to be one of the oldest man made ecosystems in the world.⁹

About half of the world's cork that is used for corking wine and insulating homes comes from Portugal.¹⁰ Many cork trees have numbers on them which signify the year that the cork was stripped. A new harvest can be made every 9 years.¹¹ Trees are vulnerable to the fires right after the bark is stripped, after all cork is the trees'

⁸ J.S Silva and F. Catry, Forest fires in cork oak (*Quercus suber* L) stands in Portugal. – International journal of environmental studies 2006, no 3, pp. 235–257.
https://www.isa.ulisboa.pt/ceabn/uploads/docs/publicacoes/Silva_e_Catry_2006.pdf (accessed 24 March 2022).

⁹ The BBC's video about cromlech and of the surrounding *montados*, 2021. —
<https://www.bbc.com/reel/video/p0bbrfm1/the-mysteries-of-portugal-s-7-000-year-old-stonehenge-> (accessed 16 May 2022)

¹⁰ Portuguese association of cork oaks. — <https://www.apcor.pt/en/montado/cork-oak/> (accessed 18 May 2022)

¹¹ Portuguese association of cork oaks. — <https://www.apcor.pt/en/montado/cork-oak/> (accessed 18 May 2022)

protection from unfavourable external influences. This year is certainly a bad year to harvest cork. Not enough rains have fallen, hot and fiery summer is to be expected. It seems that cork oaks have grown together with fires. Cork bark has fire resistant properties and I am able to cast metal inside it. Cork survives high temperatures.



Giant *Quercus suber* tree aka cork oak is stripped of bark in 2009, it is signified with the number 9.

Quercus suber is strongly related to the national identity and is the national tree of Portugal. Registered cork oak trees may not be cut down. I am in love with these trees and can see why humans have favoured them for thousands of years. There is something primeval about the cork oaks. Its bark is wavy and soft looking, as if deep lines on grandmother's face. Being near one offers assurance. Stripped cork trees have red colour which turns darker with each year until it's almost black. I will use cork bark in my work as it resembles the country and land I am familiarising myself with. It also resembles the hope that I have for the hills and mountains around me. More than anything I would like to see mountains covered by these stunning trees.



Freshly stripped cork oak trees in the light of September evening sun, 2018.

Quercus suber is one of the oldest trees on our land. It is one that our life revolves around. It was more than a relief to see it surviving the fire and the new green leaves appearing. Its bark did a good job of protecting it and the dark marks on the tree tell me that it has done so before.



Magnificent cork oak tree in our land offerig shade and psychedelic play of shadows and light.

Plantations and Eucalyptus

The word plantation first appeared in English in the 15th century. Originally, the word meant to plant. However, what came to be known as plantations became the center of large-scale enslaved labor operations in the Western Hemisphere.¹²

Jason W. Moore, who studies environmental history, has written about sugarcane plantations in Madeira. Those were some of the first plantations in Portugal and were already present in the 1470s. Massive parts of native laurel forests were replaced with sugarcane plantations by use of cheap slave labour.¹³ The eucalyptus today is not grown by slaves but can enslave people living close by into monoculture landscapes and hellish fires.



Eucalyptus plantation floor covered with stripes of its paper-like bark waiting to burn.

¹² The plantation system, Resource library, National Geographic Society 2019. – <https://www.nationalgeographic.org/article/plantation-system/> (accessed 27 January 2022).

¹³ Jason W. Moore, The Capitalocene, Part I: on the nature and origins of our ecological crisis, The Journal of Peasant Studies. 2017, vol 44, p. 22.

The eucalyptus plantations took off in Portugal around the middle of the 20th century.¹⁴ Though the area of my home is called Pinheiro interior meaning the interior pine forest, it is mostly covered by the eucalyptus. Both the pine and eucalyptus are highly flammable. Especially the eucalyptus which originates in Australia and relies on fire to spread its seeds and ensure its success. The eucalyptus sheds its bark constantly and it lays on the ground waiting for the fire. It contains chemicals which repel the fungi that would break it down.

*Eucalypt seed release is triggered by fire, when tough, woody capsules empty their contents onto a nutrient-rich ash seedbed from which all the understorey competition for light, water and nutrients has been removed. Browsing animals are driven out for a time, and the heat-treatment of soil reduces the numbers of plant-eating insects and soil organisms during the short but crucial early growth period.*¹⁵

The trees have intelligent survival mechanisms. The eucalyptus trees around me live as an Industrial synthetic cloned hybrid forest. Their survival mechanisms are further enhanced by the genetic tree scientists who clone and synthesise in the name of profit. Trees are given industrial superpowers to fight off the hostile world around them and grow no matter what.¹⁶ The paper written by mad profit oriented scientists made the hair on my skin rise, spooky wordings, cold blooded.

¹⁴ Paul Ames, Portugal's 'killer forest', Politico, 2017.–
<https://www.politico.eu/article/portugal-fire-eucalyptus-killer-forest/> (accessed 18 May 2022)

¹⁵ Eucalypts and fire, the stories behind our trees, Forest education foundation, national forest learning centre, Tasmania.
http://www.forest-education.com/wp-content/uploads/2017/07/eucalypt_adaptations.pdf#:~:text=Wet%20eucalypt%20understorey%20species%20such%20as%20musk%C%20dogwood,seeds%20or%20soil-stored%20seed%20which%20can%20survive%20fires (accessed 3 February 2022).

¹⁶ C. A. Labate, T. F. de Assis, S. Oda, E. J. de Mell, Part 9 Transgenic Forest tree species, Eucalyptus, Compendium of transgenic crop plants, 2009. –
https://www.researchgate.net/publication/230218530_Eucalyptus (accessed 27 December 2021).



A dangerous fire hazard zone with speedy growers — cloned hybrid trees. A mismanaged eucalyptus plantations too close to my home. Especially scary on windy and hot days.

If you listen closely you could almost hear eucalyptus trees growing since they grow so fast. A new plantation close to my home which was planted in the beginning of last summer has trees higher than me. Crop, harvest, profit, competition are common terms in the industry. For me they are equal to greed, simplification, death and fire. I see these plantations every single day, and am constantly reminded of the tragedy and capitalist blind strategy.



One year old new eucalyptus plantation, planted in the summer of 2021, right next to N2 – the Portuguese equivalent to highway 66. The planted trees were the size of a hand, now they are about two metres high.

Max Liboiron – an activist, scholar and leader of anti-colonial research methods sees the flattening of land relations into resource relations resulting in pollution.¹⁷ Jason Moore calls this shift in attitude towards land as a resource the ‘cheapening of nature’¹⁸. Moore points on capitalism which in the first place convinced people of the separation of culture and nature. That separation has allowed capitalism to make nature cheap, treat it as a resource, and at the same time make human life cheap. The production of the land and labour have similar connotations, one leans on the other.

¹⁷ M. Liboiron, *Pollution is colonialism*. Durham, London: Duke University Press, 2021, p. 63.

¹⁸ J. W. Moore, *The Capitalocene, Part I: on the nature and origins of our ecological crisis*. —*The Journal of Peasant Studies*, 2017, p. 17.

Between 1450 and 1750, a new era of human relations in the web of life begins: the Age of Capital. Its epicenters were the seats of imperial power and financial might. Its tentacles wrapped around ecosystems – humans included! ...The shift from land to labor productivity as the decisive metric of wealth implied a novel approach to human activity in the web of life. For the first time, the forces of nature were deployed to advance the productivity of human work – but only some human work.¹⁹

The land here has become part of a production line. Some locals say that the eucalyptus plantations would never go because they provide wealth and jobs for some people. Without these jobs this central part of the country would be even more desolate. At the same time if the jobs connected to eucalyptus plantations and the plantations themselves would be eliminated then the land would burn less. The local villagers would be less traumatised and the land could provide beautiful wildlife getaways for city dwellers. The usefulness of land could be measured by the richness of life.

Shifting Baseline Syndrome

The way of life has gone through a dramatic change in Portugal. It was common for people to live off land and to produce their own goods. I sense grief for a lost way of life. It looks back at me in abandoned households falling apart, overgrown olive trees, orange trees taken over by brambles and unused wells. My beloved neighbour Maria who is 80 years old tells me how she misses the liveliness of the village. When there were children and people around, and neighbours and friends gathered in the evenings to chat and drink coffee or homemade wine. A way of life is rapidly dissolving and with it the danger of fires multiplying.

¹⁹ J. W. Moore, *The Capitalocene, Part I: on the nature and origins of our ecological crisis.* —The Journal of Peasant Studies, 2017, p. 17.



My neighbour Maria by the side of her home. Photo by Tamsin Ross Van Lessen.

The hard work on land is not longed for nor are the landscapes before the plantations missed. Shifting Baseline Syndrome, SBS, is a term coined by a fishery scientist Daniel Pauly in 1995. It explains that people can't miss something that they haven't witnessed. The nature we grow up with is what we regard as nature, what we regard as normal. It is hard to notice slow and gradual change, especially when the change has started before one was born.

Fishery scientists have regarded the amount of fish present when they start their career as a baseline since they had no data on what was before their career.²⁰ The baseline here for the older generation is the pine plantations. The pines were eventually replaced by the eucalyptus trees. I grew up in Estonia surrounded by the 'real' forests where trees were not planted and made their own ecosystems. For me a 'real' forest is a norm and all the other kinds of forests are signs of degradation. Still the forest that I consider 'real' and healthy might look degraded to my great great grandmother. I realised that, when I drove past an old spruce forest in east Estonia –

²⁰ Daniel Pauly. Anecdotes and the shifting baseline syndrome of fisheries. – Trends in Ecology and Evolution 1995, vol 10, no 10, p. 430.

I was gobsmacked, I didn't remember seeing such huge trees before. I probably had seen old forests as a child but can't remember, since now I am used to the young forests and felling grounds that dominate Estonia today.

The forest as a plantation is a normality for people who have grown up surrounded by them. The plantation is the forest – a forest that has to produce. Land is a producer and that is a norm rather than an anomaly. There is no one in the area of Pedrógão Grande alive to remember otherwise, no one of the humans alive with age above 200 or 400 years. No one to remember if the hills were covered with oak forests or chestnut trees. Yet the hills themselves remember and so do some of the older trees that survived by being useful to people. Certainly the colonial history of Portugal has shaped the relationship between land and humans. The main claim for the colonialists for taking the land from natives was that they would make proper use of the land.

Traces of a Lost Life

Sometimes I find terracotta pots on the scorched ground under eucalyptus trees. These are left here from resin harvesting, a sign of former pine plantations. In the valleys I find terraces with massive stone walls, olive trees, fruit and nut trees growing with different oaks and grapevines. In the autumn there is a great amount of food ripening, a feast for the birds. Once it used to be someone's field for harvesting food. Now most of the people still left are old. Many houses in my village are abandoned. Neglected terraces are not used the way they once were. The signs of the past are everywhere.

If no one takes care of the lands, the fire buffer zones are being lost and the lives of the rural people are even more at risk. The guardians of the land are passing away. Their children and grandchildren have moved to the cities. Capitalist cowboys are riding the lands as if they own it, counting the gain in numbers. If no one is witnessing, is it really happening? Were there ever unorganised forests?



Pine resin harvesting pots found in the eucalyptus plantation. Traces of the past.

II AFTER THE FIRE



Burnt eucalyptus plantation in the aftermath of fire, 2017. Photo by Tamsin Ross Van Lessen.

If all that changes slowly may be explained by life, all that changes quickly is explained by fire. Fire is the ultra-living element. It is intimate and it is universal. It lives in our heart. It lives in the sky. It rises from the depths of the substance and offers itself with the warmth of love. Or it can go back down into the substance and hide there, latent and pent-up, like hate and vengeance. Among all phenomena, it is really the only one to which there can be so definitely attributed the opposing values of good and evil. It shines in Paradise. It burns in Hell. It is gentleness and torture. It is cookery and it is apocalypse. It is a pleasure for the good child sitting prudently by the hearth; yet it punishes any disobedience when the child wishes to play too close to its flames. It is well-being and it is respect. It is a tutelary and a terrible divinity, both good and bad. It can contradict itself; thus it is one of the principles of universal explanation.²¹

Gaston Bachelard, the french philosopher of the 20th century wrote in *The Psychoanalysis of fire* that quick changes can be explained by fire.²² He explored the double faced and complicated fire thoroughly. Fire changed my life rapidly, within two weeks my perspective of life changed. I went through a baptism of fire. It was like a welcoming ritual that I had to go through in order to stay and to truly get to know the place beyond its surface. I was kicked out of paradise and had to face what the land around me had become — a burning caldron, hell fire.

The memory of the wildfire comes to me as fragments, it is distant yet it brings fear even today. Firefighters' sirens, hot winds, heatwave, airplanes, helicopters, smoke pillars, ashes. The signs of what happened are still present. The fire left behind shadeless weeks, a mix of high levels of adrenaline and grief. There was only one place – a river beach close by, where any green was left. The trees at just at the edge of the water hadn't burnt and the grass beneath them was watered and green. Even a brief time under these trees resembled some sort of familiarity of what once was, and what will eventually be again.

²¹ G. Bachelard, *The psychoanalysis of fire*. London: Lowe and Brydone, 1964, p. 7.

²² G. Bachelard, *The psychoanalysis of fire*. London: Lowe and Brydone, 1964, p. 7.

Since then the landscape covered by the eucalyptus keeps being upsetting to me. It makes me scared of the coming summer and the ones after that. The worst is that the land is managed the same way as it was before the fire, it drives me mad. New eucalyptus trees are being planted very close to villages. The emotional involvement with the lands is overwhelmingly strong. Is my relationship with the land intensified because of its dangerous nature? Is it just human to remember and focus on negative things in order to survive? Older people say that in the end you tend to remember the good things.

I am still not old enough I suppose. The Pedrógão Grande fire of 2017 that could have taken my life as it took more than 60 others was human made.²³ The numbers of deaths vary in different reports. It started with a fallen electrical post and travelled far and wide through the fire inviting eucalyptus trees. It was caused by the rising temperatures which are caused by human activity and longer drought seasons, fuelled by easily ignitable plantations. The fire was human made as much as the landscapes around me are human made. By the logical conclusion I can say that my life was threatened by humans. What I see here is just a tiny image of what goes on on the whole planet. Raw violence on land is hidden from the beautiful capitalist dream run by an illusion of endless progress. It is hard to imagine that people have died so that toilet paper or wood pallets could be made.

²³ Pedrógão Grande fire report – key findings. Safe communities Portugal. – <https://www.safecommunitiesportugal.com/pedrógão-grande-fire-report-key-findings/> (accessed April 18 2022).



Fire sky in the night. Village of Ervideira. 2017. Photo by Tamsin Ross Van Lessen.

Fire needs heat, oxygen and fuel to burn. When all the fuel and oxygen is consumed, the fire will start to move towards its end. Many who die in the fires die from lack of oxygen rather than from burning. Once the fire is at its highest point, it can consume almost anything. It takes around 200 kg of wood to burn a small sized human body – I was told in the Varanasi ghats, where the dead were sent off with the ritual of the fire. Fire turns wood and men equally to dust. Only the temperatures for it to happen vary. The more fuel fire consumes, the hotter it gets. After its tipping point, fire starts to cool down. Cooling comes from a lack of fuel or from a lack of oxygen. The temperatures of fire can be controlled, therefore humans have made good use of fire.

Working with metal would be impossible without fire. In the process of casting I need to heat metal to its melting point. The temperatures of each metal vary dramatically. For example silver melts at the temperature of 961.8 degrees Celsius while tin melts at 231.9 degrees Celsius. The amount of metal that needs to be melted changes the melting point as well. The flame for melting silver has to be blue and

loud. Everyone who works with metal is familiar with that sound, the first time it's frightening but after a while everyone seems to get used to it. It cuts many conversations from half way through. Silver goes through different stages as it melts. The tipping point can be seen when the colour changes and the metal turns to liquid. Silver turns pinkish red and then into the shiniest liquid in the world. Another miraculous material from the deep earth.



Freshly poured silver on the surface of the burnt wood, looking red.

Mythical Fire and Prometheus

*Wherever there were people, there was fire; whatever change people wrought in the world, they did with fire. Anyone could see that fire was fundamental to the world and essential to any process of change. Was it not fire that transformed woodland into garden, clay into pottery, ore into swords?*²⁴

Fire holds an important place in many myths that concern humans at the beginning of civilization. Fire has given humans the power to survive and thrive in the world. Prometheus steals the fire from Zeus and gives it to humans. His brother Epitheus in the creation of creatures had given all the gifts to all the others and left humans with none. Humans were men, the women were not created yet. Woman in this myth is introduced to humans by Zeus, as a revenge for getting his fire. Woman appears as a curious Pandora with a box that was not allowed to be opened.

*Zeus, whose identity is often blurred with the Judeo-Christian god, comes to represent stagnation: he is tied directly with an unchanging world which allows for no progress, no change. Prometheus, however, is the ultimate symbol of evolution regardless of the cost. It is this grand pursuit of uninhibited progress that reveals the darker side of Promethean Foresight and development.*²⁵

The myth of Prometheus is more than 2000 years old and has made various comebacks. It was popular in the Romantic movement and Prometheus also appeared as Frankenstein in Mary Shelley's novel which took a critical position towards industrialisation. When Prometheus stole the fire he was outsmarting the gods, he did something that was not allowed. Angry Zeus took a revenge and tied

²⁴ S. J. Pyne, Fire in the mind: changing understandings of fire in Western civilization. — Philosophical Transactions: Biological Sciences, 2016, Vol. 371, No. 1696, Royal society, p. 4.

²⁵ J. Looney, Prometheus in Popular Culture. https://www.academia.edu/1255961/Prometheus_in_Popular_Culture (accessed 20 March 2022).

Prometheus to a rock where each day an eagle would come and eat away his liver which grew back during the night. This punishment was to last for the whole eternity.

The results from Prometheus' stolen gift are still lurking around. Wildfires with increasing intensity approach villages and towns, plantations and forests. As the civilization further expands into the natural environment by deleting it, the element of fire is distorted into something apocalyptic. In its magnitude fire has become uncontrollable and unmanageable. Latest fires in California have turned into tornado fires. The fire as we know it, has changed into something unpredictable and hazardous. The gift of Prometheus might kill a huge part of living creatures and has done so already. Like old tombs where the wealthiest were buried with their slaves and possessions – humanity's grave will be filled with riches and wonders of this world.

Sacrifice Zone

In many religions, a 'sacrifice' is or was the act of offering a gift to a deity in homage or conciliation, most commonly as the ritual slaughter of an animal or person. Eloquently, 'sacrifice zone' is how a certain type of segregated and stigmatized space has become internationally known. In such a space, the physical and mental health and the quality of life of human beings are compromised in the name of 'economic development' or 'progress' – but ultimately for the sake of capitalist interests.²⁶

My home is in the sacrifice zone. The native forests have been replaced by industrial plantations in order to make profit. The lives of the people in sacrifice zones are forfeited for high quality life usually lived somewhere else. The eucalyptus plantations aren't as bad as mines which for example contaminate the drinking water but can be extremely dangerous, especially under new extreme weather conditions.

²⁶ M. L de Sousa, 'Sacrifice zone': The environment–territory–place of disposable lives. — Community Development Journal, Volume 56, 2021, pp. 220–243.



Eucalyptus plantation after the fire. Photo by Tamsin Ross Van Lessen.

I live in the highest fire risk region in the country. It is also the place with most eucalyptus plantations grown for paper. In June 2017 the land became a ravaging inferno where fire destroyed 53.000 hectares of land in two weeks, according to BBC 66 people died.²⁷ It was the deadliest fire that Portugal has ever seen. It destroyed 485 houses, many of them forever homes for elderly.

The toll of the Pedrógão Grande fire shows the painfully high price of living in the sacrifice zone. The cost of cheap paper and wood is paid with lives, damaged land, money and homes. The sacrifice for industrialised forests is high and runs in currencies beyond bank notes. Portugal's fire prevention and management is lacking in many ways, which needs a paper on itself.

The fire started close to our home. It reached us by the night and the next morning our garden was burnt and black. We escaped and were lucky. For two weeks the smoke pillars kept rising from different places. The pink sun and yellow sky became

²⁷ Mia Alberti, Portugal's wildfire that broke the community, 2018. – BBC, <https://www.bbc.com/news/world-europe-44438505> (accessed 20 January 2022).

the signatures of the destruction. There was almost no green left. The town was full of politicians and media people. The sky was busy with firefighter airplanes and helicopters. For once this far away place was getting attention but not the attention it needed.

Everything was black for months. The chainsaws kept cutting the black trees down, roaring in the black lands. The ashes stained my body and clothes. A sort of eeriness was mixed with beauty in the burnt landscape. Though the destruction was vast and all enveloping, I developed a respect for it. Fire was present in this South European country each summer but I would have never expected to experience it almost on my skin. What a different place compared to where I came from. Summers without rainfall, dryness to the bone. The ground turned into dust together with the plants. The fire summer was hellishly hot. There was nowhere on our land to hide except under the shade of our giant cork oak tree. It had put up with the fire quite well. We watched it burn in the night and shouted in pain but it made it. The air was smokey every moment of the day. After that summer I started the process of stopping my long kept habit of smoking.

I saw melted aluminium in the shape of a river, fresh green shoots on pitch black trees. The heated days continued and sadness was everywhere. A woman sitting next to me in the bus started to cry as we entered the area of our burnt landscapes. A stupid pop music song played in the loudspeakers — ‘are you just going to stand there and watch me burn...’ Someone was selling the ashes in the market, someone else found a bunch of dead snakes in her attic under the burnt roof. Also there was a melted iron cast bath and things I don’t know about. The summer of hell echoed all around.

Solastalgia

With the fire I had lost solace and the protective feeling that home usually offers. Other people had actually lost their homes. Solastalgia is a term created by Glenn A. Albrecht who was an environmental philosopher in Australia. The term stands for losing solace or comfort of a home when uncontrollable forces are changing the home into a hostile and unfamiliar place. It is longing for home while being at home.

That which should be a source of comfort flips into something threatening, making the occupant feel uneasy and anxious. Something familiar and well established in the mind becomes “uncanny” after a process of repression turns it into an alienated mental construct. The familiar comes under threat from elements within the unconscious, undermining its previous safe conscious state.²⁸

My home is in a dangerous place. It looks to me as if nothing was learnt from the fires. The eucalyptus is back and new plantations keep appearing up to today. It makes me increasingly anxious about the future scenarios of my life and of life on earth. The beings and ways of being are and have been destroyed and it is happening under my eyes. The violence inflicted on the planet by humans appears organised and planned but is not named for what it really is. Instead it is called progress, success, utilitarianism, profit, production, excavation, plantation, crop, harvest, industry and extinction. Rob Nixon who is a professor of humanities and environment in Princeton calls the destruction that takes place beyond the human world slow violence. He has written a book called *Slow violence and the environmentalism of the poor* which focuses on faraway places where the riches of life are made or mined and where locals are being victimised by the uncaring habits of the gainers and producers.

²⁸ G .A. Albrecht, *Earth emotions, New words for a new world*. Ithaca and London: Cornell University Press, 2019, p. 36.

*By slow violence I mean a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all.*²⁹

Suddenly I find myself living in a far away place which is hidden and abused. The image of the burnt landscape stays with me. I try to give it forward with my work in metal which seems involuntarily broken and fragmented. I am not the person I was before fire, I have inhabited fears that were distant and unfamiliar to me. I have also learnt new survival skills and preparedness for the next disaster. In my mind I will already try to let go of all that I have planted and all that I have built. Yet I know if the day should come and I was to lose it all to a fire, I would be pained and broken unpreparedly. If my will would matter — it would never happen again. Yet the plantation owners and paper factories seem to have a will of their own.



²⁹ R. Nixon, *Slow Violence and the environmentalism of the poor*. Cambridge, Massachusetts, and London: Harvard University Press, 2011, p. 3.



Broken forests, planted and burnt. Photos by Tamsin Ross Van Lessen.

My helplessness is put forward in the process of my work. I choose to cast metal because of its unpredictability and because it is in many ways uncontrollable. The temperatures of the fire were so high that even iron melted. I want to see the metal flow. The casting is controlled only in the detailed preparation beforehand. I have no preparation and am like the lands around me. They were and are not prepared to face a fire. My cast forms are as experimental as they can be. Made simply of found cork rather than from casting plaster. Usually plain and some of them carved.



Casted tin looking similar to the landscape after the fire. Photo by Yufang Hu.

As I cast the tin into the cork some of the air holes fill with metal. They remind me of trees that were burnt and then broken by the winds, looking like huge cracked toothpicks. The burnt landscape changes in time. First there are standing black trees, surrounded by ash. The roaring chainsaws bring them down and open panoramic views to the mountains. Only some trees are left standing — made into memorials by fire, winds and woodworms. The broken trees define the land around me. The cracking sound of a falling tree jolts me ever so often, even as I am writing this.



Burnt and broken pine trees are left standing after fires and storms. Autumn 2021.

Finding Form for an Experience

To put post apocalyptic experience into material is challenging. How do I express trauma that cannot even be expressed by words? Trauma is inaccessible, inexpressible with words, and distant until it is not trauma anymore. Can trauma be expressed in material? If so, could it reach its essence in a way that words can not? Am I expressing it while writing this?

The practical part of this work is to give forward the feeling of being broken by the outside forces. The process of finding the form to describe the slow violence that inhibited the fire is as if walking through a fire. Many ideas burn to the ground and the ones that I manage to hold onto, I hold on tightly. The wildfire initiated me into another way of being. It made me more resilient while showing my vulnerability. I was becoming more similar to a cork tree that is prepared to face harsh outer circumstances. It faces it by growing a thick layer of soft insulation around it. That is what the cork oak is mostly valued for by the people — by its outer layer, though the tree grows it for protecting its inner trunk. Cork bark was the form that I stuck to — it didn't burn down with the fires because of its nature not to burn.

I decided to start working on the form on the first of December. I knew that trees need to be present in my work. Wood and trees. Their double way of being is miraculous. They inhabit the ultimate liveliness. Dead trees give life by breaking down and becoming soil for the living trees. Trees are considered alive even when they are dead. Any carpenter would tell you that wood breathes and you need to feed it or treat it one way or another. Trees give life to me and to their own kind even when dead. I live in a wooden house, it cracks and moves and breathes. It is a lively house.

Trees were the biggest victims of the wildfires. The only ones surviving the fire well were the cork oak trees whose bark was not stripped at all or not stripped recently. The cork oaks look broken with their stripped barks, the eucalyptus plantations are broken because they are industrialised and the land is broken because it is mistreated. I see brokenness in the fragments of the bits of forests that once were.

The most striking image of the brokenness was the vast amount of burnt-down trees. Trees are gracious when alive and dead.

Cork oak has been grown for thousands of years and is made to produce the quality of cork that would satisfy human needs. I respect its resilience. It survives the fires and the human axes that strip its precious bark. It is bizarre to see the trunk of a cork oak being thinner at the start. Usually, the widest part of the trunk is closest to the ground.

Montados also are like fragments from ancient forests, where one tree was chosen from many others. In the same way that the eucalyptus trees are chosen today in this area. I also needed to make choices and let many ideas go. I choose to cast metal in the cork since it introduces the heat of the fire to the cork as do the wildfires. The cast captures the inside of the cork oak tree and the outside of the trunk. The metal shows the meeting point of the protector and the protected. It's the limit of life where the fire shouldn't pass, the beginning of vulnerability and possible death.

I use raw cork, the firstly harvested one. It is usually left behind because it is too porous and hasn't reached the wanted quality. Cork meets with hot metal. It survives the silver and the tin but bronze consumes it almost until the end.



Close look to the inside of the cork bark, harvested this year.



Cork bark is almost left to nothing after the casting of the bronze.

Cork is easy to cut, it is soft and smells beautifully. It is similarly easy to carve forms into it. I try carving trees into small casting forms that I have cut out. Cork has a slight curve from embracing the tree. It leaves space between two pieces when tied together for casting form. The heat of the melted silver makes the cork burst into flames but I blow it out like a candle. Part of the cork burns but most of it remains, having been in contact with 961.7 degrees Celsius. The studio fills with smoke, black ashes scatter on the floor. Once again I am stained by charcoal. The silver trees look hopeless, just like fragments from the forest. On some of them, I find patterns of the cork oak. Silver has flowed into the empty space between cork pieces and captured the vein-like lines on the cork.



Hot silver in the cast form that is made of the first harvest of cork.



A cooled down silver that has flowed into the carvings. It hasn't flowed equally therefore looks broken.



The opening of the cast form. Trees are carved only to one side of the cork.

I like the fact that my control of this process is minimal. Different metals flow differently. Silver is great for the small cast forms since it cools down quickly. Therefore it does not flow out from experimental cast forms as does tin. Tin melts incredibly fast and turns as liquid as water in a flowing river. I can turn goblets and plates from thrift stores into liquid in no time. Tin runs into crevices and holes and takes an exact and precise form of cork. The temperature of tin is so low that it only leaves a mark on the cork without setting it on flames.



Cork bark transported to Estonia in hand luggage to meet the tin from the thrift stores. Photo by Yufang Hu.



Tin that has taken the shape from the cork bark. Photo by Yufang Hu.

I also cast tin on the pieces of olive tree which got heavily burnt by the fire and made tiny explosions. Olive trees are called oil trees for a reason.



Olive tree that got burnt and the tin that got melted.

The bronze cast hurts the cork most. Bronze is a composite metal of tin and copper. Copper melts at 1084 degrees Celsius and the tin is added in the end to make the copper flow better. I cast the bronze at the end, after all the tin is melted and cast. I am sure that it will burn cork into ashes, especially because of the huge amount that is poured. It does consume a thick layer of the cork bark but not all of it, since the flames are killed by a wet towel. The resistance to heat is incredible.



The cast form of bronze with cork and clay.



Freshly stripped cork oak tree and a spider. Photo could easily be of a piece of cast bronze.

Conclusion

The plantations that surround me will be here, with or without this thesis. It might take another fire or many other fires for things to change. My contribution to knowledge is a story from my corner of the world. I tell the story of anthropomorphic landscapes around me and the relations between humans and land that I notice.

I wrote the thesis ignited by restlessness and dissatisfaction with my surroundings. Through writing, I got to know the place and myself better. The material part of the work was finding expression for trauma after the wildfires. In the written work I showed that land, wildfires, and plantations are tightly connected.

On the notional level, the work is divided into two main parts, before and after the trauma. The first part introduces my home before the fire in the centre of Portugal to which this work is dedicated to. The second part talks about the land after the wildfire in 2017 in Pedrógão Grande. It includes the part about the creation of artwork. The post-apocalyptic landscape is present throughout the work.

My hypothesis in this work was that if the native trees were allowed to grow as they wish, unhindered by humans then the forests would return. I have shown that by explaining the vigorous way in which oaks and cork oaks keep reappearing, even in plantations.

Cork oak has been present throughout the written work and the artwork is made through it. It was important for me to work with local material as the story itself is local. I connected the local story to the bigger field of Anthropocene writings. Through reading various thinkers in the field I could find words and ways to express myself.

The weakness of this work is that it is not saying anything new. It stays within the descriptive narrative. Neither does it solve problems nor search for big answers to big questions.

The purpose of this thesis was to organise thoughts and impressions into a comprehensive text which could be communicated. Artwork is strongly locational, firstly inspired by the surroundings and secondly, the process of creation is supported by the surroundings.

Kokkuvõte eesti keeles

“Katkenud metsad” räägib loo põlengust, mis leidis aset Portugalis aastal 2017 ja mis hetkega muutis kõigi silme all pöördumatult kogu ümbritseva maastiku. Töö on mõtteliselt jaotunud kaheks – esimene osa keskendub elule enne põlengut ning teine osa räägib muutunud elust pärast tulekahju. Kirjalikku tööd saadavad tööd materjalis.

Töös segunevad igatsus endise elu ja elupaikade järele, kaastunne, hirm ja hoolimine. See väljendab muret ja armastust koha pärast, mille on enda alla haaranud eukalüpti istandused ja inimeste isekad vajadused. Läbiv teema on suhe maaga ja maastikuga ning selle muutumine ohtlikuks läbi inimtegevuse. Töö asetub Antropotseeni käsitleva paradigma alla ning lisab kohaliku loo laiema teemakäsitluse all. Kaks vastandlikku liiki lahutavad töös endise ja praeguse, omavahel ühildamatu maailma.

Austraaliast pärit eukalüpt on kergelt süttiv ning kasvatatud hübriidse kloonitud puuna istandustes. *Quercus suber* ehk korgitam see eest on kohalik, kasvatatud tuhandeid aastaid väärtusliku korgi pärast. Korgipuu õhuline koor teeb ta tulele vastupidavaks.

Töö materjalis kasutabki korki osalt tema vastupidavuse ning proovile panemise tõttu. Kuum metall on valatud korgitamme koore sisse ning valu vorm jäädvustab korgitamme koore ning tüvi kohtumispunkti. Joont, mida tuli ei tohi ületada. See on joon, mida mööda see töö liigub – hävimise ja ellu jäämise vahel. Madalam kuumus ei tee korgile muud kui muudab värvi, aga suurel kuumusel enam materjalist hävib. Vastupidavus ja kaduvus on jäljendites mõlemal juhul salvestunud.

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