

Planetary-scale computation, which supports the technological mediation of our daily lives, has numerous environmental, economic and political implications, of which we are not always aware. Energy grids and mineral sourcing, underground cloud infrastructures, or interfaces designed as motor or sensory extensions dissolve into countless data, algorithms, and devices that assist us daily.

This leaflet works as an introductory guide to the geopolitical consequences of these infrastructures. It gathers artistic projects that comment on the topic, as well as excerpts from authors, such as James Bridle, Metahaven or Benjamin Bratton, who address the geopolitical implications of planetary-scale computing.

ENVIRONMENTAL

Electronics have always produced waste, but the quantity and speed of discard has increased rapidly in recent years.

Who is to blame? Consumers certainly have a role to play in the increase of e-waste — they're buying the goods, after all. But manufacturers have given people fewer and fewer viable ways to keep older electronics functioning effectively. In the process, profits from device sales are way up, along with the satisfaction of these companies' shareholders. It's an impasse, one group pointing to the other as the ultimate source of electronic dross.

Governments could give some form of tax break or rebate for companies that effectively process old equipment. And companies could reuse recovered parts from discarded goods in newer systems.¹

¹ AHMED SIYED, THE GLOBAL COST OF ELECTRONIC WASTE, 2016.

A

E-WASTE

Planetary-scale computation takes different forms at different scales: energy grids and mineral sourcing; chthonic cloud infrastructure; urban software and public service privatization; massive universal addressing systems; interfaces drawn by the augmentation of the hand, of the eye, or dissolved into objects users both overdetermined by self-quantification and exploded by the arrival of legions of nonhuman users (sensors, cars, robots).

My interest in the geopolitics of planetary-scale computation focuses less on issues of personal privacy and state surveillance than on how it distorts and deforms traditional Westphalian modes of political geography, jurisdiction, and sovereignty, and produces new territories in its image.

Looking toward the Black Stack, we observe that new forms of governmentality arise through new capacities to tax flows (at ports, at gates, on property, on income, on attention, on clicks, on movement, on electrons, on carbon, and so forth). It is not at all clear whether, in the long run, Cloud platforms will overwhelm state control on such flows, or whether states will continue to evolve into Cloud platforms absorbing the displaced functions back into themselves or whether both will split or rotate diagonally to one another, or how deeply what we may now recognize as the surveillance state (US, China, and so forth) will become a universal solvent of compulsory transparency and/or a cosmically opaque megastructure of absolute paranoia, or all of the above, or none of the above.²

² BENJAMIN BRATTON, THE BLACK STACK, 2014.

Insofar as the cloud's software services use the shared internet, they can be considered applications run on the network.

Super-jurisdiction means that the law of one country can, through various forms of cooperation and association implied by server locations and network connections, be extended into and enacted in another. The US, as a result of its unique position in managing the internet's core, also has jurisdiction over all so-called top level domains, no matter where they are hosted and by whom. All top-level domain names (dot-com, dot-org, dot-net, etc.) must be registered through VeriSign, a Virginia-based company.

(...) all data stored by US companies (or their subsidiaries) in non-US data centers falls under the jurisdiction of the USA Patriot Act, an anti-terrorism law introduced in 2001.³

Using its jurisdiction over the domain name registry, in 2012 the DOJ seized Bodog.com, a gambling website operated from Canada. A US Customs Enforcement spokesperson confirmed to Wired that the US had in a similar manner seized 750 different domain names of sites it believed committed intellectual property theft. Michael Geist, an internet law professor at the University of Ottawa, observes that, indeed, "All Your internets Belong to US".³

³ METAHAVEN, CAPTIVES OF THE CLOUD, 2012.

B

DATA SOVEREIGNTY

Empire has mostly rescinded territory, only to continue its operation at the level of infrastructure, maintaining its power in the form of the network.⁴

POLITICAL

Our thirst for data, like our thirst for oil, is historically imperialist and colonialist, and tightly tied to capitalist networks of exploitation. The most successful empires have always promulgated themselves through a selective visibility: that of the subaltern to the centre.

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 to control old empires.

While the fastest data routes from West Africa to the world still run through London, so the British-Dutch multinational Shell continues to exploit the oil of the Nigerian delta. The subsea cables girding South America are owned by corporations based in Madrid, even as countries there struggle to control their own oil profits. Fibre-optic connections funnel financial transactions by way of offshore territories quietly retained through periods of decolonisation.

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.

In the present, the extraction, refinement, and use of data/oil pollutes the ground and air. It spills. It leaches into everything. It gets into the ground water of our social relationships and it poisons them. It

enforces computational thinking upon us, driving the deep divisions in society caused by misbegotten classification, fundamentalism and populism, and accelerating inequality. It sustains and nourishes uneven power relationships: in most of our interactions with power, data is not something that is freely given but forcibly extracted – or impelled in moments of panic, like a stressed cuttlefish attempting to cloak itself from a predator.

We have traced the ways in which computational thinking, evolved with the help of the machines, developed to build the atomic bomb, and how the architecture of contemporary processing and networking was forged in the crucible of the Manhattan Project. We have also seen the ways in which data leaks and breaches: the critical excursions and chain reactions that lead to privacy meltdowns and the rhizomatic mushroom cloud. These analogies are not mere speculations: they are the inherent and totalising effects of our social and engineering choices.⁴

⁴ JAMES BRIDLE, NEW DARK AGE: TECHNOLOGY AND THE END OF THE FUTURE, 2018.

C

DIGITAL COLONIALISM

This leaflet is a brief guide to the webpage [Infrastructures Explorer](#), which addresses the infrastructures of consumer electronic devices, data centers and clouds or communications networks, and some of their environmental, economic, and political implications. By exploring the globe according to three geographies (environmental, economic, and political), the website allows us to learn facts on electronic waste, data sovereignty and digital colonialism.

Both [Beyond Your 5GHz WiFi Signal](#) leaflet and [Infrastructures Explorer](#) web page are part of the project [Networked Infrastructures](#), which seeks to establish a cause-effect relationship between our role as consumers and the resulting environmental, economic, and political implications.

Visit the website at 2021.fbaul-dcnm.pt/matilde_reis/infrastructures-explorer/.

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ONE OF ITS THREE LARGE DATA CENTERS RIGHT NEXT TO THE TV TOWER THE SITE SPECIFIC INSTALLATION 12V IS TOTALLY INDEPENDENT FROM POWERLINES OR INTERNET CONNECTION. THEIR CONNECTION CANNOT BE TRACED OR MONITORED BY 3RD PARTIES ON THE INTERNET. IN ITS RETRO APPEARANCE, AS A BUILDING FOR LONG RANGE TV BROADCAST BEFORE THE INTERNET THE TOWER BECOMES A HISTORIC SCULPTURE IN ITSELF. (BY ARAM BARTHOLL, 2017)

A STANDARD HOME ROUTER IS HANGING IN A PARASITICAL WAY RIGHT NEXT TO COMMERCIAL MOBILE PHONE ANTENNAS FROM THE MÜNSTER TV TOWER. VISITORS ARE INVITED TO CONNECT TO THIS ROUTER WITH THEIR PHONES. (...) A THERMO GENERATOR SITTING ON A SMALL CAMPING STOVE NEXT TO THE PLAYGROUND PROVIDES 12 VOLT ELECTRICITY TO POWER THE ROUTER WHICH IS CONNECTED THROUGH A 70 METER LONG ORANGE CABLE. WHILE THE TELEKOM MAINTAINS



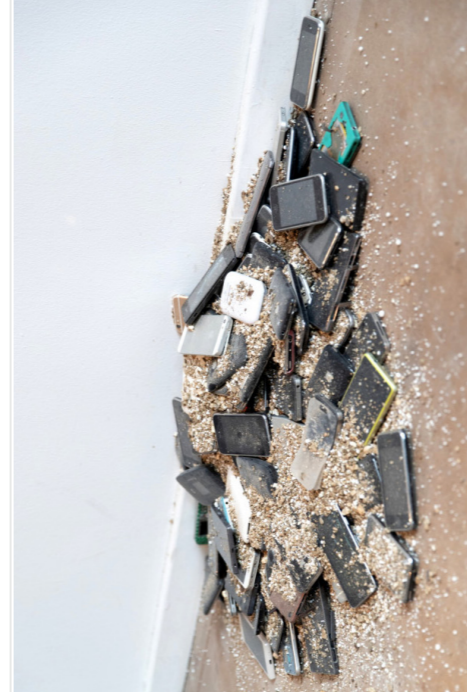
Data is used to map and classify the subject of imperialist intention, just as the subjects of empires were forced to register and name themselves according to the dictates of their masters.⁴



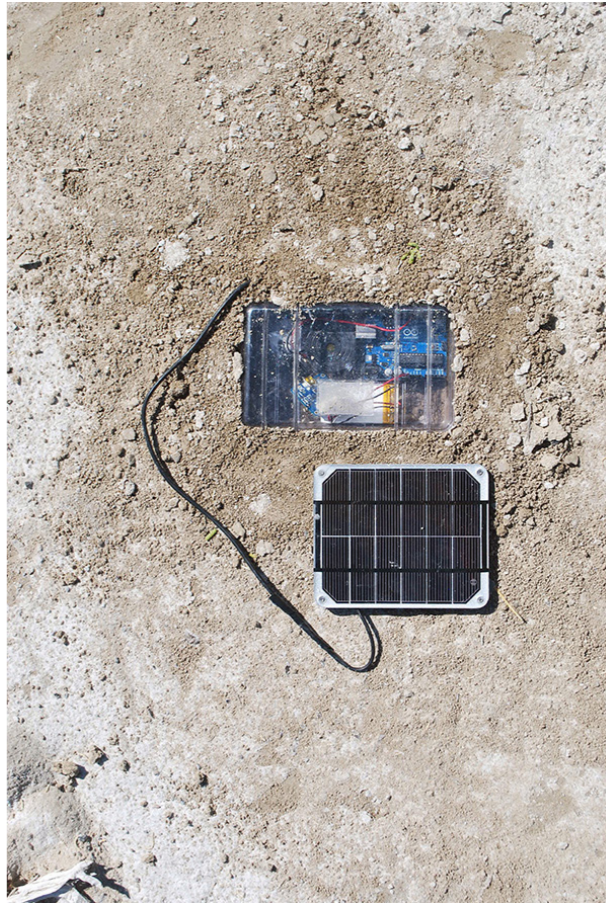
BLACK MARKET IS A TRADE GROUND OUTSIDE OF LEGAL FRAMEWORKS. A TENTACULAR WEB OF VIRTUAL COMMUNICATIONS AND EXCHANGE NETWORKS. MOLECULAR AND RHIZOMATIC – IT CAN SCATTER AND CONVEY IN INFINITE FORMATIONS, PASSING CONSTANTLY BETWEEN THE EPHEMERAL AND THE PHYSICAL. ITS MODULAR, ORGANIC AND BIOTECHNICAL CORPUS SHOWS THE GHOST BEHIND INSTITUTIONS AND POLITICAL ETHICS. (BY SKUFCA, 2019)

In the cloud, there is no more principled separation between the hosting of data, software, and client-side tools through which the data is handled and experienced.³

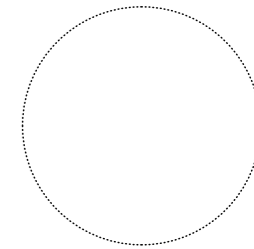
Manufacturers have a role to play here, too: for example, by assisting in the creation of e-waste recycling centers in developing countries rather than using them as dumping sites.¹



COMPRISED OF CA. 50 TO BE RECYCLED SMART PHONES ARRANGED TO A PILE, WITH A SPECIAL FIRE REPELLENT ARTIFICIAL GRAVEL. RECYCLING COMPANIES ARE NOT ALLOWED TO GIVE THEM OUT BECAUSE OF THE PRIVATE USER DATA WHICH IS STILL STORED ON THEM. (BY ARAM BARTHOLL, 2019)



ARDUINO POWERED BY SOLAR PANEL PLAYING A MESSAGE IN MORSE CODE ON A LOOP, IN THE DESERT WHERE NO ONE CAN FIND IT. THE DEVICE RECALLS THE TELLURIAN ORIGINS OF ALL THE MINERALS USED IN ITS CONSTRUCTION, IN THE FORM OF AN ABSURD PERFORMANCE. (BY BURREINGTON, 2011)



BEYOND YOUR 5 GHZ

WIFI SIGNAL