Geofilters

Vertical Sight and the Tropikós Turn

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NowHere

Mid-brown skin, dark black hair – my eyes turn from brown-yellow to green-grey when the sunlight turns. I was born in Colombia. I grew up in Bogotá, in one of the many hearts of the mountains and one of the middles of the tropics. I am a designer, researcher and artist. I've been developing my practice between Berlin and Bogotá, fascinated by the clash between emerging technologies and grassroots popular culture from tropical territories – investigating the development of cultures, visions, realities and worlds, through the remix and reappropriation of technologies in the tropics.

This is from where I speak. In the following lines, I will expose my current visions from NowHere around (sovereignty in) the tropics and my process investigating and developing GeoFilters.

The Shift / The Turn

There's a shift. Something is changing and something is moving. Some can feel it in the air. Tiny micro-particles of dust are aspirated by lungs inside humans residing in cities. Some might feel it in the plastic micro particles of the water we drink and the food we eat. There's a shift. The magnetic forces of the North Pole are shifting from Canada towards Siberia and on the long term it might shift to the south of

planet Earth. Poles are flipping like a relay, some say it is a time of crisis. Something is emerging.

Inside "emergencies" you find "emerge," and tropical territories are well experienced at this. Between the imaginary lines of Capricorn, a circle line 23.5 degrees south of the middle of the planet, also known as the Equator; and Cancer, 23.5 degrees north, lies the tropics. The Tropics are regions that have been historically disenfranchised, undervalued, exploited and (over-)exoticized. Very often the tropics are considered cocktails of sun, sand, sea and crises where fertile grounds face troublesome and troubled realities that challenge what is possible and what is not, almost every day. But the Tropics is more than a physical and geographical space. In essence, the Tropics must be understood as metaphysical, and even psychological dispositions. A way of existing that is anchored in the meandering and swiveling of mundane notions of existence. With the dearth of state infrastructures and an abundance in stranger-than-fiction realities, Magical Hackerism has emerged as an attitude. The writings of Gabriel García Márquez from Colombia or Ben Okri from Nigeria, among others, have been recognized under the concept of Magical Realism because of the supranatural, fantasmatic twist they give to that thing called reality. But one could actually say that what Magical Realism does at its foundation is a process of hacking reality, and with it its cultures and technologies, its norms and attitudes, its banalities and politics, even its geographies and economies and its laws of gravities: making up the core of its physics as much as other mundane occurrences. It is from this perspective and the analysis of this modus operandi that the notion of Magical Hackerism emerges. How can the concept of digital sovereignty be manifested in the tropics?

DATA as Oil – Ways of Verticality and Exploitation

Imaginary lines were drawn on planet Earth. Meridians and Parallels (Latitudes and Longitudes) were composed in a way to intersect each other forming a grid, with a main intention to help humans understand and navigate the planet. This mesh of lines not only explored ways of understanding the planet but also of controlling and dominating it. One story would have it that in 1492 a man departed from Castile with three ships looking for Indian spices and, on October 12th of that same year, arrived in a land that he initially called the Indies of America. He set foot in what some knew by the name of Abya Yala

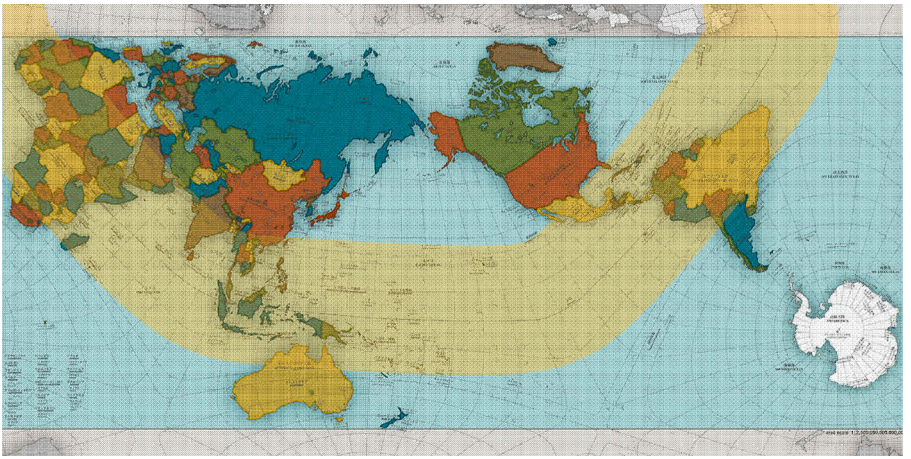

Fig. 1 This is an AuthaGraph map of the planet highlighting the tropical belt. This rectangular world map is made by equally dividing a spherical surface into 96 triangles, transferring it to a tetrahedron while maintaining areas proportions and unfolding it to be a rectangle. It is considered as one of the most precise maps displayed in a rectangular form because of its number of divisions (Stinson 2016).

and claimed the land for Spain – the rest is "history." Half a century later, in the year 2020, these navigational routes are drawn by submarine internet fiber-optic cables that go from the African continent to their former colonial empires and from Latin America to corporations based in Madrid (Bridle 2018a).

The Tropics have historically been regions exploited for minerals and resources. With the biggest reserves of bauxite, phosphate rock, and cobalt (*BBC News* 2019), among many others. Cobalt is a mineral used to produce lithium-ion batteries that power our phones, computers, digital devices and for some people, even cars as well.

Diverse territories are exploited for the extraction of resources, often leaving irreversible changes. In many cases, the benefits or profit from these exploitations aren't connected or linked to the communities and territories at their geographical positions. The coal extracted from the Cerrejón, one of the largest open-pit mines of the planet located in northern Colombia, is owned by foreign companies based in Australia, Switzerland and the UK and contributes to the electric energy produced for northern Germany by the enterprise Vattenfall (Vattenfall 2019).

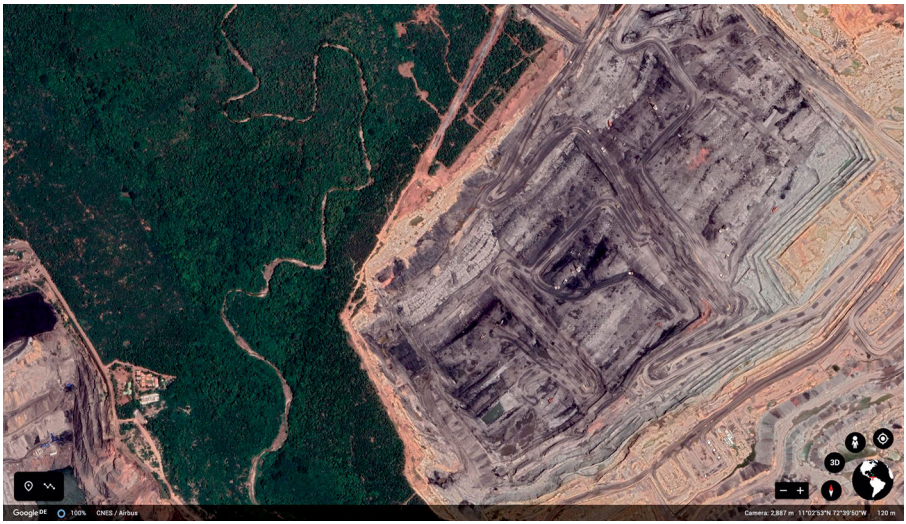

Fig. 2 Cerrejón open-pit coal mine in northern Colombia. Google Earth. CNES / Airbus.

In places such as Cerrejon, rivers are diverted and sucked from the soil to maintain the streams and flows of what we commonly refer to as "the cloud." In big metropolitan areas around the globe, from Berlin, NYC, Moscow and Seoul to Hanoi, Mumbai, São Paulo and Bogotá, thousands of devices are connected to the internet and communicate with each other. These devices, such as computers and telephones, but also now coffee machines and fridges (and whatever device that has the "smart" prefix), are not only speaking to each other but are also gathering huge amounts of data that reveal very detailed behavioral patterns and specific dynamics for specific profiles and personalities. The data extracted is very often exploited for advertising purposes with micro-targeted content that engages audiences, carries out the surveillance of citizens and potential "terrorists," and facilitates political manipulation (Naughton 2019).

For some years already, an idea has been growing: data is the new oil. Repeated as a mantra of the modern world, this phrase was possibly coined in 2006 by British Mathematician Clive Humby (Palmer 2006). "Data is just like crude. It's valuable, but if unrefined it cannot really be used. It has to be changed into gas, plastic, chemicals, etc. to create a valuable entity that drives profitable activity; so must data be broken down, analyzed for it to have value." This was

the departure point for the comparison made. Later on in May 2017, *The Economist* published an article called "The world's most valuable resource is no longer oil, but data." It began with:

> A new commodity spawns a lucrative, fast-growing industry, prompting anti-trust regulators to step in to restrain those who control its flow. A century ago, the resource in question was oil. Now similar concerns are being raised by the giants that deal in data, the oil of the digital era. (The Economist 2017)

It was clear at this point, we started relating to data in a similar way to which we relate to our environments. We started replicating the same dynamics and models around the idea of resources. We started reproducing verticalities. Whenever verticalities are involved, it is very likely there would be exploitative and extractivist relationships.

British writer, artist, journalist, and technologist, James Bridle points out in an article he titled "Data isn't the New Oil – It is the new nuclear power" that

> ... our thirst for data, like our thirst for oil, is historically imperialist and colonialist, and it's tightly tied to capitalist networks of exploitation. The same empires first occupied, then exploited, the natural reserves of their possessions, and the networks they created live on in the digital infrastructures of the present day: the information superhighway follows the networks of telegraph cables laid down to control old empires. (Bridle 2018b)

Bridle goes on to elaborate on the dangers of treating data as oil by pointing out the replication and extension of old models in what present themselves as new systems.

> The Empire has mostly rescinded territory, only to continue its operations and maintain its power in the form of networks. Data-driven regimes repeat the racist, sexist and oppressive policies of their antecedents because these biases and attitudes have been encoded into them at the root. (Bridle 2018b)

Where do these verticalities come from? Why are we extending and perpetuating verticalities in the way we relate with each other?

The Tropics nowadays represent places to exploit not only resources but also from which to extract new and valuable data, as Cambridge Analytica did in Kenya's presidential elections in 2013 (as a test run) and 2017 (with now tried and true methods) (Moore 2018). Satellite imagery, today, and its vertical line of sight is data used in combination with algorithms for the "old" forms of exploitation of oil and other natural resources (Ali 2019). With rising demand for electronic appliances and lithium-based batteries, the transition of the planet to green energies might keep inflicting irreversible wounds on the Tropics.

The Greek roots of Tropics is Tropikós – It means to Turn

When I think of the Tropikós as a mindset, I recognize the ability to develop elastic and symbiotic ways of relating with diverse environments, dance with their pulses and turn around their energies. It isn't about mere control and dominance over the environment. It is more about revolving around the questions of what we can do with the conditions we face in our realities and what ways can we find to turn them around. This understanding of tropical resilience goes beyond the idea of resistance and is closer to the idea of re-existance, as Argentinian theorist Walter Mignolo proposes. It is more about elasticity and flow as key aspects redefining the understandings of these pulses.

Many cultures in the Tropics and Subtropics have developed diverse strategies to respond to their environments in symbiotic ways. Floating villages made out of reed in the Titicaca Lake between Bolivia and Perú, as well as in Iraq; Living root bridges in India; Mountain Terraces in Perú and Subak agrarian systems in Bali; these are some of the various examples of tropical resilience and endemic knowledges.

Designer, activist and academic, Julia Watson has gathered a collection of these cases in her book Lo-TEK: Design by Radical Indigenism (Watson 2020), in which she explores nature-based technologies for climate-resilient design. With these examples, Watson proposes to reframe our understanding of what smart is and look at natural intelligences already present in our environments. Instead of approaching them with an intention to control them, we could approach them on a same level, trying to provoke a symbiosis.

My interest in (and the occurrence of) such tactical, resilient or elastic forms of knowledges, designs and technologies is not limited to traditional indigenous knowledge. It also includes expressions

found in grassroots popular culture of the tropics (not to be mistaken with folk culture nor pop culture). The grassroots popular culture of the tropics is guided by other aesthetics (Duque et. al. n.d.) and other relationships to objects, devices and technologies (García Sossa 2015): Guided by similar principles of symbiotic relationships with their environments as the ones previously mentioned, the grassroots tropical culture develops other ways of relating to their artificial environments. These endemic and situated knowledges are based on the "misuse" or re-appropriation of technologies, re-scripting instruction manuals for unintended purposes that turn situations around and develop scenarios otherwise unthought of in the Global North. Various forms of such Tropical Hacking or Magical Hackerism have been the focus of my design, research and art practice, and multiple instances can be found in contexts such as the Brazilian Jeitinho (Wikipedia 2021a) and Gambiarra (Fred 2011), the Latin American Rebusque and Hechiza and the Indian Jugaad (Wikipedia 2021b), among many others. Workarounds that understand the inputs and forces of our digital environments and are elastic enough to turn them around and develop symbiotic relationships with them: This is the Tropikós as a mindset.

Revealing while Hiding: The Tropikós and GeoFilters

The Tropikós mindset guides the principles behind the maneuvers or ways of GeoFilters, a research project and installation developed for the exhibition "Practicing Sovereignty – Means of Digital Involvement." GeoFilters is an experimental reaction to and investigation of the environmental situation in Colombia and other tropical territories such as Brazil, India and the Philippines. These were the territories with the highest reported killings related to environmental activism in 2018 according to Global Witness, an organization investigating the links between natural resources, conflict and corruption (Global Witness 2019). As of today, over 265 social leaders and environmental activists have been systematically murdered in Colombia since 2016.

GeoFilters take the form of a two-screen multichannel interactive installation. On one screen, an animation displays a satellite view of an endangered territory, and on the other a "digital mirror" is displayed with the help of a camera. When a person stands in front of the installation, their faces are covered by face filters with gigantic open mine holes placed on their cheeks or forehead. GeoFilters is a

collection of face filters generated using the texture of satellite imagery of endangered territories. The images depict the geo-position of an ecosystem under social and environmental threat.

Vertical sight has been historically used as a means control. From observation decks to drones, one could say a view from the top implies an exercise of power over someone or a territory. Today, high resolution Earth Imagery has enabled scientists and environmentalists to monitor and count wildlife populations as well as to detect deforestation or illegal mining with speed and agility (Conniff 2017). This has been useful for monitoring mammal populations in Alaska or Iceland. The high definition quality of these images are not always a given for certain regions in the tropics. More often than not, satellite imagery of mines and forests is pixelated or blurred, remaining quite opaque. Google Earth argues these are regions of less interest or priority, according to the company when asked by Brendan Byrne and Dhruv Mehrotra about an outdated mapping of a military station in Nevada, USA (Mehrotra and Byrne 2018). But are they truly less interesting or less of a priority? To whom?

Fig. 3 – 4 GeoFilters multichannel installation: screen on the left showing satellite imagery of endangered territory in the tropics, screen on the right generating a face filter with the texture of the environment. Photos: Alexa Beckmann.

Fig. 5 Satellite Imagery of an open mine in Colombia – Not prioritized territories.

A departure point for GeoFilters is the exploitation of resources in tropical territories, such as the extractivist projects taking place in Colombia at present. From mining, oil extraction and logging to monoculture farming and cattle (Wasley et al. 2019), these activities have shown to be tightly connected to irreversible environmental changes. Taking both legal and illegal forms, dangers to the environment are sometimes recognized by the Colombian government and public opinion, but more often not. Because of a centralized system and a wide range of difficult-to-access areas, many territories in Colombia are isolated and obscured from the national and international view. With the promise of development and progress, both legal and illegal mining are carried out in ecosystems with small communities. Because of this scale, sometimes it can be troublesome to oppose these activities and projects. Opposing a project of illegal mining implies not only risking one's livelihood but also life – and denounced in doing so for "being against progress," like Colombian environmental activist Francia Márquez. The isolation or disconnection of these territories makes it difficult for them to be elevated in public debate to a national, international or planetary level. In the mainstream, not so many are even aware of the situation.

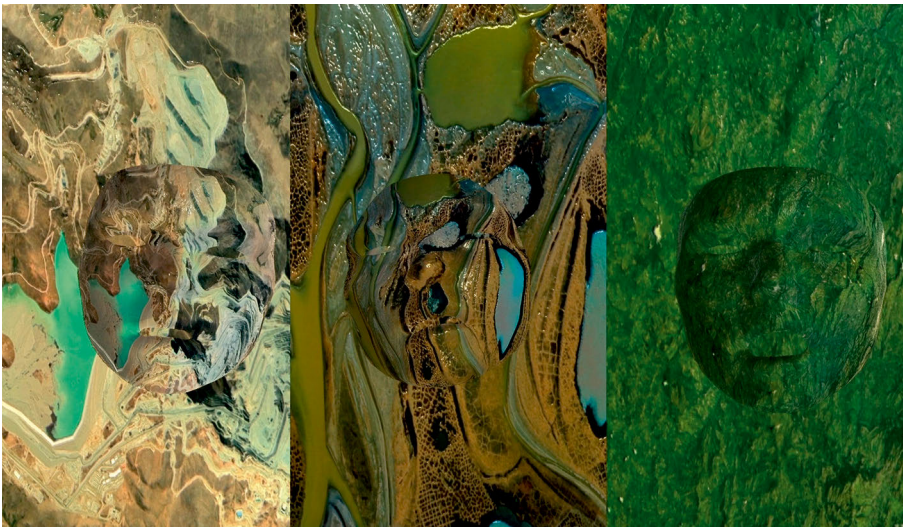

Fig. 6 GeoFilters: Face filters generated with textures of satellite imagery of environmentally endangered territories.

GeoFilters explores a at its core the idea of what it is to share one's data and geolocation in the age of information and surveillance capitalism with a purpose (Zuboff 2018). GeoFilters explores ways of revealing while hiding. While devices already collect our geoposition, there's the possibility one could re-position these realities and bring them closer to the eyes of a broader public and into the debate on a planetary level. Whenever a national government is reluctant to take action on these threats to territories and life, there could be a possibility to denounce and pass information on to a planetary society, while safeguarding one's individual private identity – by covering one's face. In 2019, when Brazil's Amazon rainforest burned for weeks, people across the entire planet, regardless of their nationality, mobilized to demand action from the Brazilian government of Jair Bolsonaro. When the Amazon rainforest burns, it not only concerns and affects Brazil, or even just South America, but it also has manifestations on the climate in Norway, Canada and Australia. To whom does territory belong?

There's a need to understand territories beyond private property. Rather, we must see them more in terms of fertile grounds for life itself: both for human communities and natural and artificial environments, on a planetary scale. The exploitation of resources in territories has costs for environmental sustainability and the lives of

those determined to protect it. In cosmologies in the Tropics, such as *Sumak Kawsay* from the South American Andes mountain range, there's no separation between humans and nature, nor communities from territories. Often translated as "living well," *Sumak Kawsay* embraces the interdependence of all living and non-living beings in the planet. GeoFilters aims to manifest these principles through a *Planetary Embodiment*. When standing in front of the installation and seeing one's own face covered with scarified textures, some ask themselves: *Would I exploit my own body in this way?* If one wouldn't or couldn't separate planet from body, would one mine their own arm or drill their own face looking for coal or oil?

By drawing parallels between data exploitation and territory exploitation, GeoFilters reflects on the interconnection of endangered territories in the planet, as digital and physical meshes and layers overlap. There is a possibility to explore ways of re-appropriating one's own data – to reclaim digital and physical spaces. GeoFilters explores ways in which the vast mesh of sensors and data of the "planetary sensorium" can be in dialogue with the local specificities of each territory.

This project doesn't intend to focus on providing answers but rather to respond and react. To develop and trigger responses. It intends to reflect on the frictions, energies and pulses that compose the worlds we live in and how one could potentially turn them into symbiotic relationships beyond domination. It is true that with GeoFilters the implications of devices being specifically tracked in their geoposition are still there. It doesn't change the fact that there's always a risk of becoming a target for extractivism by certain groups. What this project is more interested in is to complexify our debate on data and privacy and acknowledge it. It is much more complex than the question of keeping individual data privacy or not. Especially when the idea of individual privacy itself gets more nebulous in tropical territories with all the nuances that come with traditions of collectivism and cooperatives, big families in tight spaces, beds and food for four people where a fifth can fit, too, and maternal policies of no-locking rooms, i.e., controlling moms can barge in without knocking. What one could emphasize here is that there are many complexities in the grey in-between spaces around the data privacy discussion and that there are no universal solutions to these issues. The responses are multiple. From a similar perspective, James Bridle suggests, as

well, "maneuvers" as a shift or alternative to computational thinking – thinking like a machine (2018b). Solutionism prevents us – more often than not – from reflecting on the many implications engendered by the paths we take. In this way, considering a framing of responses and maneuvers could help us recognize the directionality in the ways we "progress" and actively direct and re-direct where we would like or prefer to head to.

Situated Responses Breaking Binaries

When we think of sovereignty in the Tropics, we must think of the tools, responses and maneuvers for world making. With an often-absent state, and a nebulous idea of citizenship, demanding rights through top-down policy making might sometimes feel too fictional in the Tropics. How can one demand something from a state that has never been there before? This might be a reminder that the mechanisms performed in the Global North don't apply the same way in the Tropics. And as the idea of privacy might be different in this region, the responses to this idea are very diverse as well. Art curator and consultant on ecological transition and social inclusion, Nataša Petrešin-Bachelez highlights the importance of conceiving various responses in dialogue with the local specificities of a territory:

> Rather than trying to find global solutions for some indefinite future, or projecting a possible perfect balance, resilient thinking focuses on the diversity of practical solutions for a specific locality, and on the cooperation and creativity of everyone involved in a community or society. (Petrešin-Bachelez 2017)

Similarly, as the tropical resilience exposed above within the Tropikós as a mindset, "The Turns" are responding to the conditions of an environment and are in a constant interplanetary dialogue. As someone that grew up in the Tropics, I often learned to develop my own workarounds – to provoke direct incidences in various realities and worlds. One could consider these responses beyond a set of tools and formulas, but more like a behavioral system, driven by reaction and response – meaning, ultimately, it is not important what one actually does, but more that one is *capable of coming up with something*.

So, the discussion is not limited to having privacy or not. What is critical in our realities are the verticalities present in them. Historically,

many of the apparatuses, technologies and systems we live in have chosen to be opaque. These have become black boxes, in which, for a great portion of people, it is hard to grasp or understand how they work and what lies behind them. If our systems are opaque and often function in extractivist ways, it is understandable that one chooses as an individual to be opaque, so one doesn't become a target. The attempt with GeoFilters is to reframe those systems rooted in the question: What could we do if we purposely wished to share our geolocation? How could we turn that situation into a response to the complexities of our local realities and reverse the dominant logic by making it a strategy for visibility? In this case, understand how engagement algorithms in social media work (Phillips 2020) and take advantage of the way content is prioritized in feeds when they use AR face filters, to make visible these denunciations. The Slovakian researcher and theorist Lukáš Likavčan, elaborates in his practice on philosophy of technology and political ecology. He emphasizes that "we need a framework of situatedness that puts every site on Earth on an equal footing: working towards cosmological multiplicity under a common frame of reference" (Likavčan 2020). Western Globalism, as he describes in his article "Searching the Planetary in every grain of sand," is a dominating form of cosmology and there are many other cosmologies taking place on the planet at the same time. To stop understanding our planet in terms of binaries, more situated responses are needed to complexify our realities.

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