

“Hyperminer_Extracted Earth”

Frederik De Wilde, interviewed by Daphne Dragona

DD: What is your work “[Hyperminer_Extracted Earth](#)” about? Can you tell us a few words about the concept and how it is presented in space?

FDW: “Hyperminer_Extracted Earth” explores the hyper extraction of natural and commodifiable, valuable resources using advanced mining acceleration technologies by the means of hyperspectral imaging, artificial intelligence and data-driven decision making.

The work, which is digital and data-driven, presents how deposits are allocated, extracted and used to create a new synthetic geode, an extracted earth, a composite of the most valuable natural resources found.

The installation is a triptych. On the first screen we see a CubeSat, a small cubical satellite, orbiting earth searching for deposits with hyperspectral scanning technologies. On the second screen, a kind of speculative machine learning algorithm is trying to find these natural deposits. On the last screen, the rare, found earth materials are recombined into some form of geode.

Technically, the work is made in TouchDesigner, a fantastic realtime software which allows you to dive into object oriented programming and scripting to make complex interactive installations possible. There is also interaction and synchronicity between image and sound. More specifically, there’s an interplay between the three screens and the underlying data and algorithms. It endlessly rewires and permutates the audiovisual experience.

DD: This is a project about the future of mining and its development thanks to Artificial Intelligence. Reading about the topic, I realized that AI is used or will be used at different stages. For instance, it helps at locating the resources but it also involves infrastructures like smart vehicles and drillers operating on the ground or in the deep ocean. From your research do you know of specific countries using these smart mining techniques, and, respectively, do you know of territories that are or might be affected in the near future?

FDW: Actually Belgium, my native country, is one of the world's leaders in dredging. Currently there is a highly contested project going on. There is a globally active Belgian group called DEMA¹ specializing not only on dredging but also on deep sea mining. At this moment, their 24-ton seabed mining robot is being tested on the Pacific Ocean floor at around 4 km below sea level. It's mining manganese nodules. These nodules contain polymetals like cobalt, nickel and specific alloys.² The ocean floor in some parts of the world is full of these potato-like nodules. They are scattered around the ocean surface and they could power the second generation of lithium batteries. They are, obviously, very valuable. What is contested about this intervention, is that we don't know how it will affect the deep sea ecologies. These nodules are being located not only by submarines but also through hyper-spectral imaging techniques. This probably means that they are partly autonomous. There must be some AI technology embedded – like object recognition. Once these robots, which weigh around 24 tons, are placed there, you lose contact with the sea. It has to have some level of autonomy to be able to find these nodules by itself and recognize them. This infrastructure does not gently pick up the nodules but basically vacuum cleans the ocean floor and scrapes it off. Many scientists are studying these infrastructures with excitement but also with the eyes of Argus. What scares me is the fact that such operations refer to Global Sea Mineral Resources and this suggests that they do not want to limit themselves to the small testing area currently allocated, but plan to make it a global venture. I also find it interesting that there is a risk in the autonomy of these technologies. The moment that the system loses contact is also the moment that the project will probably be stopped. In a way, technologies themselves become, sometimes, their own saboteurs. Intelligence or automation can lead to its own downfall and flaunt the project. This is paradoxical and ironic but sometimes true.

Belgium has a long history of dredging and mining and this is also why I became interested in this new era of mining and the technologies surrounding it. I have been exploring the “Blackest-Black” from the beginning. When you talk about something blacker-than-black, you talk about carbon. When you talk about carbon, you talk about coal and fossil fuels. There is this strong correlation between that project and the one I do now. There is a strong link from a content-, subject- and thematic perspective.

DD: I see the project as a critique to techno solutionism. As the scarcity of resources (which, to a great extent, are being used for infrastructures and AI itself) has to be faced, Artificial Intelligence comes in to do the work faster, more efficiently and supposedly with a smaller environmental footprint. Technology, therefore, is meant to solve a problem that it created. What are your thoughts on that?

FDW: In modernism, it was believed that technology would bring prospects. In post-modernism we stopped believing in the big narrative and everything became fragmented and hyper individualized. We currently live in a time of renewed promises and techno solutionism. We think that due to AI, Big Data and data-driven approaches, quantification and assetification we can bring these fragments back together in a bigger narrative that solves all our problems. I profoundly question this belief because I don't think we can solve everything with technology. I tend to think that the corporate world is bringing forth this techno solutionism and data driven approaches (e.g. talking about minimizing impact on the environment or optimizing structures, minimizing energy consumption etc.) for a reason. It is sometimes used as an excuse and conceals critical data. Take the example of the 3D printer. You use minimal resources but you consume a lot of energy to produce something with a still relatively high production failure rate. The same applies to NFTs and the Blockchain technology. Level 1 of the Blockchain tech had a devastating impact on the environment. Level 2 has already a lower carbon footprint, but still too much.

In conclusion; I am trying to raise critical questions through my work and research and to create an experience starts from an individual process and evolves into something that can be shared with the audience.

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1. <https://www.deme-group.com>
<https://www.deme-group.com/news/deep-seabed-mining-robot-patania-ii-successfully-reconnected-mission-continues>
 2. <https://blue-nodules.eu/partner/global-sea-mineral-resources-nv/>