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PLASTIGLOMERATE ROCK DREAMS ZINE # 002

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PLASTIGLOMERATE ROCK DREAMS

*B*ITING ON THE SAME TAIL is the second publication under the project PLASTIGLOMERATE ROCK DREAMS.

*B*ITING ON THE SAME TAIL is an experiment in imagining new motifs to critically think through the ways in which temporalities and ecologies intertwine with human-made technical systems. Starting from the concept that language and knowledge systems shape and make our world, this body of work reflects on how crisis inducing systems such as capitalism and Eurocentrism have produced philosophical barriers that prevent both symbiotic thinking with the environment, and imagining diverse futures outside of current crises. The text attempts to rethink the role of technology in this: a role which has frequently been leveraged to that of a saviour, an escape route from the crises from which it stems. Rejecting the innovation centric drive of design thinking, this essay instead begins to map out interconnecting systems, narratives, spaces in-between, and philosophies that shape new modes of thinking with and perceiving environments and machines.

*P*LASTIGLOMERATE ROCK DREAMS is a project investigating Industry 4.0's intersections with political ecology, social justice and sustainability, both within the Fashion Industry and broader design and creative fields. In- the form of writing, interviews, video and narrative artefacts, the project engages in both speculative practises and industry research to examine technology's role in both positive change, as well as disruption, control and power.

CONTENTS

BITING ON THE SAME TAIL

Biting on the same tail: a feedback loop with many names.
From it's earliest inceptions: a metaphor for life,
the cosmos, orbits, cycles, returns,
heliotropism, or the turning of plants towards the sun,
the circular motion of a sundial or hands of a clock,
how we map and understand time itself.

Biting the same tail is also the machine learning loop:
the systems that underscore much of the digital logistics of the world,
where self learning algorithms loop data from the just gone past,
into algorithmic predictions and decisions in the future,
a process which brings with it the biases, mistakes and power
embedded in its training data.

Technological dominance enforces a form of convergence:
synchronising time into a homogenous technological epoch.
Such looping systems require looped thought,
away from the dominant linear line of progress.

*T*he question of future heavily underscores much cultural narrative surrounding our climate and technologies. Following a linear forward marching perspective, imaginaries of futures of course range from overtly dystopian, to utopian, and everything in-between. Yet the dominant narrative of this linear march towards modernity and now hypermodernity is one rooted in colonial, patriarchal and capitalist realities — a narrative which consistently places the pursuit of progress above peoples and environments, a narrative echoed through Silicon Valley's 'ask for forgiveness, not permission' attitude. Innovation time is thus the pace of both capitalism and homogenisation, where newness and future electronics are not always dictated by necessity, but by planned obsolescence and ever speeding up market competition. The mentality of prioritising 'innovation' above all else, whether this be the path towards greater degrees of automation, AI super-intelligence or the space race, leaves little room for most humans and non-humans alike. Exclusively future-centric and innovation-centric mentalities are therefore largely inadequate in reckoning with the realities of overlapping crises and recuperation. Instead, we must move towards circular models of thinking through our social, political and environmental climate: revisiting and not forgetting the histories of communities— both human and non-human— whose livelihoods have already been made apocalyptic.

*A*nd how many times have we heard the quote: *'it is easier to imagine the end of the world, than the end of capitalism'?*

*E*urocentric modernity has produced philosophical barriers that prevent symbiotic thinking with the environment, and thinking beyond capitalism. Eurocentrism is defined by Samir Amin as a logic which imposes itself as the dominant worldview through Western capitalism. Its dominance produces an 'asymmetric reality,' whereby societies in the peripheries of capitalism are forced into the task of catching up with modernity.[1] Recognizing this dominant narrative as a form of homogenization, the philosopher Yuk Hui proposes engaging with 'Cosmotechnics' to envision more diverse futures with technology. Cosmotechnics begins by tracing the cosmological conditions of technical thinking in each culture, and as Hui states is a framework 'to overcome the conventional opposition between technics and nature, and to understand the task of philosophy as that of seeking and affirming the organic unity of the two'.[2] As modernity has destroyed much of cosmological thinking across a broad scope of cultures, this is a difficult task. Revisiting histories of cultural cosmologies can influence more situated and diverse philosophies of technology, yet as Hui states 'capitalism is the contemporary cosmotechnics that dominates the planet,'[3] and therefore in order to progress 'we must instead reinvent a cosmotechnics for our time'.[4]

So what can we learn from the symbol of biting on a tail? Biting on a tail is a symbol that invokes an ancient ouroboros, circular time, a loop, a zero. Symbols, like cultural myths shapeshift through time, re-emerging as communication tools in storytelling, advertising and identity. Zero, which could be perceived as a hole, empty space, nothing under capitalism, nothing left to exploit, is also the same zero required in the coding of the worlds' digital architectures. In Sadie Plant's 'Zeros + Ones', she writes that binary code turns zero into far more than a symbol of a void. On the binary punch card system used in 19th century Jacquard weaving looms and the mechanical Analytical Engine, which is considered a precursor of modern computing, Plant writes: 'a hole is one, and a blank is zero, in which case there are two missing elements, if missing is where either can be said to go. No longer a world of ones and not-ones, or something and nothing, thing and gap, but rather not-holes and holes, not-nothing and nothing, thing and gap'.[5] Thinking on holes and physics, Plant expands on the meaning of zero, or a hole, as a charged particle running in reverse. For the quantum physicist, 'holes are not the absence of particles, but particles traveling faster than the speed of light'.[6] In this example of zero, we see how a motif can come to symbolise at once everything and nothing, the poetics of physics phenomena, and act as a key component of binary systems. Yet as we will come to see, through the encoding of symbols into language and code, violence and invisibility can sit hand in hand.

Whilst zeros change their definition through the binary system, conceptions of language also change through code. As we exist in an era which is increasingly ruled and made by the language of computer code, what does this mean when our worlds and our perceptions are shaped and constrained by language? Language, our narratives and our symbols shape the parameters of what exists and what is possible. Whilst the language of code flourishes under, and makes techno-capitalism, it is important to note how following decades of domination and colonialism, the diversity of human languages and ways of life are diminishing. Jairus Victor Grove writes that 6,912 languages are spoken worldwide, and predictions from UNESCO suggest that over the course of the 21st century, under fifty percent of these will survive. Language is not only communication, but 'each language contains a different cognitive map of the human brain'.[7] Therefore with each language lost 'we lose a glimpse of the cosmos never to be repeated'.[8] Under this trajectory, the world loses a vast number of lifeworlds, indigenous knowledge, ways of thinking-with and speaking-with the environment, away from the human/nature dualism that emerges under Eurocentrism and modernity.

As techno-capitalism makes history of the diversity of human spoken languages, the language of code inscribes and makes future through prediction and decision making algorithms. Franco Berardi writes: 'Like prescriptions, prophecies and injunctions, code has the power to prescribe the future, by formatting linguistic relations and the pragmatic development of algorithmic signs'.[9] Through code, linguistics is automated, and as linguistics shapes our conceptions of possibility the question is: whose worldviews are being automated into code? As many growing works including Cathy O'Neil's 'Weapons of Math Destruction', Safiya Umoja Noble's 'Algorithms of Oppression', Ruha Benjamin's 'Race After Technology' and many more have made clear, a matrix of bias and inequality are reproduced and proliferated through algorithms. In the US, predictive policing algorithms substantiate white supremacy and what Ruha Benjamin calls the new Jim Code: 'the employment of new technologies that reflect and reproduce existing inequities but that are promoted and perceived as more objective or progressive than the discriminatory systems of a previous era'.[10] Safiya Umoja Noble's work examines how the design of search engines can perpetuate and reinforce racial stereotypes about women of colour and other marginalized communities. These are merely two examples from a vast minefield in which the violence of the past loops into the future through technologies. As the process of training AI relies on huge amounts of past data, and therefore past (and ongoing) biases, its essential that we critically rethink the obsessive narrative of futurity which is one subsumed and dominated by AI.

1. Samir Amin, *Eurocentrism: Modernity, Religion and Democracy, A Critique of Eurocentrism and Culturalism* (New York, Monthly Review Press: 2009) p.7–8.

2. Yuk Hui, *The Question Concerning Technology in China: An Essay in Cosmotechnics*, (Falmouth: Urbanomic Media, 2016) p.19–20.

3. Yuk Hui, 2016, p.299.

4. Yuk Hui, 2016, p.201.

5. Sadie Plant, *Zeros + Ones: Digital Women and the New Technoculture*, (London: Fourth Estate,1998) p.56–57.

6. Sadie Plant, 1998, p57.

7. Jairus Victor Grove, *Savage Ecology: War and Geopolitics at the End of the World*, (Durham: Duke University Press 2019) pg.54.

8. Grove, 2019, p.55.

9. Franco Berardi, *Breating: Chaos and Poetry*, (California: Semiotext(e), 2018) p.28.

10. Ruha Benjamin, *Race After Technology: Abolotionist Tools for the New Jim Code* (Cambridge: Polity Press, 2019) p.5–6.

THE DETRITUS CYBORG

Cybernetics and the cloth that houses our physical flesh intertwined long
   ago, as the punchcards of jacquard looms inspired a revolution in
   human–machine interaction through binary code. On the Analytical
   Engine, considered to be one of the first examples of modern computer
   design which utilised a similar system of punchcards, Ada Lovelace
   stated in 1843: "The Analytical Engine weaves algebraic patterns, just
   as the Jacquard loom weaves flowers and leaves".

Then came the cultural fascinations with cyborgs,
   from transhumanists who offer transcendence from human finitude,
   to cyberfemists who offer cyborgs as critical symbols of emancipation.

But this detritus cyborg is not one of new–ness or futurity.
   This detritus cyborg represents what is purposefully made invisible
    in the production of future:
   a future defined by destructive creation,
   polluting manufacture,
   the destruction of techno–diversity.
   The detritus cyborg is not a cyborgian narrative of emancipation,
   but an ongoing remembrance of its supply chains,
   rife with geopolitical conflicts,
   mining from earth crust all the way to the moon.

The misremembering of 'innovation'
   the misremembering of gleaming cyborgs
   creates a false gaze that claims tech neutrality,
   imbued with a future detached from the mud on which we stand,
   a misremembering that the biosphere and the techno-sphere constantly mirror,
   *but remember where your rare earths are from.*

⌖

~*focus in ~ the complex history of rare earths*~
   The detritus cyborg divests from linear narratives to obsess over histories: *the material histories of producing cybernetic bodies from extraction to e-waste dumps.*
   The elements and components that build electronics derive from histories of mining politics, military competition, and at the same time a geological timeline of earth crust. However, it is an aura of alchemy and misnomers that bring metallic elements into fruition in popular imagination.

Scandium
Yttrium
Lanthanum
Cerium
Praseodymium
Neodymium
Promethium
Samarium
Europium
Gadolinium
Terbium
Dysprosium
Holmium
Erbium
Thulium
Ytterbium
Lutetium

The set of seventeen metallic elements classed as rare earth
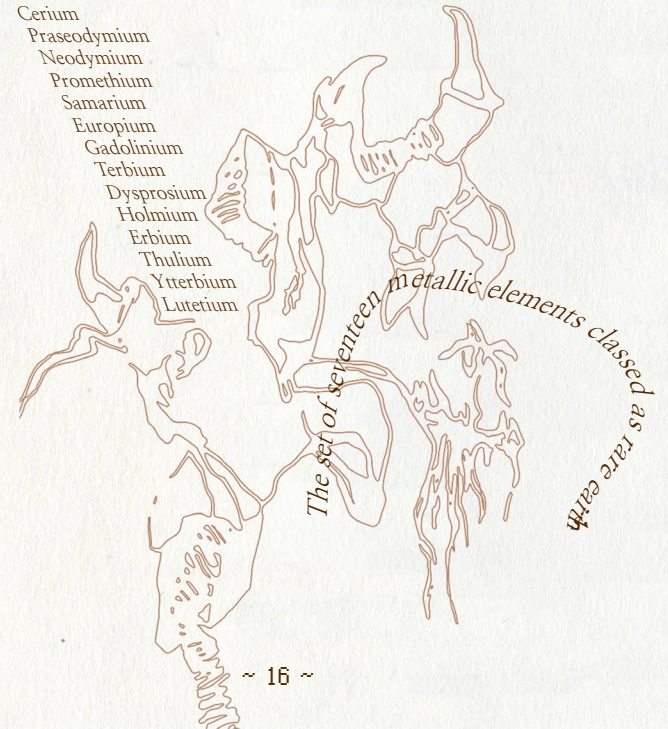
*U*nder the contemporary narratives that engulf our perceptions of technological devices, the matrix of mining processes that are required to produce each device are largely forgotten or bound up in myth. This can be widely recognised in discourse surrounding the rare-earths industry: the exceptional conductive and magnetic properties of which have been imperative in developing the material hardware of technological modernity. In 'Rare Earth Frontiers', Julie Michelle Klinger gives the example of neodymium, which led to the miniaturisation of computer hard drives and speakers, and renewable energy technologies such as wind turbines, solar panels and hybrid fuel cell batteries. However, neodymium and its alloys are also 'fundamental to the hardware of contemporary militarism: cruise missiles, smart bombs, and drones'.[1] Other rare-earth's such as terbium, europium and yttrium are likewise 'used in radar, sonar, and radiation detection devices for targeting and detection in urban, maritime, and aerial warfare,'[2] yet as Klinger notes their properties are also crucial for medical optics in MRIs and X-rays. As rare earths are inextricably linked to power, the military, scientific advancement, and capitalist supply chains, it is no surprise that such myth and opacity surround them. Rare-earths like so many extractive industries such as oil, lithium and diamonds drive geo-political competition over territories, frontiers and narratives.

*P*opular narrative places electronic devices on pedestals: technologies are envisioned as magical devices that bring us to future. Just as this conjuring has abstracted the status of tech, a linguistic slip in the naming of rare earths has manufactured a false rarity. What are classified as "rare earth" elements are in fact not rare, and many rare earth metals are more common than copper, as Klinger states: 'as of late 2015 there were more than 800 known mineable land-based deposits on Earth'.[3] Like transhumanist cyborg imaginaries which proliferate in the fear of finitude of human life, the "rare earth" industry banks on a myth of depleting resources. Klinger writes that in 2010 this narrative was widely peddled in media surrounding mining in China. China produced 97 percent of rare earth metals in 2010, after which point mainstream media and politics presented a false 'threat posed by global dependence on China and painted apocalyptic pictures of urgently intensifying geopolitical contest in a fictitious context of disappearing global resources'.[4] Following 2010, power scrambles to find alternative terrains for extraction sprouted 'campaigns to mine rare earths in the most forbidding of frontiers: in ecologically sensitive indigenous lands in the Amazon, in war-torn Afghanistan, in protected areas of Greenland, in the depths of the world's oceans, and even on the Moon'.[5] Given the neoliberal "out of sight out of mind" mentality, it is no surprise that global powers profit from such narratives that legitimise the common offshoring of hazardous production. This form of "race to the bottom" spacial politics is a form of environmental outsourcing: communities

and landscapes are devalued and opened up for global exploitative labour chains. In the case of rare-earths, this is especially prevalent as their extraction poses both environmental risks and health risks.

*R*are earths often coincide with hazardous elements such as arsenic and the radioactive uranium. At every stage from the initial mining, to refining processes using acids and toxic chemicals, to waste management, extracting rare earths produces hazardous waste. Klinger states that 'every tonne of rare earth produced generates approximately one tonne of radioactive wastewater; seventy-five cubic meters of acid wastewater; 9,600 to 12,000 cubic meters of waste gas containing hydrofluoric acid, sulfur dioxide, and sulfuric acid; and approximately 8.5 kilograms of fluorine'.[6] In Addition, all rare earth elements 'can cause organ damage if inhaled or ingested; several corrode skin; and five— promethium, gadolinium, terbium, thulium, and holmium—are so toxic that they must be handled with extreme care to avoid radiation poisoning or combustion'.[7] Due to such threats of toxicity, from selecting which terrains to mine to which terrains to dump e-waste, a racialised environmental injustice following legacies of colonialism, racism and classism is clear. Sacrifice is imposed purposefully onto specific zones whose inhabitants' livelihoods are de-valued under the global project of extractivism, to legitimise their destruction. This is a cycle which appears time and time again: visible in mining, in the manufacturing of technologies, and across the fashion and textiles industries. In producing the utopian worldview new technologies falsely offer, these supply chains are made invisible: along with the tech assembly workers, the click-workers that facilitate machine learning, the human content moderators viewing psychologically disturbing materials online (a job which is often claimed to be automated), and the e-waste recyclers. In another flip, environmental outsourcing frequently is used to deflect responsibility for bad labour conditions onto the communities of the sacrifice zone — yet it is those with capitalist, military and colonial power who have historically, and to this day benefited from this exploitation.
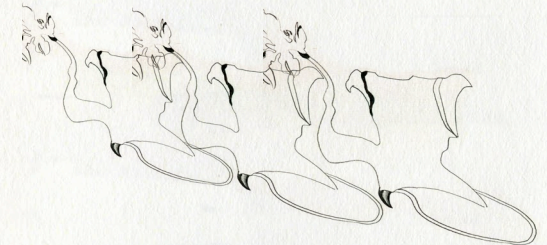
*R*are earths— both their physical materiality and their media mythologies— are required to produce the most insidious military tech, new medical a nd science equipment, and the components that power so called "green" technologies. But who is "green" technology for, when their supply chains entangle in the same web as what they claim to distinguish themselves from? Histories and futures of both destruction, power and g reen energy entangle in the same materials, underlined by a spacial politics of sacrifice and extraction: who gets mined, who gets polluted. Pollution is a deeply political spacial allocation made by the powerful. Recursive violence produces the future.

1. Julie Michelle Klinger, *Rare Earth Frontiers: From Terrestrial Subsoils to Lunar Landscapes,* (Ithaca New York: Cornell University Press, 2017) p.49.
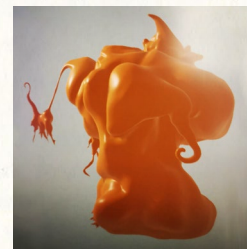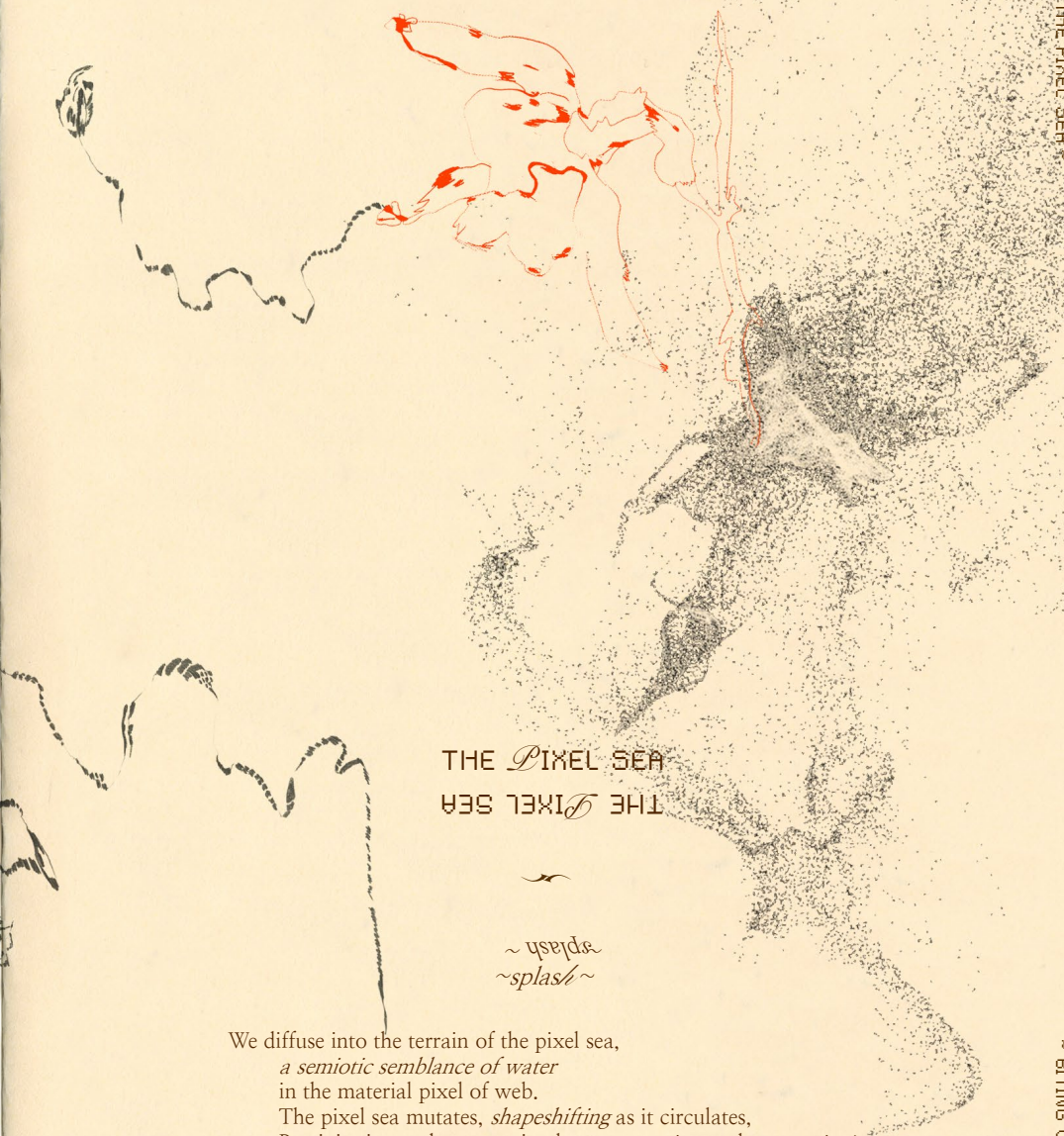
2. Klinger, 2017, p.49.

3. Klinger, 2017, p.6-7.

4. Ibid.

5. Klinger, 2017, p.2-4.

6. Klinger, 2017, p.55.

7. Ibid.

THE $\mathscr{P}$IXEL SEA

THE $\mathscr{P}$IXEL SEA

~ splash ~

~splash~

We diffuse into the terrain of the pixel sea,
    a semiotic semblance of water
in the material pixel of web.
The pixel sea mutates, *shapeshifting* as it circulates,
Precipitating and evaporating between *pixel sea* and *internet cloud*.
The pixel sea circulates not only social memory and thought,
but also circulates disinformation and violence.
The pixel sea is an ebbing social form,
and just as mining powers attempt to mine the deep sea floor,
the pixel sea is mined for behavioural data.

Gary Zhexi Zhang writes that within calls to think more 'ecosystemically' exists a seduction of systems. This is observable both in utopian frameworks which seek to understand the myriad complex systems that shape our world, and in inspiration for systems that are reductive and exhort control. Zhang writes of how systems thinking directly stems from attempts to rationalise Nature: Norbert Wiener, who is considered an originator of cybernetics, took influence from the organisation and structuring of natural systems; Howard Odum, who pioneered the field of systems ecology blended 'analysis of pine forests, atmospheric gas cycles, and socioeconomic systems' into an 'energy circuit language' which quantified 'ecosystemic complexes' into the language of electronics and engineering.[1] While environmental systems bleed influence into cybernetic ones, unlike the regenerative biological exchanges that form the world's ecosystems, the technologies that grow out of cybernetics and systems theory are not ones designed for mutually beneficial symbiosis, but ones designed for corporate governance. From this line of systems thinking and cybernetics, precursors to the internet and AI were born: technologies that now entangle with, are shaped by and shape politics, capitalism and the biosphere.

Trans-corporeality *blurs* the boundaries of membranes.
As our microbiome is a geography of exchange,
The pixel sea too, makes for a *leaky geography*:
a constant flux between life, non-life,
rare earths and self-learning machines.
Just as fish consume the detritus of micro plastic
we consume the world through pixels.
The materiality of the internet is obscured in metaphor
evoking something seamless, ephemeral.
Yet power is hidden and insidious,
under seas and clouds.

~ rhizomatic systems and environmental metaphor ~

Web, cloud, rhizome, pixel sea — different metaphors for the internet which are evocative of collaborative free flow. Although being terrains of in-between, through metaphor the internet becomes rooted in ecological systems: social geographies imposed and imagined onto physical landscapes. Where does this tendency to make ecological, the cybernetic organisms that subsume the planet arise?

These swarms of connective systems alter our physical geographies, as machines become alive, interacting with humans through networks, evoking a globalised centre of connection. Control in this space is an indeterminate combination of computer systems, nature, communication systems, governed by opaque powers in ways we cannot fully be conscious of, because they have been designed explicitly so. It is not the technology itself which determines how power and control can be made invisible, but the encoded incentives of those in power: a mirror of social disparities. Beyond envisioning machines as living entities that disrupt social geographies, Yuk Hui states that they quite literally are the geographies we inhabit: "what we are witnessing today is a shift from the organised inorganic to the organising inorganic, meaning that machines are no longer simply tools or instruments but rather gigantic organisms in which we live".[2] Passing this off as an unavoidable consequence of systems design would be hugely reductionist, knowing that technologies enact the interests of elite technocrats. As communities from human to non-human dissolve into mass metaphors of the pixel sea, webs and clouds, super-connectivity evokes the image of free-flow, decentralised information share and infinite possibility, yet power is not distributed evenly as these metaphors evoke.

~ from metaphor to fossil to extractive future ~

Povinelli's Geontology Desert is another such figure that examines the relationship between biopolitics, power structures and the landscape imaginary. Povinelli defines 'Geontopower' as a 'set of discourse, affects and tactics used in late liberalism to maintain or shape the coming relationship of the distinction between Life and Nonlife'.[3] Noting the way humans have been centred as the dominant protagonists against the 'other biological, meteorological and geological actors' in the often contested concept of the 'Anthropocene', she notes that from a geological perspective, it was in fact the so called 'Nonlife' from which 'Life' on Earth began. This 'Life' now threatens itself to extinction, a return to lifelessness: 'the Human, the Nonhuman, the Dead, the Never Alive [···] act out a specific drama: the end of humans excites an anxiety about the end of Life and the end of Life excites an anxiety about the transformation of the blue orb into the red planet, Earth becoming Mars'.[4] Like the race to Mars that embodies both fear of total environmental collapse on Earth, as well as a problematic techno-utopian site for terraforming, the Geontology Desert fluctuates between life and non-life: the possibility that Life is always at threat from the creeping, desiccating sands of Nonlife. The Desert is the space where life was, is not now, but could be if knowledges, techniques and resources were properly managed'.[5] Deserts like fossils act as reminders of life and loss. Fossil fuel extractivism, to current fears of becoming a fossil lay the grounds for 'contemporary, hypermodern, informationalized capital —and a new form of mass death and utter extinction' which 'calls for a capital or technological fix to anthropogenic climate change'.[6] As techno-utopianism, and innovation centric views of history are reliant on finding problems to solve, the narrative of supposed oncoming terrestrial hostility both motivates and legitimises searches for techno-fixes and escapism to Mars.

The pixel sea and internet cloud are likewise spaces in flux between life and non-life, rife with technical behavioural fossils: code and search histories, the human data that is now mined for profit under surveillance capitalism. How many times have we heard the saying: 'data is the new oil'? Unlike fossil fuel reserves, data is not only mined, but actively manufactured through the design of tracking and surveilling digital systems. Though the 'cloud' and the 'pixel sea' obliterate the materiality of the internet, perhaps they mirror the same fate of control, manipulation and extraction that the sea and clouds do? From weather manipulation tactics of cloud seeding, to geo-engineering oceans into reflective mirrors that bounce back heat, re-engineering with unknown consequences takes place under the claim of climate control.

~ resisting homogenization: a crisis of narrative ~

As we've seen, metaphor and technological seduction mask and obscure the physicality of the internet— an act of homogenisation whereby metaphors evoke something ephemeral, equal — the reductive naming of contemporary crises has produced much critique. The term Anthropocene, which suggests an era of geological time defined by humans' destructive activities, has been hugely contested for placing the blame of climate change equally on all humans when it is clear a small percentage of the human population is largely responsible. Identifying climate change, colonisation, extractive capitalism, and species extinction as actors under the same global ordering, Jairus Victor Grove names this crisis the Eurocene. To put it another way, quoting Malm and the Zetkin collective: 'Europe is the continent that gifted the world with both the fossil economy and fascism'.[7] Reckoning with the flattening anthropocentric narrative of climate change and holding accountable the powers that have produced 'the unfortunate historical generality of the Anthropocene,'[8] Grove claims is vital in moving towards any form of climate justice. He writes: 'The continuing project of Europeanisation led by US Imperial power, is central to how the planet got to this point. Understanding this is essential for how any "we" worthy of the plurality of the planet can invent something less nasty and brutish than what currently counts as global order'.[9] The Eurocene as both a geological history and geopolitical domination is a huge obstacle blocking routes to plural futures.

Can the metaphor of clouds and seas be re-tooled towards new perceptions of technologies? Seas and clouds might evoke ephemerality, but they also carry cultural heaviness: think of pathetic fallacies which tie rain, stormy seas and dark heavy clouds to emotions, hauntings, mushroom clouds. To narratives of futurity defined by technologies, the forces of weather entail not just heavy emotion, but can be geographies of retaliation, if we consider the looming threat of materiality and moisture. Grove writes "*the third and fourth industrial revolutions depend on sterile labs and rare earth minerals, which when assembled for computation are fatally allergic to heat and water, and entirely depend on sterile labs and luxurious amounts of electricity. In a world that is getting hotter and wetter, and where energy is scarce, one would hope that other technologies as well as other life forms are possible.*"[10] Under the homogenisation that unfolds through technology, physical seas, clouds and dust serve as active disruptors and reminders that technologies are not invincible in face of water systems. Through the poetics of the clouds, seas and water cycles which transport elements to the atmosphere without the hard

technologies of planes and rockets, perhaps we can find some elements of Ursula Le Guin's call in Carrier Bag Theory of Fiction. Le Guin's essay states 'if science fiction is the mythology of modern technology, then its myth is tragic,' and instead argues towards an understanding of technology that is more 'cultural carrier bag rather than weapon of domination,'[11] recognising that the sacks, bags, vessels, and carriers of both stories and sustenance are 'technologies' that have brought forth more progress than patriarchal centred tales of spear throwing and conflict. Technological progress under a normative patriarchal definition does not directly lead to social progress, but through de-leveraging the utopian false promises of human-made technology we might see how cycles of water, seas and clouds are just as important 'technologies', carrying sustenance and stories through pasts and into futures.

To biologise machines makes it too easy for capitalism to green-wash and tech-wash through metaphor the destructive systems it produces. To make machines ecosystemically is not a clearcut route for environmental regeneration, as the project of cybernetics was always a form of biomimicry: anthropocentric and masked in metaphor.

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1. Gary Zhexi Zhang, 'Systems Seduction' in Resisting Reduction: Designing Our Complex Future With Machines, ed. by Joichi Ito (Massachusetts: MIT Press: 2019) p.147-148.

2. Yuk Hui, Recursivity and Contingency, (London: Rowman & Littlefield, 2019) p.28.

3. Elizabeth Povinelli, Geontologies: A Requiem to Late Liberalism (Durham: Duke University Press, 2016) p.4.

4. Povinelli, 2016, p.12.

5. Povinelli, 2016, p.16.

6. Povinelli, 2016, p.17.

7. Andreas Malm and Zetkin Collective "White Skin, Black Fuel: On the Danger of Fossil Fascism." (London: Verso, 2021) p.20 ebook version.

8. Jairus Victor Grove, Savage Ecology: War and Geopolitics at the End of the World (Durham: Duke University Press, 2019) p.40.

9. Grove, 2019, p.40.

10. Grove, 2019, p.223.

11. Ursula Le Guin, The Carrier Bag Theory of Fiction, 1986, ⟨ https://theanarchistlibrary.org/library/ursula-k-le-guin-the-carrier-bag-theory-of-fiction.

THE ℬIOGLOMERATE

~searching for an enmeshment that revels in dust~

The bioglomerate revels in the poetics of the landscape,
in environmental enmeshment:
the wood ear mushrooms that sit on bark,
listening to the movements and stillness of the surroundings,
the molluscs and worms that live on the backs of horseshoe crabs.
Like the detritus cyborg, the bioglomerate is not one of newness
it is an ancient crustacean as much as it is today's fat–bergs wreaking
havoc in sewers.
It is the dust, the moisture, the mould, that threatens the mechanical
workings of electronics.

We often have seen how AI ascends to the heroic,
when these technologies are born from earth elements,
and mirror social formations including all its wrongs.
AI speculations litter the technosphere,
as dust, mould and moisture,
leaves speckled threats to mechanics.
An equaliser:
a reminder that these gadgets are not invincible
in the face of the dust from which they are made.

The bioglomerate roots itself in Donna Haraway's 'Staying With the Trouble' and Anna Tsing's 'The Mushroom at the End of the World': forms of multispecies storytelling that disrupt the human-centric hubris of the Anthropocene narrative, whilst intertwining research, sciences and recuperative models for futuring. Haraway describes this form of sympoeisis as 'speculative realisms' comprised of 'multispecies players, who are enmeshed in partial living and dying attuned to still possible finite flourishing'.[1] Their narratives are rooted in a proximity to the real: the messy and collaborative entanglements that exist despite capitalist destruction. The bioglomerate is as much the trodden patch of mud and grass by a busy road as it is a rare flower in bloom no human eye can see. The bioglomerate seeks to reject the nature/culture dualism of Eurocentrism and modernity. It revels in the mundane, the patches of fauna or flora cohabiting cities which are worthy of regeneration too. It represents a reckoning with the 'still possible recuperation,' that flourishes in Tsing and Haraway's work.

~searching for an enmeshment that rejects purity~

Why is it, that a dualism between nature and human has arisen and gained so much strength? Hsuan L. Hsu writes 'from landscape painting to natural history dioramas, nineteenth-century visual culture played a pivotal role in establishing the ideology of "wilderness" that has fuelled efforts to imagine and preserve "Nature" as a space purified of human inhabitants and interaction'.[2] This construction of "nature" which emerged from Eurocentric modernity shaped a very specific mode of perceiving the environment, dictating who and what is deserving of protection according to notions of purity. Hsu writes that the continuing legacy of this perspective relies on 'ecological-othering' that is classed and racialised, deepening the crisis that is the binary separation between nature and human. Thus, the western conservationist attitude obscures and distorts potentials for thinking symbiotically with our environments, all the same time perpetrating a racist narrative. How are humans to imagine themselves as agents of positive change when the most popular depictions of nature depict a format romanticised by the lack of humans? Even today most of the widely watched media presenting biodiversity can be defined by panoramic depictions of humanless landscapes. The concept of biological purity too, leeches into ideations of bio-essentialist bodies that we must also reject — as social, physical and biological geographies enmesh, binaries must falter.
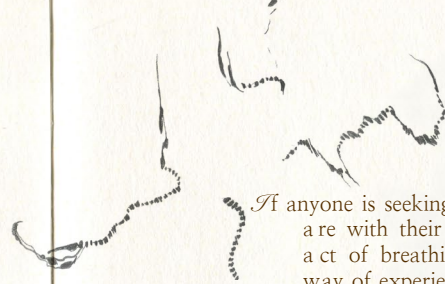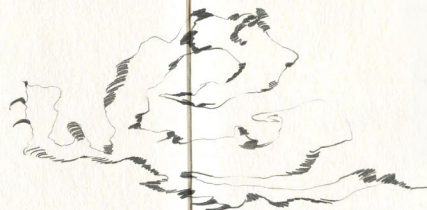
If anyone is seeking a provocation or reminder of how enmeshed humans are with their surroundings, one needs to look no further than the act of breathing. Hsu states that divesting from an ocular-centric way of experiencing the environment towards olfaction is one way to understand humans' inextricable enmeshment. Every time we breathe in, a trans-corporeal exchange occurs, whereby place and air enters our bodies through volatilised scent molecules. We are in constant exchange with the molecules in the surrounding air: 'air represents a vehicle for thinking about environment that refuses easy oppositions between wild "Nature" and artificial "machines"... Air, which consists of shifting combinations of anthropogenic emissions, animal and plant exhalations, and dust particles of nearly everything offers a complex yet often overlooked index of nature's changing status in the the modern world'.[3] Due to air's transitory nature, it rejects the aesthetic of "purity" by entering our bodies out of our control. Hsu writes: 'Air can be a medium of toxicity as well as a medium of sensation... insofar as its transmission involves such risky, trans-corporeal exchanges, smell violates the ideal of purity that governs both visual perception and conventional attitudes about environmental conservation'.[4] Through the action of heightening perceptions of breath, it is apparent that humans are not only enmeshed with their surroundings through air, but enmeshed with the forces of toxicity and pollution—in ways that are far from equal.

𝒯rans-corporeal exchanges between air and humans serve to further illustrate the spacial politics of pollution, and the ways in which the allocation of clean air is something extremely racialised and classed, both literally and via cultural imagination. Hsu references artist Anicka Yi's work 'Life is Cheap' which explores the biopolitics of olfaction: canisters diffusing scents, and two dioramas: one containing a colony of ants, the other strains of bacteria in bloom, swabbed from New York's Chinatown and Koreatown. Hsu writes: "Yi's ants dramatise the invisibility of Asian labourers particularly those who manufacture the electronics that we generally assume to be odourless and nontoxic (at least for the consumer). For labourers involved in the extraction, production and disposal processes of the tech economy, toxic exposure is an everyday affair".[5] Again we see the project of hypermodernity as one that relies on removing electronics far away from the context of their toxic manufacture, and at the same time making invisible the labour and livelihoods that make these products. In the context of the Asian workforce, scent is racialised as dystopian in what Hsu describes as 'atmo-orientalism' whereby the scent of the hypermodern exemplifies 'racial atmospherics that simultaneously includes and marginalises Asian labourers with modernity'.[6] Hsu states that whilst the Eurocentric colonial legacies that produce these forms of political atmospheric engineering both rely on and exploit Asian labour, when dealing with Indigenous livelihoods it is a process of complete erasure: 'a logic of elimination that directly targets Indigenous life as well as Indigenous sovereignty, sensoria and environmental relations'.[7]

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The contemporary urgency of design is to return to a heliotropic circle:
circular design, regenerative design, cradle to cradle.
In an era defined by its manufacture,
we inhabit a turn where 'natural'
is consistently something that is sold back to us,
where 'bio' and another vacuous term 'innovation'
seem to sit hand in hand,
but you can't buy yourself into an earth return.

Not a far away romanticised remembering of it,
not a virtual nature simulation or fantasy memory of the environment,
we're all bioglomerates in the end.

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1. Donna Haraway, *Staying With the Trouble: Making Kin in the Chthulucene,* (Durham: Duke University Press, 2016) p.10.

2. Hsuan L. Hsu, *The Smell of Risk: Environmental Disparities and Olfactory Aesthetics* (New York: Ney York University Press, 2020) p.92.

3. Hsu, 2020, p.57.

4. Hsu, 2020, p.94.

5. Hsu, 2020, p.149.

6. Hsu, 2020, p.151.

7. Ibid.

RETURNING TO *B*ITE *O*N THE SAME TAIL
RETURNING TO *B*ITE *O*N THE SAME TAIL

~

*H*ere we are again,
    returning to bite on the same tail,
    a flux between cybernetics and transcendence
    a cyclical mimesis of misremembering,
    that each technology alone does not deliver utopia,
    that technological utopia is a promise driven by capitalist markets,
    that technologies force a great homogenisation,
    a homogenisation through temporality and support systems,
    a homogenisation in making opaque the labour that created it,
    a full circle where technologies promise to save us from climate change,
    when technologies stem from the exact same systems that produced it.
    The language of marketing produces a future where we bank on
    technologies alone:
    a fetish for the hypermodern,
    transmitted through the hand of power,
    dictating the visible and invisibile,
   divesting from a future from the dust and earth.

~

*I*n contrast to the timeless heliotropism of turning to the sun,
    technocrats gaze moon bound, mars bound, asteroid bound,
    towards infinite mineral mining, towards monetising the cosmos.
    The question of Space is dangled as an ultimate goal
    of projection in the linear race of progress,
    the linear race that is ruinous,
    a projection of escaping the mess they made.

~

Biting on the tail of life's finitude has long been at the core of technological futuring. Technocratic space-gazing ventures, are the same old extractive systems, redesigned as "utopia," redesigned as a "future" to which we ought to aspire. Escaping to Space, technologically hacking into bodies, and the Singularity (a proposed epoch whereby technology irreversibly surpasses human control, giving way to things such as AI super intelligence) are often peddled as trajectories for technological futures, trajectories which bank on fears of finitude of both human life and the Earth's ecosystems. Yuk Hui points out that any attempts to technologically overcome earthly boundedness 'implies an infinite market' whereby 'investors want to profit from the Earth losing its meaning, as if leaving the planet were a matter of leaving one spaceship to enter another'.[1] Space exploration feeds a proliferation of extractivism: a commercialising of the cosmos— expanding mining and extractivism to space and seeing other planets as extensions of raw material for capitalism. These narratives produce futures defined by fear and domination, legitimising responses for further techno-fixes, from transhumanist hacks to advanced weaponry — think of how Elon Musk's Neuralink company was supposedly a response to the threat of AI super-intelligence, now attempting to form implantable brain-machine interfaces, a process which also carries deep underscores of eugenics thinking.

How might we de-centre this dominant narrative of technology and climate change meaningfully? Is it possible to build linguistics and semiotics for technologies and environments that are regenerative, connective, and not proliferations of capitalism? As we have seen, metaphors can carry care and inspiration, but also mask violence and control. Metaphors and myths mediate both technologies and environments, and capitalist marketing knows how to toggle with this too. Returning to the question of systems thinking, in the 'Poetry of Feedback', Jasper Bernes expands on the paradox that cybernetics both appealed to the political left and counterculture, as much as the corporate world, and military engineers. Cybernetics evokes circular energies, information and organising to counter traditional top-down hierarchies. Yet in dissolving central power, Bernes points out that one also finds 'techniques of domination and exploitation could become palatable,' furthermore 'for cybernetics, there is essentially no difference between communication and control'.[2] Whilst cybernetics might appear to transcend binaries between machines and nature, as we have seen time and time again, universalist solutions are a homogenising act of reduction.
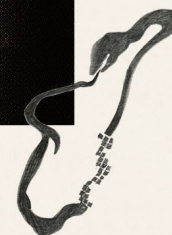
*Y*uk Hui summarises: 'if we try to use cybernetic theory to solve environmental problems, we lose sight of the fact that our relationship to nature is integrally related to human sensibility, for which there is little room in cybernetics. When we think of humans and the Earth as a cybernetic system, we have already lost the world ... reducing the world is losing the world'.[3] What is required is resisting moulding the world into systems that can be calculated and controlled as readily as cybernetics, whilst renewing our reverence for the complexities and pluralities of environmental systems: what Hui calls learning 'how to approach the world as the Unknown'.[4] In order to approach the world as unknown, we require new frameworks for perception. This is a task Hsu's trans-corporeal air, Haraway and Tsing's 'still possible recuperation,' Yuk Hui's Cosmotechnics and Povinelli's symbols of Geontology all share in common: the drive to find new forms of sensing, new linguistics and semiotics for intertwining thinking, whilst foregrounding the biopolitical and spacial violence enacted by those in power on the environment.

*J*ust as Hsu proposes an olfactory mode of environmental perception to blur hard binaries between human and nature, Berardi similarly suggests new forms of breathing to broaden our understandings of enmeshment. In an attempt to attune the vibrational patterns of breathing, poetry and language to the flows of the environment, Berardi references Felix Guattari's Chaosmosis: 'Chaosmosis is the opening of the ordered system to chaotic flows and the osmotic vibration of the organism that looks for a rhythm tuned to the cosmos'.[5] He defines chaosmosis as a form of breathing with chaos: 'osmosis implies breathing together, but in this osmosis with chaos a new harmony emerges, a new sympathy, a new sentry'.[6] From this collective act of breathing through chaos, Berardi states new forms of being and knowing can emerge into linguistics: 'only an act of language escaping the technical automatisms of financial capitalism will enable the emergence of a new life form'.[7] Through this alignment with chaos, power disparities must be reckoned with, and the homogeneity under anthropocentrism and capitalism must be critically challenged. It is through forming new linguistics and modes of perception, that we can challenge the narratives of capitalist destruction that continually profit from cycles of crisis.

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1. Yuk Hui and Anders Dunker 'On Technodiversity: A Conversation with Yuk Hui', LA Review of Books, June 9 2020, ⟨ https://lareviewofbooks.org/article/on-technodiversity-a-conversation-with-yuk-hui/⟩.

2. Jasper Bernes, The Poetry of Feedback, (eflux journal #82 : May 2017).

3. Hui and Dunker, 2020.

4. Hui and Dunker, 2020.

5. Franco Bifo Berardi, *Breathing: Chaos and Poetry* (California: Semiotext(e), 2018) p.49.

6. Berardi, 2018, p.31.

7. Ibid.