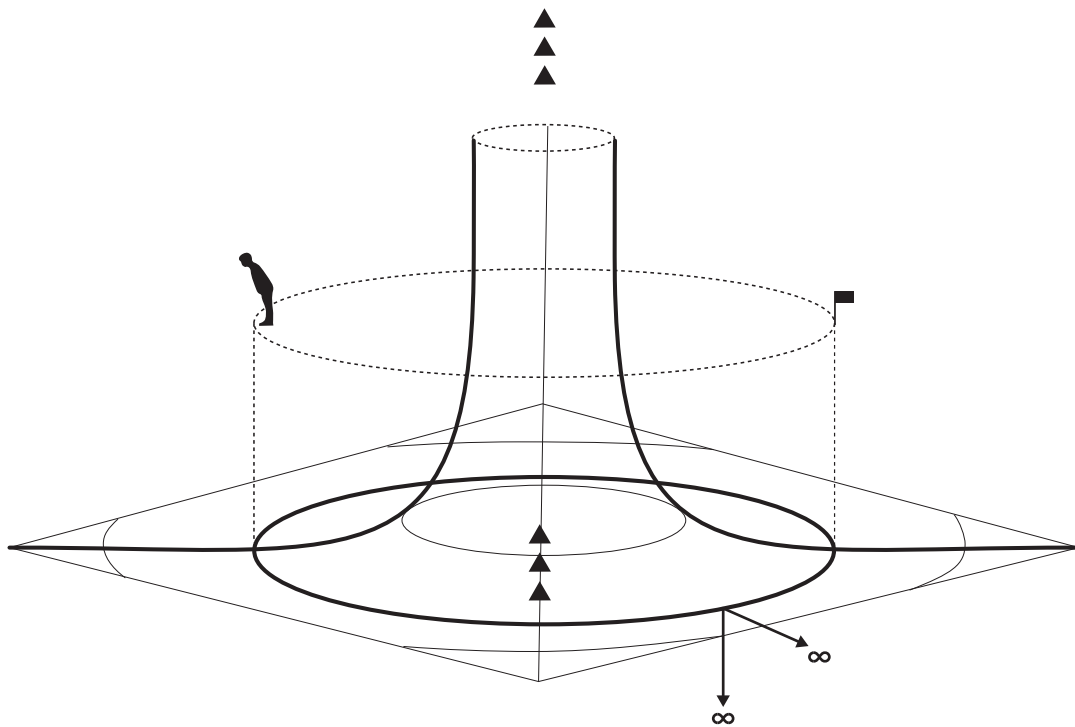


NEW EXTRACTIVISM

ASSEMBLAGE OF CONCEPTS AND ALLEGORIES

WWW.EXTRACTIVISM.WORK



VLADAN JOLER (2020)

GUIDE

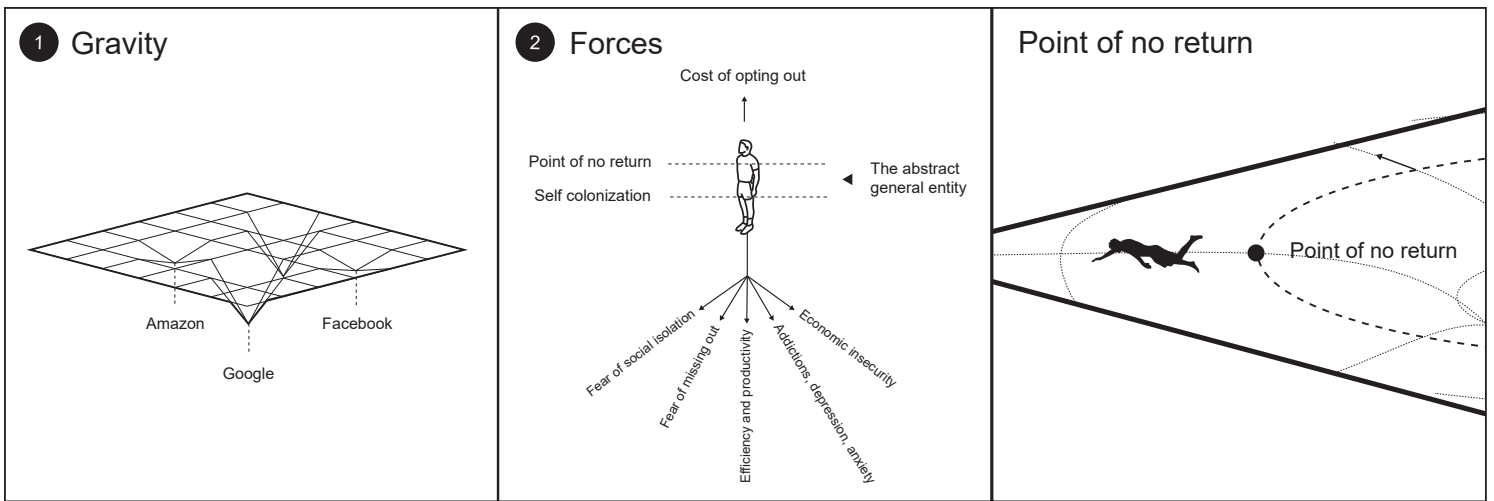
This is an assemblage—an assemblage of concepts and allegories.

The word “assemblage” is usually understood as a collection or gathering of things or people, a machine or object made of pieces fitted together, or a work of art made by grouping together found or unrelated objects. This map and accompanying footnotes are precisely that: one big messy assemblage of different concepts and ideas, assembled into one semi-coherent picture or let us say a map, a world view.

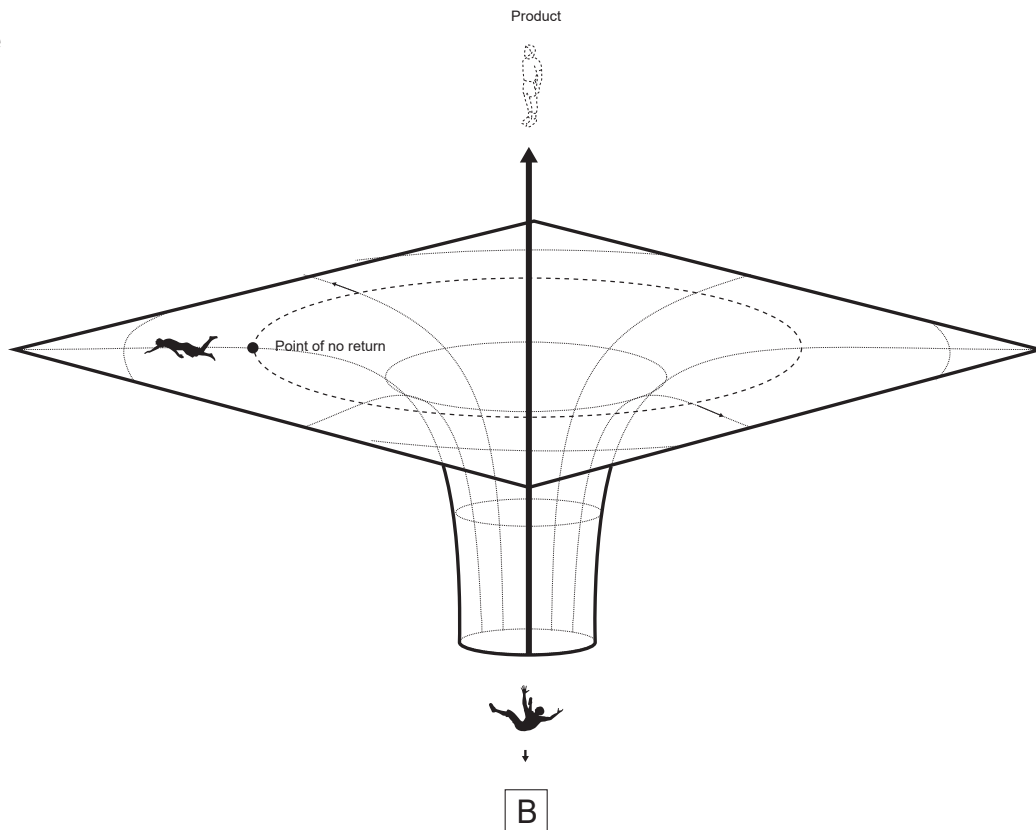
The concepts presented are mostly represented here visually in the form of allegories. Dictionaries define allegory as a story, poem, or picture that can be interpreted to reveal a hidden meaning, typically a moral or political one. All of these allegories and concepts together, joined in the form of an assemblage, create together a blueprint of a machine-like superstructure, or a super allegory. In that sense, what we have here is an almost fractal allegorical structure—an allegory within an allegory within an allegory.

This work takes three forms that hardly can function independently.

Map - that attempts to present the superstructure or overall view;
Guide - that deals with the individual concepts and allegories;
Footnotes - textual descriptions of the presented concepts.



3 Black hole



1 Gravity

French artist Louise Drulhe¹ introduces the notion of gravity in thinking about the topography of the internet. Like Einstein's theory of relativity, massive objects curve the space and time of this virtual universe proportionally to their weight, defined by the number of their users and content, curve the space and time of this virtual universe. So we can think of massive monopolies and conglomerates such as Google and Facebook as enormous black holes that, with their gravity, create a field so intense that it attracts and swallows the content and users.

2 Forces

We can claim that many other potential vectors and social forces contribute to that gravitational force. The fear of social isolation and missing out; economic and professional insecurity; unrealistic expectations of efficiency and productivity in the adapt-or-die environment; tailored addictions, depression and anxieties; reputation economy systems. These are just some of the other vectors that constitute social forces that keep us, with or without our wish, attached to those platforms. Opting out has become a privilege that requires a supernatural human being who can economically afford to opt-out and exist at the level of nirvana-like strength and peace to overcome all of those challenges. "The social cost of opting out has become so high that opting out is essentially a fantasy" (Brunton and Nissenbaum).²

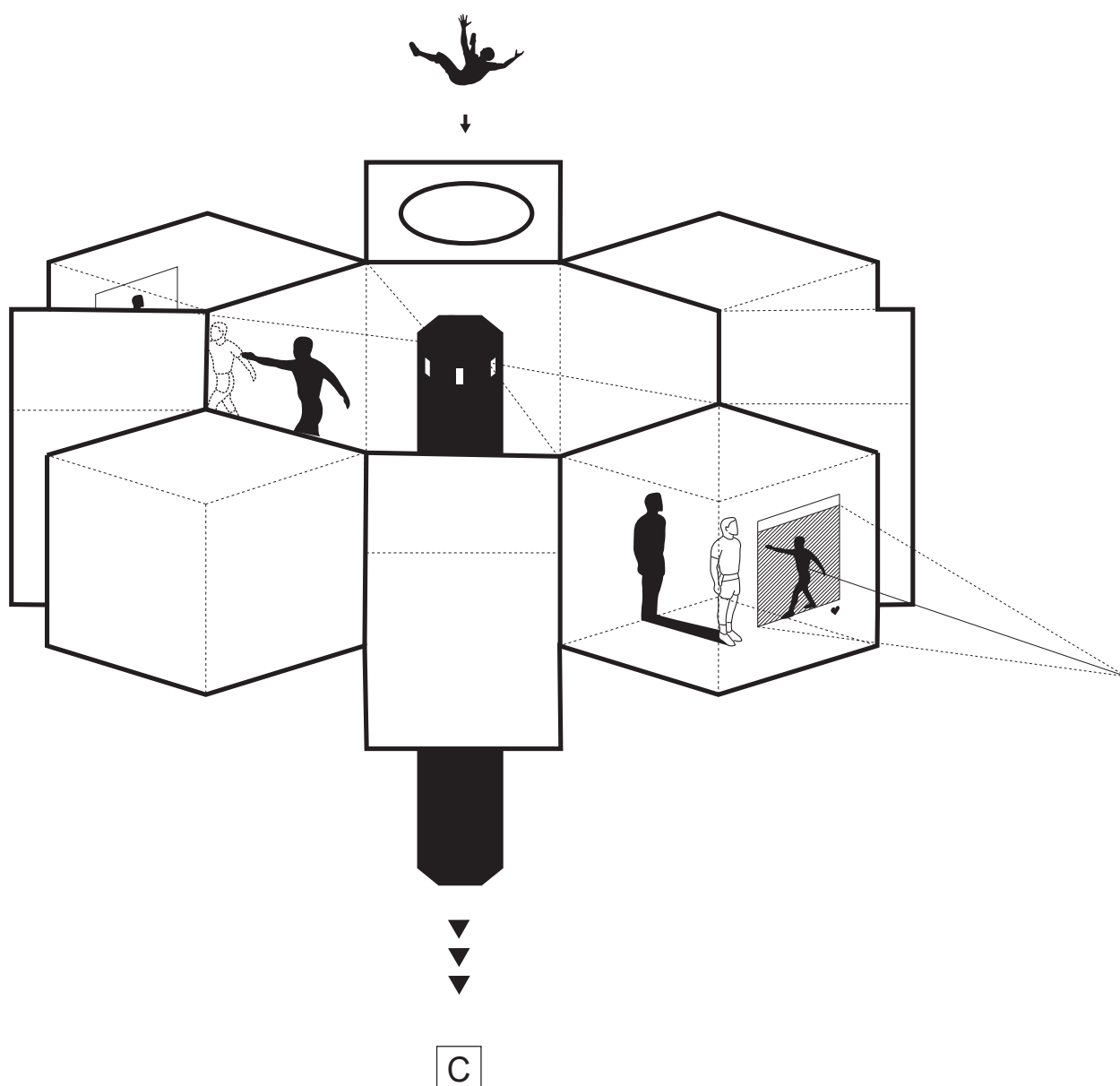
3 Black holes

Our imaginary hero, or what Federico Campana will call the abstract general entity (AGE),³ is swimming against one of those platform's gravitational force. As s/he floats along, imperceptibly, the stream gets faster and faster even if they can't see the hole yet. They could swim to safety until, without even noticing it, they cross the point of no return. As they glide towards the singularity defined by the mass of these giants, users and content pass beyond the event horizon, the imaginary boundary in time/space, beyond which there is no return to the outer part of this universe. The event horizon defines the line after which the social and economic price of leaving those platforms is becoming too high. No matter how fast they try to swim now, the stream will pull them towards the center of the black hole. Without even noticing, this story's actor is now falling towards the hole into a new allegory—the cave.

1. Louise Drulhe, *Critical Atlas of Internet*, <https://louisedrulhe.fr/internet-atlas/>

2. Finn Brunton and Helen Nissenbaum, *Obfuscation: A User's Guide for Privacy and Protest* (2015)

3. "The crumbling of subjectivity under Technic is accompanied by the emergence of a new existential figure: the abstract general entity (AGE)" Federico Campana, *Technic and Magic: The Reconstruction of Reality* (2018)



4 Allegory of the cave

What takes place at the bottom of this metaphorical black hole can be described through Plato's allegory of the cave.⁴ Plato describes a group of people who spend their entire life chained to cave walls looking at a blank wall. These people are watching the shadows of real objects projected on this wall, giving them names and meanings. In our story, the script and directing of this performance of shadows are entrusted to human-algorithmic machines that regulate, filter, censor and moderate the projected content on the walls of the cave. The existing elements and content that exist outside this cave and horizon of events create an information flow, a theatre of shadows. Or, what Guy Debord⁵ will describe as: "an immense accumulation of spectacles consisting of images, sounds, text, emotions and meanings. All that once was directly lived has become a mere representation".

5 Platoon

However, this is not a single play, but a multitude of simultaneous and different performances. The gravity of these techno giants hold billions of users/workers/products at the bottom of those caves. Each user detained in their own cave is exposed to a designed play adapted only to them. This self-centered personal space is filled with images and meanings selected by algorithms partly with respect to its affective and cognitive reactions. The user is in a specific closed circle, communicating with oneself in a particular form of self-stimulation and exposed to a constant flow of spectacle. Therefore, this cave or prison cell is a place of pleasure from which, as in Plato's cave, the prisoner does not even have the will to come out.

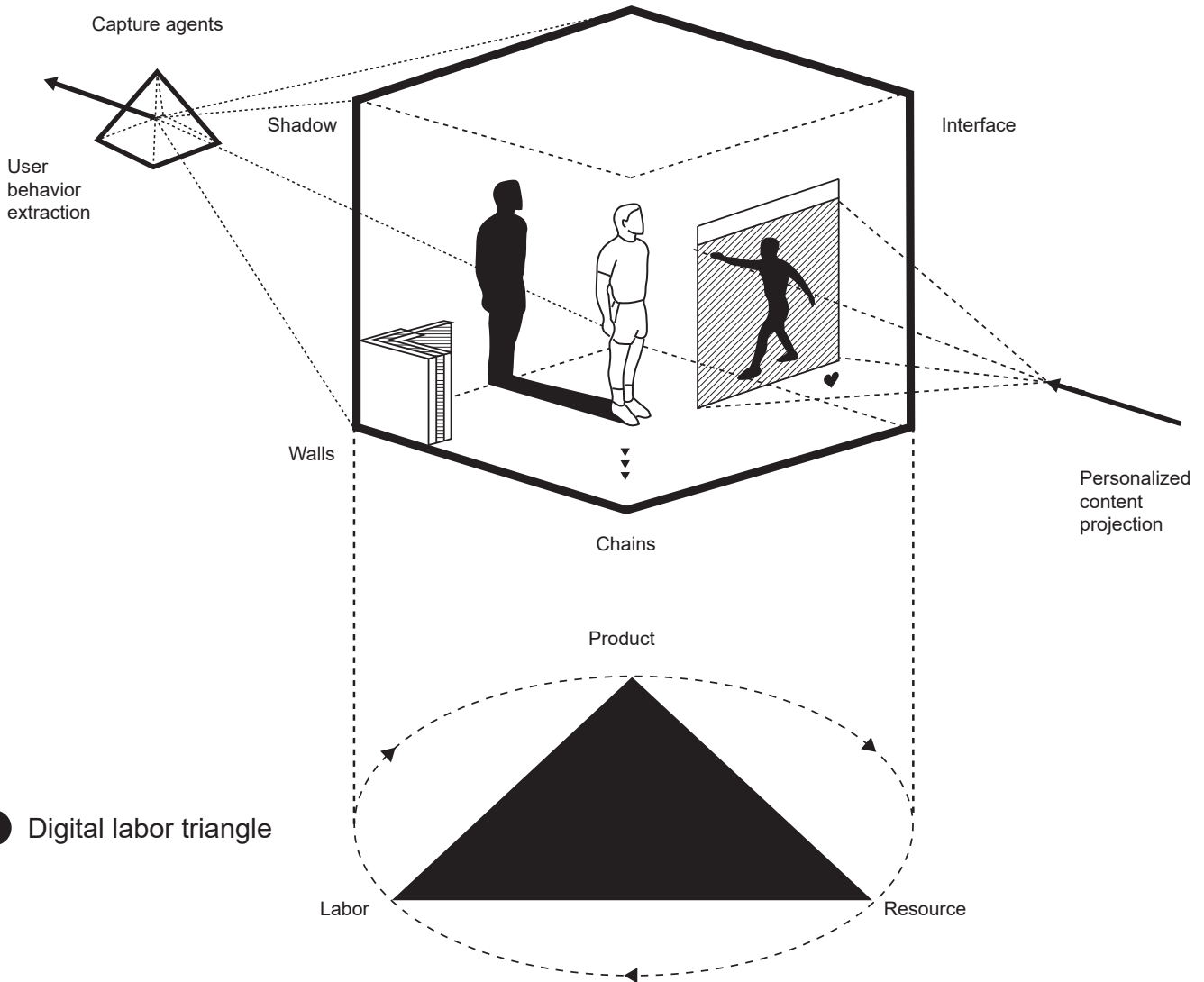
In this assemblage of allegories, millions of caves or prison cells form the unique and invisible panopticon⁶ structure. The central tower of this structure has two main functions: (1) to project the content on the walls of the caves and (2) to surveil and capture the digital shadows of the prisoners reflected on the opposite wall.

4. Plato, *The Allegory of the Cave*, Republic, VII 514 a, 2 to 517 a, 7

5. Guy Debord, *The Society of the Spectacle* (1967)

6. Jeremy Bentham, *The Panopticon Writings* (1787)

6 Cave Architecture



7 Digital labor triangle

6 Cave Architecture

The cave and tower walls are constructed of multiple opaque layers and built mostly by ghost work⁷ or invisible labor. The bricks of this structure are made of black boxes, closed code and hardware, glued together with the invisible network infrastructure. They are covered with layers of corporate secrets, patents and copyrights.

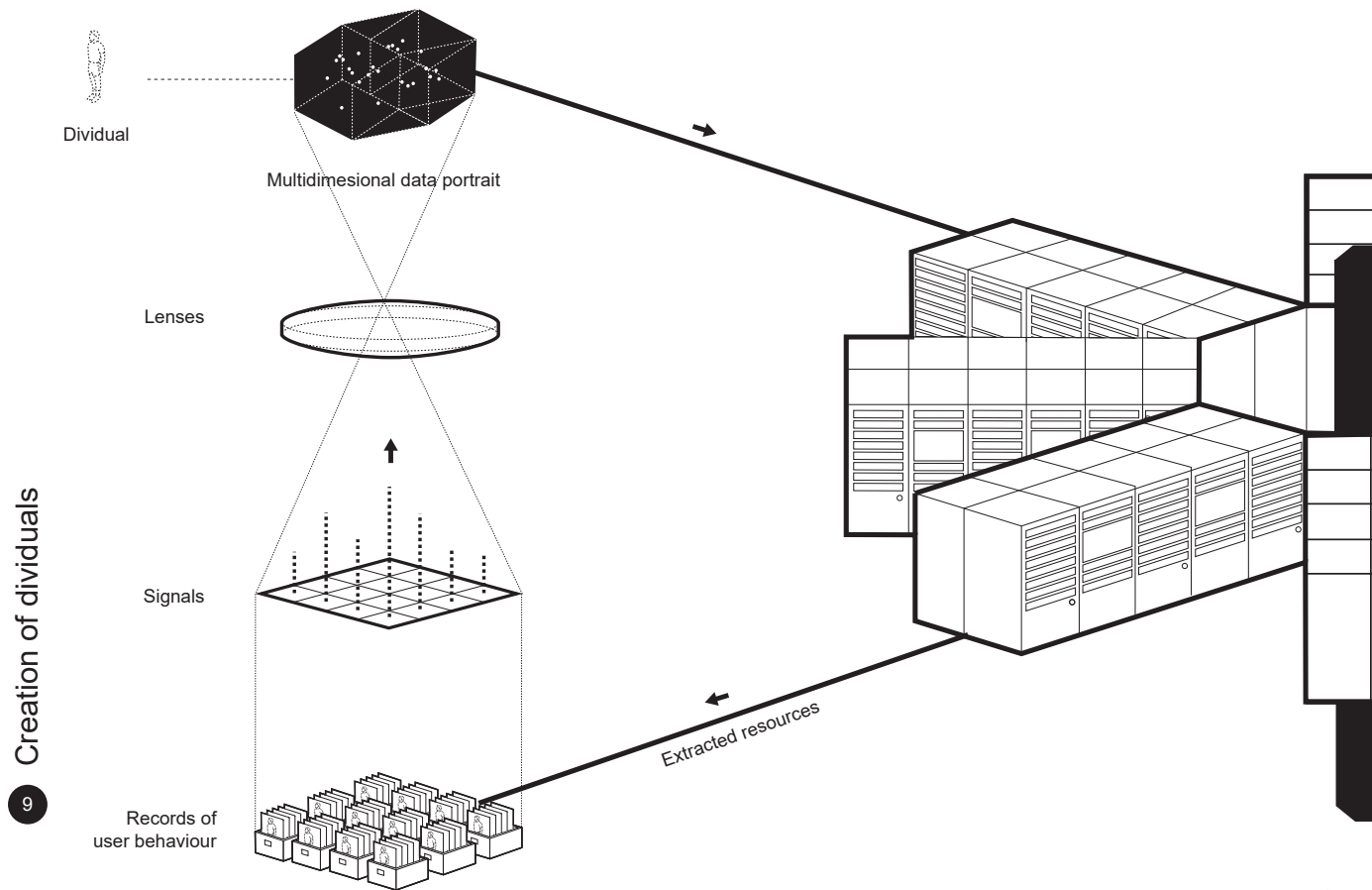
The prisoner is standing in the middle of the cave facing the interface. Interfaces are framing and structuring the projected algorithmic spectacle of images. The interface is the office cubicle of immaterial labor. Even though they are a direct manifestation of rules, regulations and taxonomies, they successfully obscure what is hidden beneath them. They define directly or indirectly what we can or cannot do. They are both tools and discursive frames. They are instituted as an order of discourse and embodiment of the discipline power of the platform.

The spectacle of a constant flow of information projected through the interface creates a digital shadow on the opposite wall of the cave. The projected digital shadow on the wall is a resource field where thousands of capture agents, tentacles of the rhizomatic surveillance complex, extract information.

7 Digital labor triangle

This cave is not only a panopticon prison cell, but it carries out the function of a factory hall and a resource extraction apparatus. The prisoner/worker performs their three-fold function as a worker, a resource and a product⁸. Cave prisoners constantly attached to digital platforms carry out different forms of mostly immaterial and rarely paid labor such as scrolling, liking, sharing, commenting, or creating content (labor side of this triangle). At the same time, every movement or emotional reaction is being recorded continuously. This data is becoming a resource for different forms of exploitation. Finally, by consuming the content projected on the walls of the cave, this user is ultimately a final product sold to the advertisers.⁹

7. Mary L. Gray and Siddharth Suri, *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass* (2019).
 8. Christian Fuchs, *Digital Labour and Karl Marx* (2014).
 9. Edward S. Herman and Noam Chomsky, *Manufacturing Consent: The Political Economy of the Mass Media* (1988)



8 Information Retrieval

From each cell-cave and through the core of the panopticon tower, streams of information are flowing into one of the central structures of this image—the data bank. In the Orwellian universe, this structure is known as the Records Department within the Ministry of Truth.¹⁰ In Terry Gilliam's *Brazil*¹¹—Information Retrieval. The data bank is not just the engine room, but the power itself.

From here, we are examining three processes crucial for this story. On one side, extracted, stored and analyzed personal data is shaping the multidimensional portrait of the individual. On the second, all the products of the user's labor are being stored, analyzed and ranked, to form the information spectacle of images, meanings, and reputations.

Furthermore, in the third one, this structure lies upon the top of the exploitation of human minds, bodies and nature.

9 Creation of Dividual

In his famous essay "Postscript on the Societies of Control", Deleuze¹² envisions a form of power that is no longer based on the production of individuals but on the modulation of dividuals. Individuals are deconstructed into numeric footprints, or dividuals, that are administered through "data banks". Our online behavior is captured, processed, and deconstructed into statistical vectors, clusters, patterns and anomalies. Each move we make is carefully analyzed by thousands of mathematical functions, algorithms and machine learning systems. This system does not see us through linear narratives emerging from our browsing behavior, metadata, or movements in physical space but as n-dimensional statistical projections. Each and every one of our clicks sharpens the resolution and complexity of this abstract and constantly changing statistical portrait or data body.

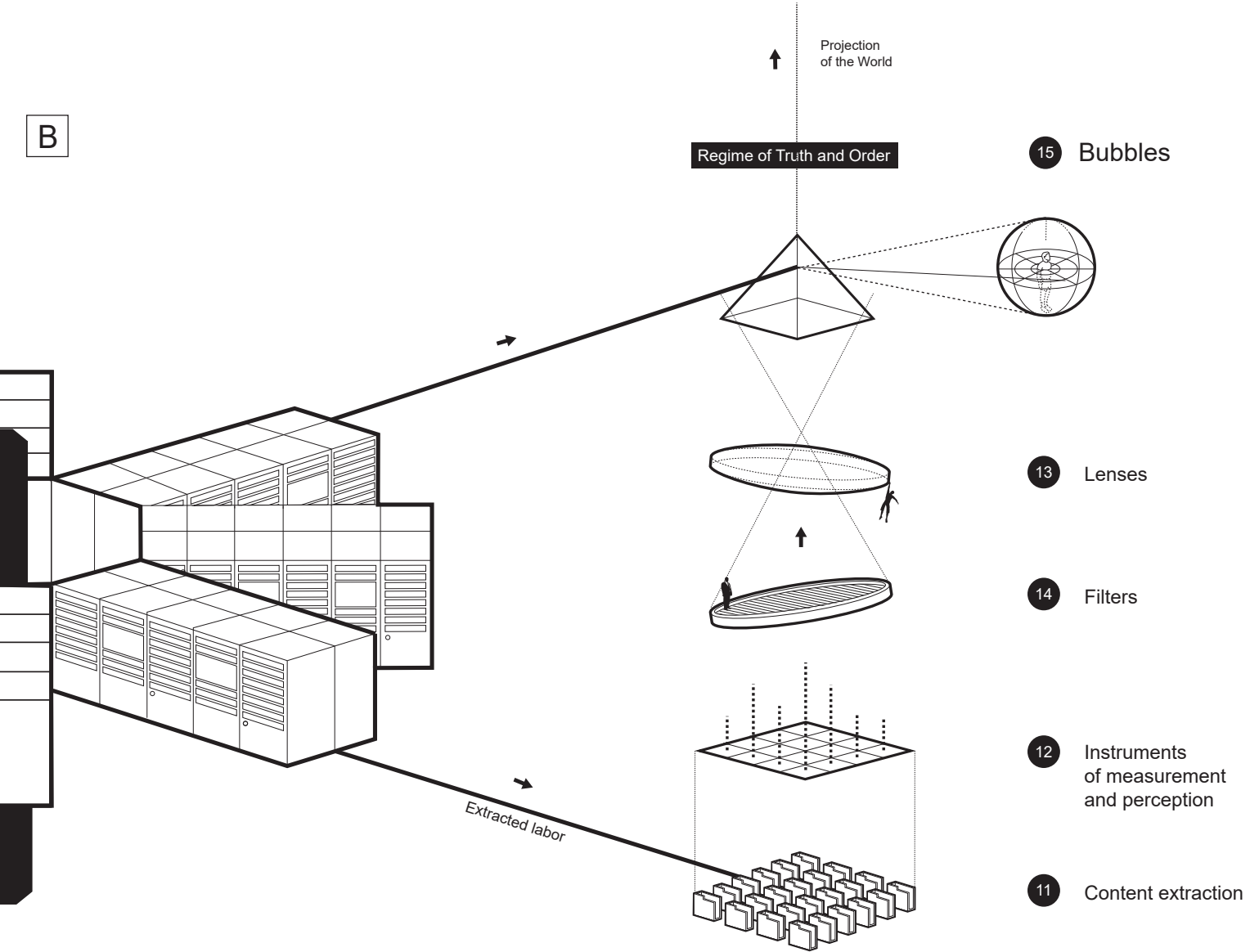
10 Multidimensional portraits

This multidimensional data portraits of the individual, consisting of millions of data points in hundreds of dimensions, can be seen as what Deleuze will name dividual. "A physically embodied human subject that is endlessly divisible and reducible to data representations via the modern technologies of control".¹³ The Critical Art Ensemble is describing this data body as "the fascist sibling of the virtual body, a much more highly developed virtual form, and one that exists in complete service to the corporate and police state".¹⁴

The full picture of our dividual being or data body is not centralized in one place but is spread across hundreds of data centers in the rhizomatic assemblage of the surveillance economy and government actors. This non-heterogeneous and dispersed assemblage portrait exists through the system of data dealers, the official and unofficial exchange of data in constant flow.

As described by Marco Deseriis in *The Politics of Condividuality* "...dividual is always open to interaction, always ready to be detached from and attached to other dividuals. Thus, as compared with the individual—which prides itself of its unique properties—the dividual has the advantage of being combinable with other divisible beings that share some properties with it."¹⁵ In the words of Matteo Pasquinelli, "The dividuals do not simply describe an atomized subject but make possible the posthuman consolidation of collective agents as condividuals, or as superjects."¹⁶

B



D

11 Content extraction

All products of digital labor (comments, texts, books, images, videos) are being harvested by content platforms and a multitude of different capture agents. Each web page or other piece of content that is being captured "in the wild" is rendered and analyzed. This content is being extracted into hundreds of different signals processed through the algorithmic lenses that will later determine the position and role of this page in their Order of Things and their Projection of the World.

12 Instruments of measurement and perception

Collected content and extracted data become a permanent corporate resource for creating multidimensional, dynamic, complex topologies in which every piece of data becomes an object that is contextually linked to other objects. Within this map, this new meta-territory, crawl hundreds of different mathematical functions, algorithms, and neural networks that we can call as in the Nooscope¹⁷ diagram and essay: "Instruments of measurement and perception".

13 Lenses

"Instruments of measurement and perception always come with inbuilt aberrations. In the same way that the lenses of microscopes and telescopes are never perfectly curvilinear and smooth, these logical lenses embody faults and biases. To understand machine learning and algorithms and register their impact on society is to study the degree by which social data are diffracted and distorted by these lenses."¹⁸ The shape of the algorithmic lenses is carefully crafted to project the image that is in accordance with the platform's financial interest and political goals and values.

14 Filters

Aside from instruments of digital truth and order embodied in their algorithms and neural networks, platforms often imply direct rules and regulations. They have direct power of regulation of what can be seen or said, what kind of content can and cannot exist in their universe. Here we are visually representing those rules and regulations as filters. Similarly to the algorithmic lenses, the fabric of those filters is crafted according to the platforms' financial interests and political goals and values.

10. George Orwell, *Nineteen Eighty-Four* (1949)

11. Terry Gilliam, *Brazil*, (1985)

12. Gilles Deleuze, *Postscript on the Societies of Control* (1992)

13. (Ibid.)

14. Critical Art Ensemble "Flesh Machine: Cyborgs, Designer Babies, Eugenic Consciousness." (1998) <http://www.critical-art.net/books/flesh/>

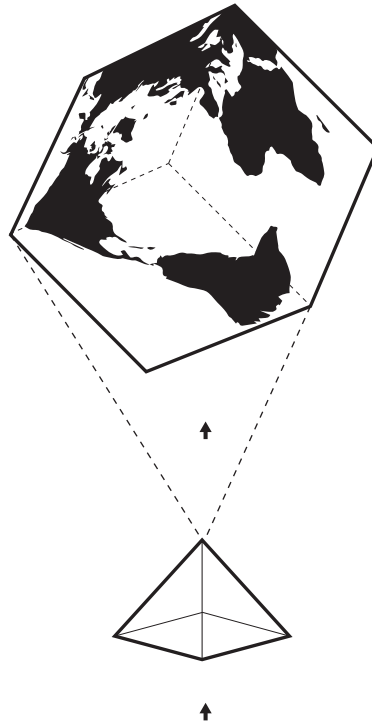
15. Marco Deseriis, *The Politics of Condiuidality* (2018)

16. Matteo Pasquinelli, "Metadata Society", keyword entry in: Rosi Braidotti and Maria Hlavajova (eds) *Posthuman Glossary*, London: Bloomsbury, 2018.

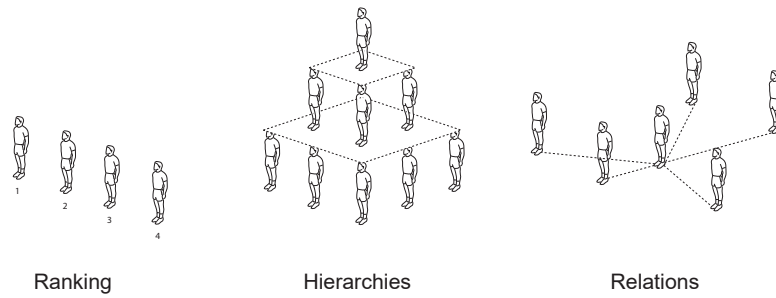
17. Matteo Pasquinelli and Vladan Joler, "The Nooscope Manifested: Artificial Intelligence as Instrument of Knowledge Extractivism", visual essay, KIM HfG Karlsruhe and Share Lab, 2020. <http://nooscope.ai>

18. (Ibid.)

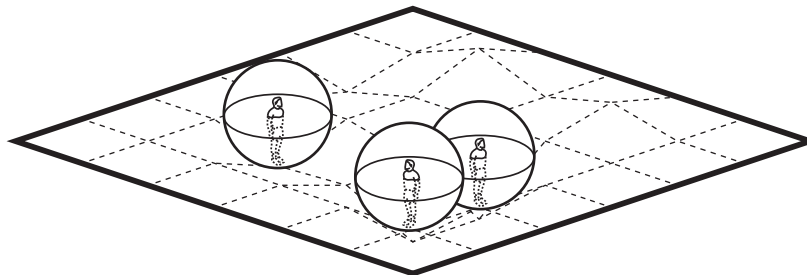
16 Projection of the World



Regime of Truth and Order



Algorithmic landscape



15 Bubbles

15 Bubbles

The flow of the spectacle is not a single stream but billions of personalized streams of images, sounds and meanings. Based on the multidimensional portraits of the individuals, algorithms, and neural networks are carefully directing personalized plays for each user. In this simulacrum,¹⁹ our main actor is a center of a small universe in which his or her opinion and attitude matters. Users trapped in their bubbles/caves are positioned within different algorithmic and statistical territories. The mountains and valleys of those multidimensional ever-changing invisible landscapes are clustering individual bubbles and creating new relations, taxonomies, and ontologies.

16 Projection of the World

Instruments of measurement and perception are ranking defining hierarchies and relations between content, users and meaning. They define the digital regime of truth and order.²⁰ This regime is a prism through which the world is projected in the form of the constant stream of spectacles²¹ on the walls of the caves.

19. Jean Baudrillard, *Simulacra and Simulation* (1981)

20. "Each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true" Foucault, in Rabinow (1991)

21. Guy Debord, *The Society of the Spectacle* (1967)

D

C ↑

17 Engines of extraction

Beyond the capture 20

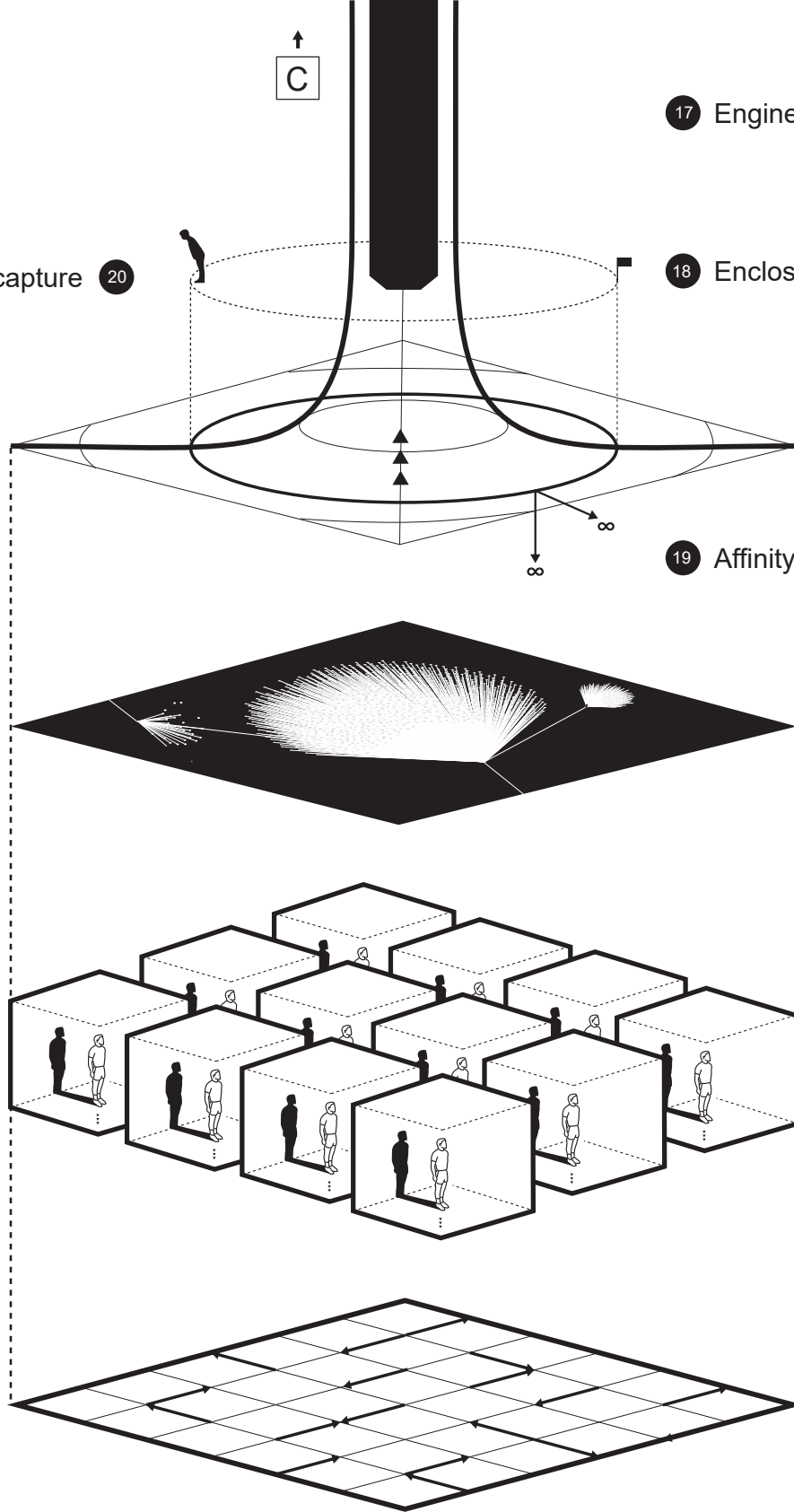
18 Enclosure

19 Affinity to infinity

Network infrastructure

Human fields

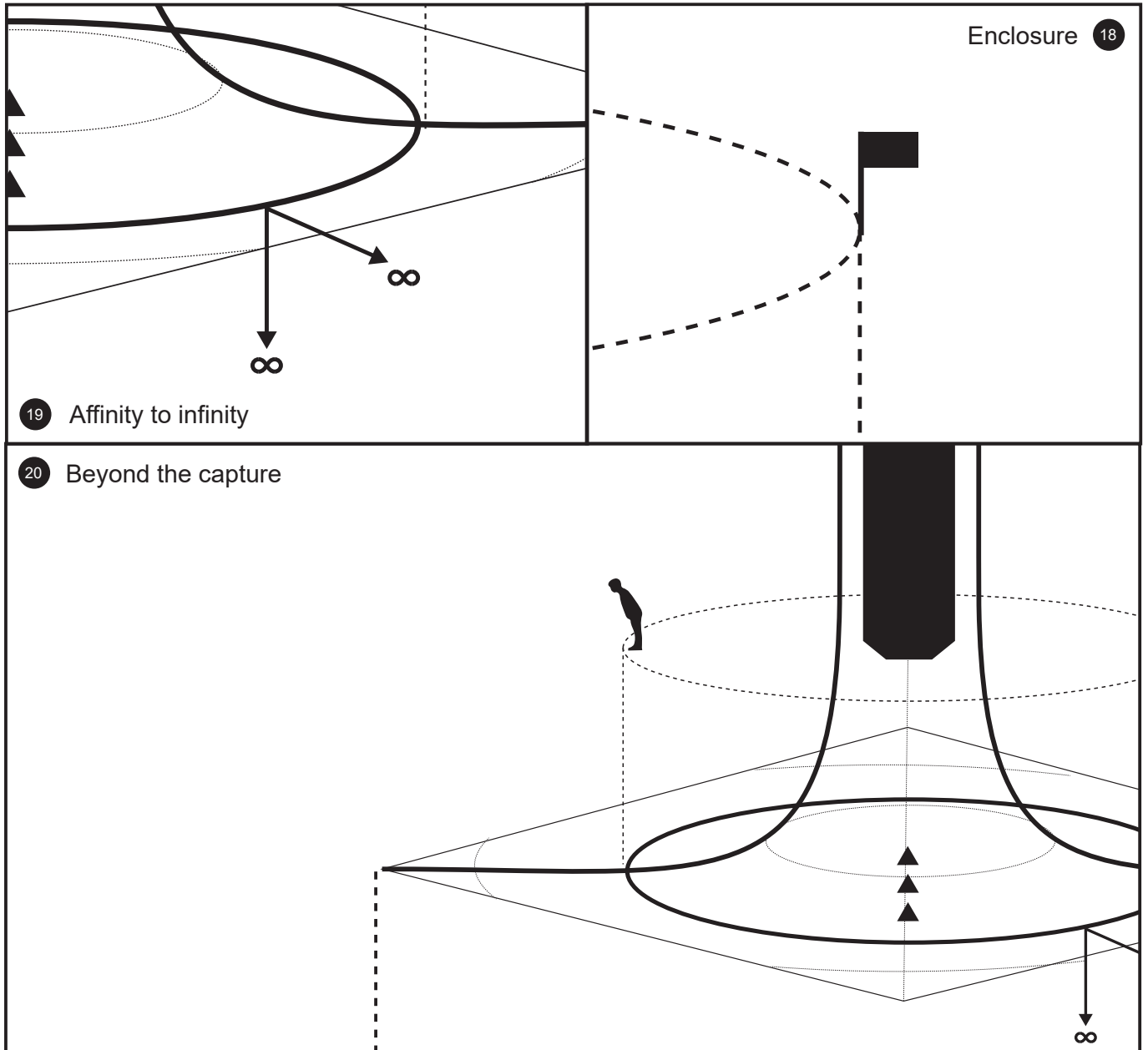
Society



17 Engines of extraction

Empowered by the digital extractivism tools of the information age, everything becomes a potential frontier for expansion and extraction. From the depth of DNA code in every single cell of the human organism, to vast frontiers of human emotions, behavior and social relations, to nature as a whole—everything becomes the territory for the new extractivism. As we point out in the *Anatomy of an AI*, at this moment in the 21st century, we see a new form of extractivism that is well underway: one that reaches into the furthest corners of the biosphere and the deepest layers of human cognitive and affective being. Thousands of corporate and government actors compete to stick their flags into the uncharted territories of our behavioral, emotional and cognitive landscapes, invading deeper and deeper into our bodies and minds. Once the territory is invaded, the process of enclosure and exploitation is established.

22. Kate Crawford and Vladan Joler, "Anatomy of an AI System: The Amazon Echo As An Anatomical Map of Human Labor, Data and Planetary Resources," AI Now Institute and Share Lab, (September 7, 2018) <https://anatomyof.ai>



18 Enclosure

"The 'enclosure' of biodiversity and knowledge is the final step in a series of enclosures that began with the rise of colonialism"²³ Vandana Shiva explains. However, new forms of extractivism are expanding into the territories far behind the biodiversity and knowledge enclosure. This is why we are not speaking anymore just about the knowledge economy but about the attention economy, emotion economy, and many other "new economies" being born from the invasion of new territories of extraction.

19 Affinity to infinity

In his essay "Presenting The Unpresentable: The Sublime",²⁴ Jean-François Lyotard introduces the phrase "affinity to infinity." In his view, the fields of contemporary art, techno-science and capitalism have the same aspiration: to push boundaries towards a potentially infinite horizon. In the transition to the information age, capitalism was given a chance to satisfy its affinity for infinity, to form and conquer an infinite number of new territories, to create new mechanisms for the accumulation of capital within these new spaces and to formulate new forms of exploitation. Here we see a contemporary embodiment of the story "On Exactitude in Science,"²⁵ written by Borges in 1946. Whether we talk about indexing of the entire online world, digitizing all the books that have been printed so far, mapping the entire globe or mapping people through their profiles, we talk about the tendency of those companies, in their affinity to infinity, to create the maps that cover the entire Empire.

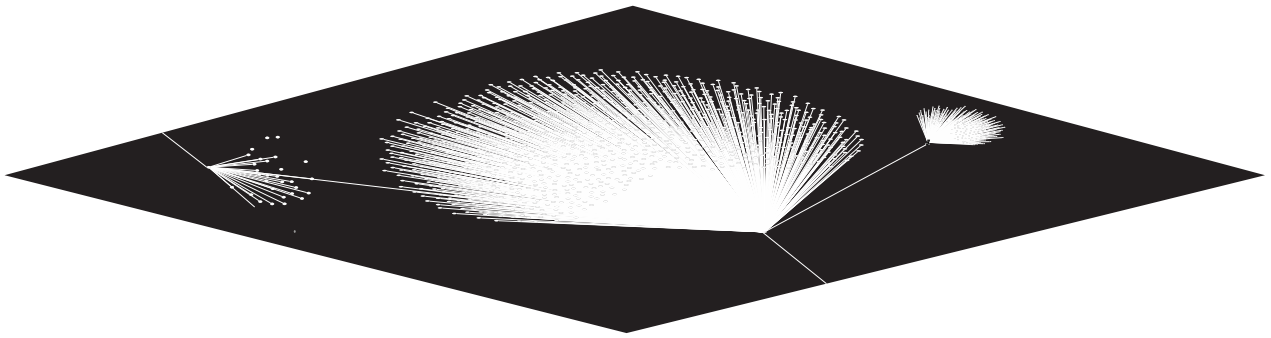
20 Beyond the capture

We are standing at the imaginary edge and looking into the land beyond the limits of extraction. The land outside their capacity to capture, conquer and commodify. Is there any word or meaning that is not captured by this gigantic meta-structure and the millions of synthetic spiders and sensors recording multiple aspects of reality? How can we investigate but not harm those fragile words or meanings that somehow escaped the capture process? How can we speak about them without exposing and capturing them? How do we care for and cultivate ecologies that exist beyond the border of capture?

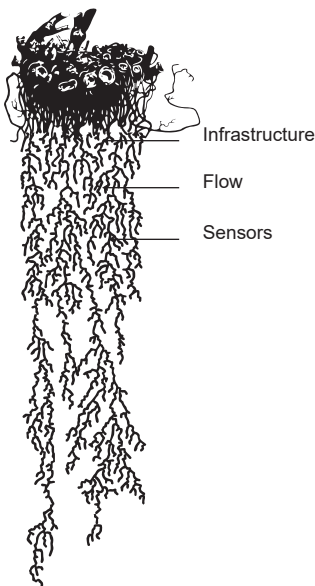
23. Vandana Shiva, *The Enclosure and Recovery of The Commons: Biodiversity, Indigenous Knowledge, and Intellectual Property Rights* (1997).

24. Jean Francois Lyotard, "Presenting the Unpresentable: The Sublime," *Artforum*, April 1982.

25. Jorge Luis Borges, *On Exactitude in Science* (1946)

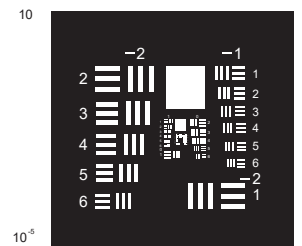


21 Rhizomatic surveillance

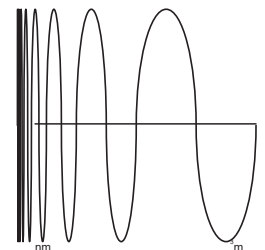


Network of entangled surveillance systems

22 Anatomy of a capture agent



Resolution



Spectrum

21 Rhizomatic surveillance

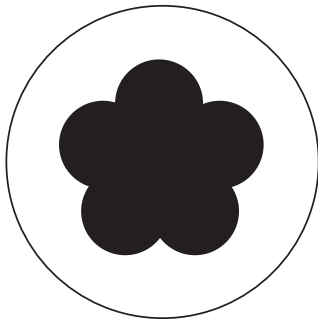
The planetary scale surveillant assemblage²⁶ is one of the critical infrastructures behind new extractivism practices. Thousands of corporate and government actors are independent of each other, collecting information about us. Through the invisible network of data dealers, public and not public partnerships, those pieces of information are in a constant flow forming one functional entity. Surveillant assemblage can be seen as a rhizomatic structure described by Deleuze and Guattari.²⁷

26. Kevin D. Haggerty Richard V. Ericson, *The surveillant assemblage*, (2003)
 27. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (1980)

22 Capture agents

At the end of each of the rhizome's roots, the tentacles of the planetary surveillance rhizome, there are one or many sensors. These capture agents can take many forms and sizes. From the tiny pieces of code, crawlers that wander the web collecting information about each web page, over the sensors catching heartbeats and surveillance cameras capturing our faces, to the complex network of satellites orbiting Earth and locating devices. They can see reality through a full range of the electromagnetic spectrum: from gamma rays and x-rays, through infrared and visible light, to micro and radio waves. They can be invisible like a Facebook pixel or massive like a 500m wide radio telescope.

Data extraction

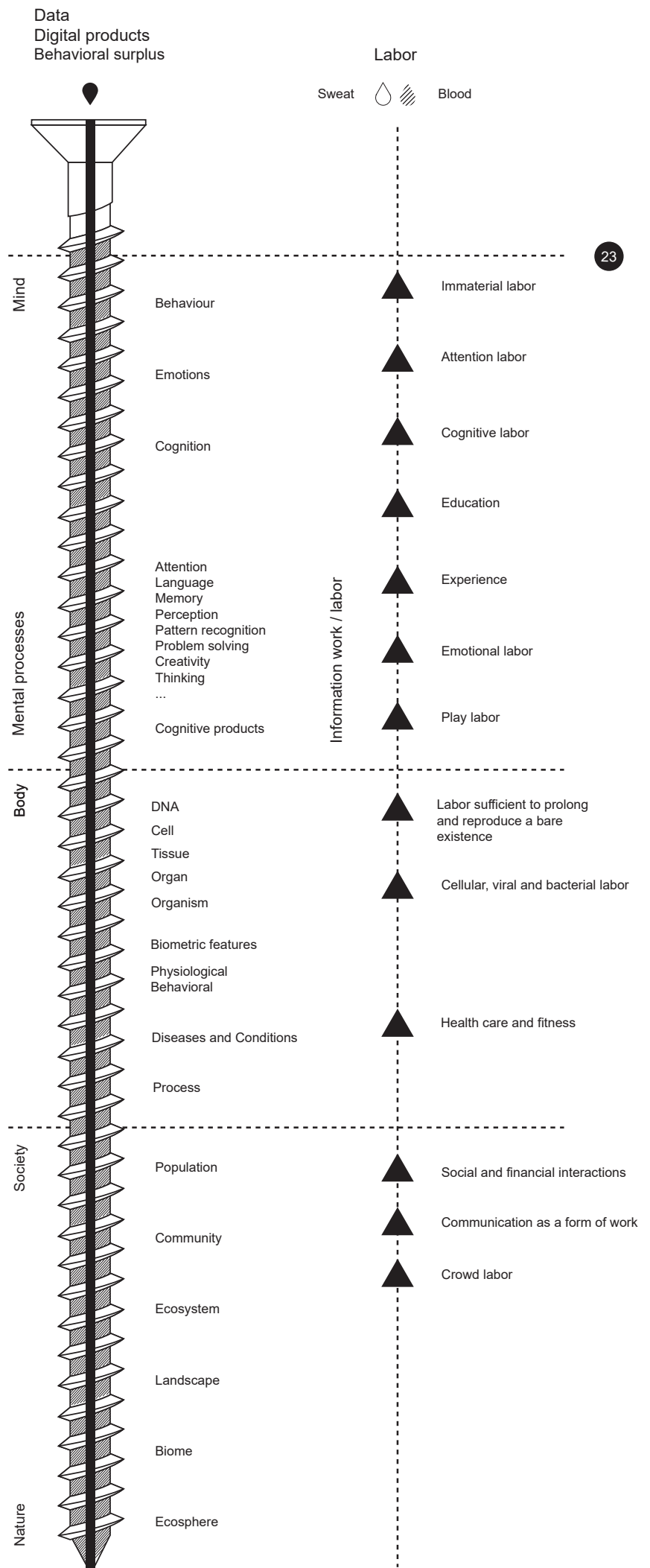


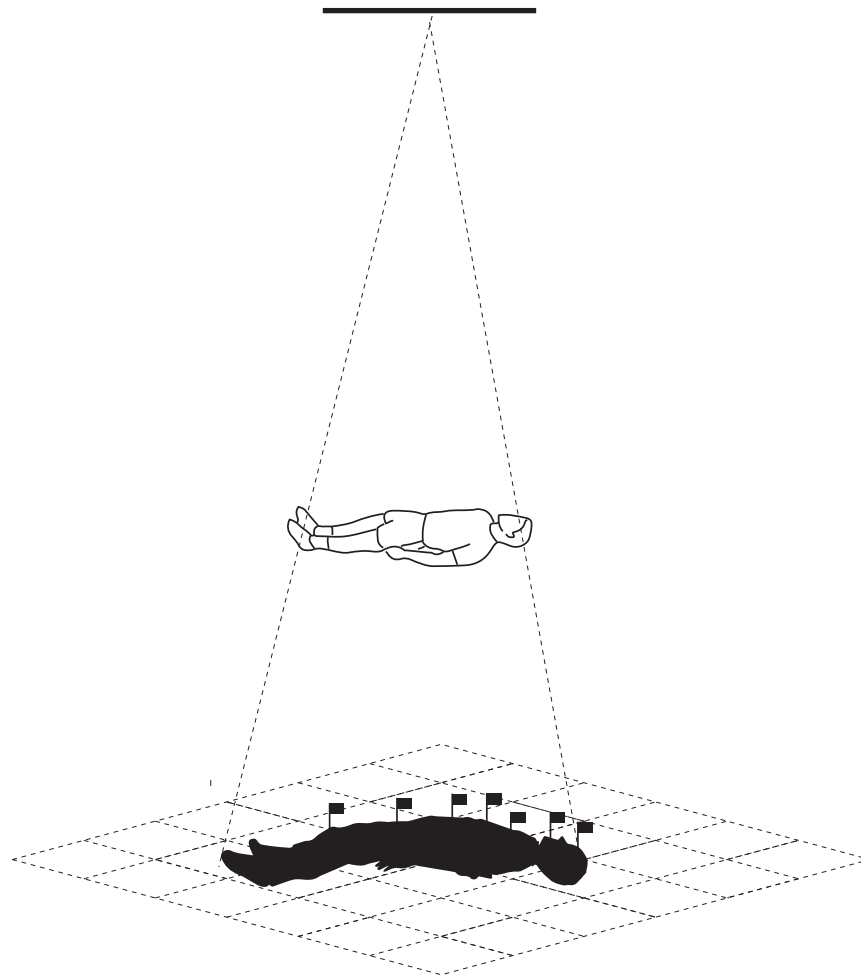
23 Body and mind as territory

In our anthropocentric world, the territory of the human body and mind is one of the most explored and exploited extraction stratum. The process of quantification is reaching into the human affective, cognitive and physical worlds. Every form of biodata—including forensic, biometric, sociometric and psychometric – are being captured and logged into databases for AI training, psychological profiling, nano targeting and many other forms of data exploitation.

This crusade is not just about the quantity of data but also about the quality and diversity of data in order to achieve a full spectrum of color and resolution in our multidimensional portraits that they are painting. Furthermore, as Pasquinelli²⁸ pointed out, the process of extraction of "analytical intelligence" from the most diverse forms of human labor and the transfer of such intelligence into a machine is another crucial part of the process.

28. Matteo Pasquinelli and Vladan Joler, "The Nooscope Manifested: Artificial Intelligence as Instrument of Knowledge Extractivism", visual essay, KIM HfG Karlsruhe and Share Lab, 1 May 2020. <http://nooscope.ai>





24 Digital labor

In 1750, Diderot and d'Alembert published the first volume of the *Encyclopédie*,²⁹ which set out to cover each and every branch of human work. Two hundred thirty years later, that kind of endeavour is much more difficult since labor is nowadays being obfuscated, hidden behind layers of transparencies and complexity. As elaborated in Christian Fuchs's book "Digital Labour and Karl Marx",³⁰ different forms of labor and relations are part of the contemporary production of digital technology. Slave work in mineral extraction in Congo, primitive accumulation and absolute surplus-value production at Foxon in China, body shopping of Indian ICT workers, an army of ghost micro workers behind Mechanical Turk platform, Amazon distribution center workers in the cage, unpaid users and the Google labor aristocracy are all part of the evolved triangular trade system within the planetary scale factory. Those and many other forms of labor are needed to produce and operate this planetary-scale extraction system.

25 Behavioral surplus

As Shoshana Zuboff³¹ points out, surveillance capitalism renders behavior so that it can be parsed as observable, measurable units. Once it is rendered as behavior, it is turned into data. This is what she calls "behavioral surplus". Since our bodies, minds, and behavior are one of the ultimate resources for the new extractivism, every segment of our existence can be seen as a form of direct or indirect labor producing data as a behavioral surplus. When we breathe, walk, or sleep, every single emotion that we feel, our attention, our body temperature, or diseases that we have—everything can produce a behavioral surplus if being captured by this giant surveillance apparatus. In that sense, even our bare existence can be seen as labor.

26 Digital identity labor

As pointed out by Kristian Lukic in the essay "Colonisation with Love"³², freelancers, self-employed, unemployed and all those grey areas in between that now constitute the world of labor need to spend more and more hours maintaining their profiles and offering in(directly) their expertise, experience, success stories, opinions and documentation of their works and activities, in a similar fashion to sex workers in the windows of red-light districts. It takes a lot of privilege and financial and psychological stability to not participate in the reputation economy systems moderated by those platforms. Digital identity labor is the forced labor of the 21st century, and as we mentioned before, opting out is essentially a fantasy. This creates an auto-disciplinary society specialized in the detection and targeting of human anomalies. When each anomaly is detected, it would calculate risks and decide on individual liquidities.

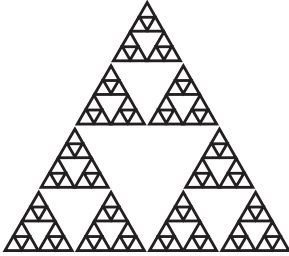
29. Denis Diderot and Jean le Rond d'Alembert, *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers*, (1751)

30. Fuchs, Christian. *Digital Labour and Karl Marx*. New York: Routledge (2014)

31. Shoshana Zuboff, *The Age of Surveillance Capitalism* (2019)

32. Kristian Lukic, *Colonization with Love*, Share Lab (2016) <https://labs.rs/en/colonization-with-love/>

28 Fractal supply chains



Sierpinski fractal

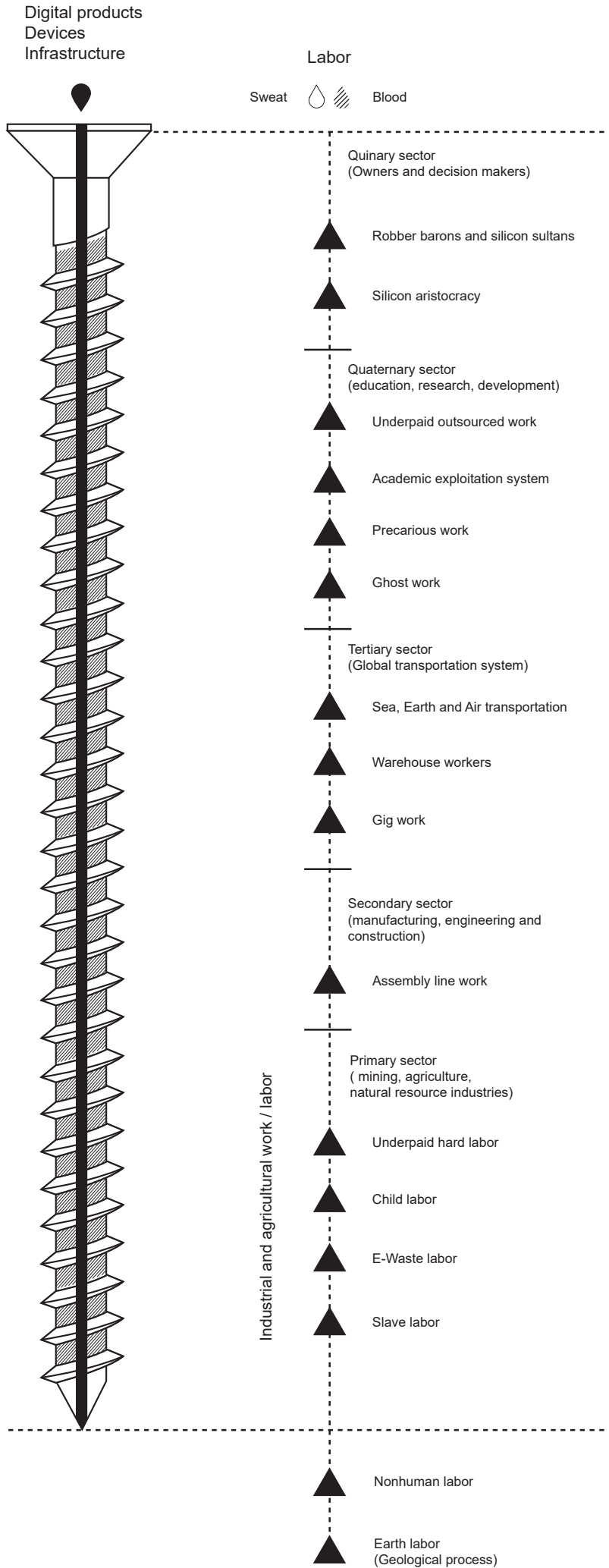


Carboniferous plants

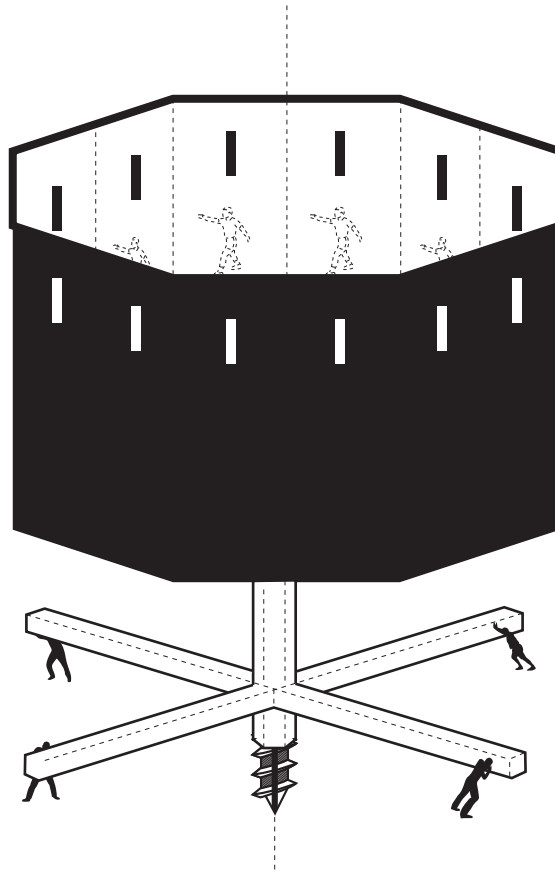
27 Nonhuman labor

It is important to try to come out from an anthropocentric point of view and try to think of non-human labor as a part of the overall mosaic. We can zoom out into deep time and consider the labor of prehistoric plants and animals embedded in the formation of carbon that is being burned as a fuel for the data centers, infrastructure and our devices. Millions of years of nonhuman labor have been burned for just two hundred years of industrial spectacle. Even further, we can think of the geological process as a form of Earth labor or the process of element creation as a form of Universe labor. Nevertheless, we don't need to go so far into the past, and we can try to observe all the labor existing within the microbiome of our bodies.³³

33. Paul Vanouse, Labor
<https://www.paulvanouse.com/labor.html>



Projection
of the World



Exploitation
of natural
resources

29 Heteromation and ghost labor

28 Fractal supply chains

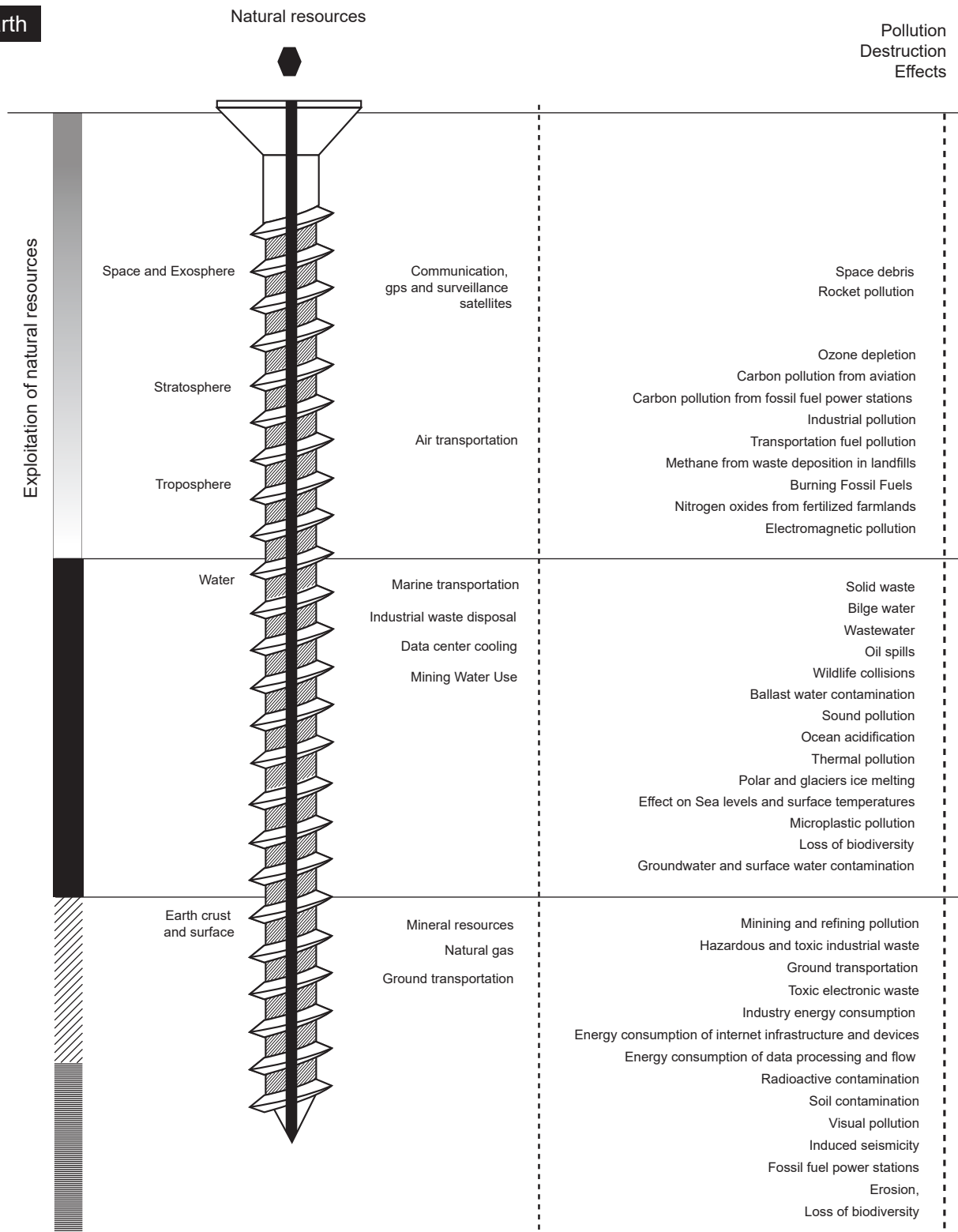
Supply chains hidden behind the engines of extractivism are black boxes as much as neural networks or algorithms hidden behind interfaces. Californian ideology presents itself in the form of colorful, playful offices filled with all-year-long Silicon Valley sunshine, where digital bourgeoisie enjoy in playbor³⁴ and free five-star food. Analysis of the invisible layers of digital infrastructure and product supply chains tell us a different story. In the "Anatomy of an AI System", we used the image of the Sierpinski fractal to illustrate the complexity of supply chains and the process of exploitation embedded in those processes. Each triangle of this fractal represents one phase in the production process, from birth in a geological process, through life as a consumer product, and ultimately to death in an electronics dump.

29 Heteromation and ghost labor

Within the fractal supply chain, we see a perpetual dance between human labor, nonhuman labor, earth labor and automatization. As pointed out in the Noosphere by Matteo Pasquinelli, Automation is a myth, because machines, including AI, continuously call for human help. Hamid Ekbia and Bonnie Nardi call this kind of participation "heteromation."³⁵ Another term for this invisible human labor embedded in almost every phase of the production process is—ghost labor.

34. Julian Kücklich, *Precarious playbour* (2015)

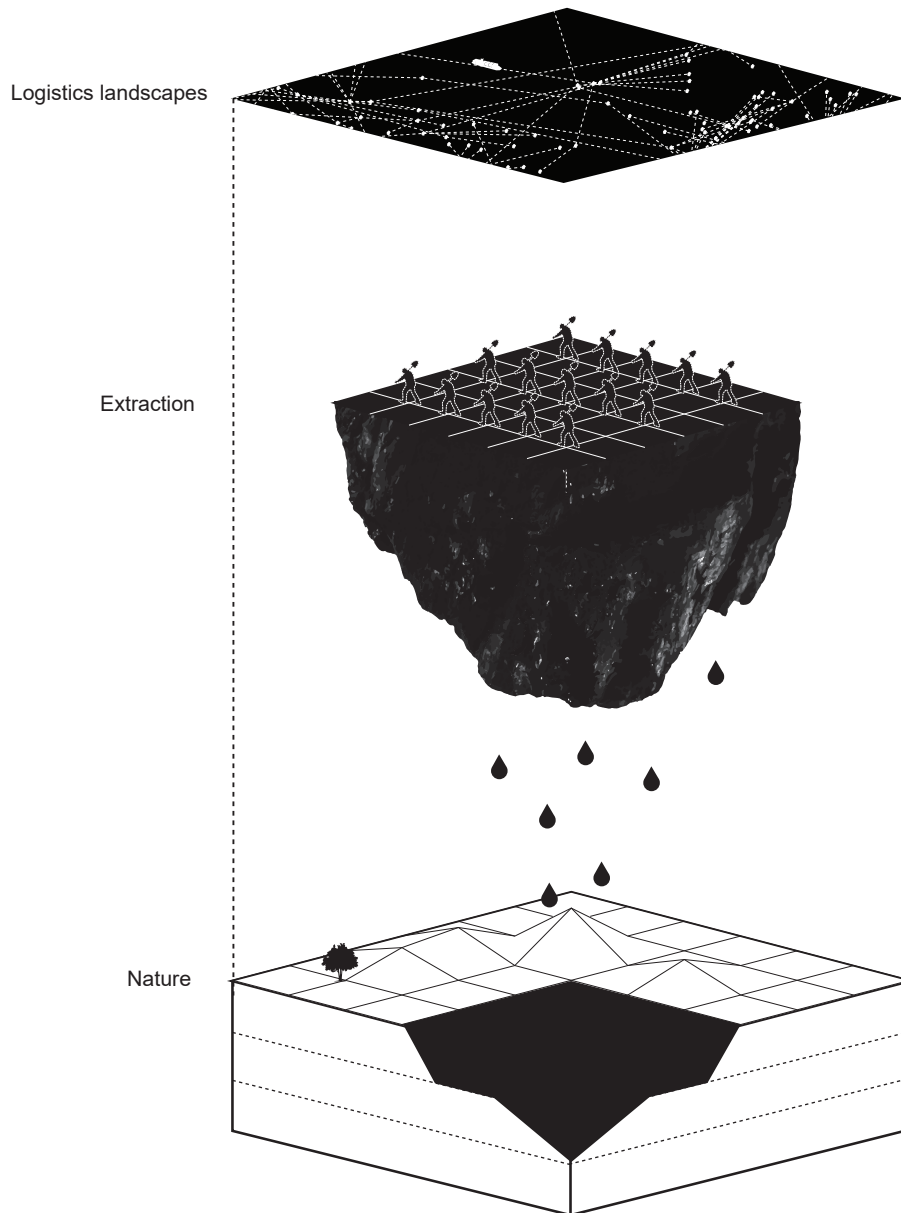
35. Hamid R. Ekbia and Bonnie A. Nardi, *Heteromation, and Other Stories of Computing and Capitalism* (2017)



30 Blood, sweat and toxic lakes

"I wish to God these calculations had been executed by steam!" said Charles Babbage and developed his plans for the Difference Engine in summer 1814.³⁶ More than 200 years later, the engines of new extractivism are still running on burning coal and human sweat. Every click or swipe we make online creates one little hole in the ground, filled with toxic waste and toxic clouds. Every movement of materials and data within the planetary scale factory has its own hidden price. Supply chains are optimized towards maximizing profit for a few, while the real costs of the destruction that follows are shared among all the living entities on the planet in the present and the future. In the words of Mckenzie Wark, "The Anthropocene is a series of metabolic rifts, where one molecule after another is extracted by labor and technique to make things for humans, but the waste products don't return so that the cycle can renew itself. The soils deplete, the seas recede, the climate alters, the gyre widens: a world on fire."³⁷

36. Simon Schaffer, Babbage's Intelligence: Calculating Engines and the Factory System, Critical Inquiry Vol. 21, No. 1 (Autumn, 1994), pp. 203-227
 37. Mckenzie Wark, Molecular Red: Theory for the Anthropocene (2016)



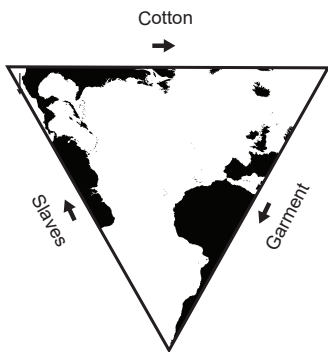
31 Expanding the gap

30 Blood, sweat and toxic lakes

31 Expanding the gap

In H.G.Wells's novel "The Time Machine",³⁸ in the year 802701, humanity developed into two separate species: the Eloi and the Morlocks, as a result of the expansion of the gap between different social classes over a long period. The Eloi live a banal life on Earth's surface, while Morlocks live in the underworld, serving the machinery and breeding food, making clothes, and other products for the Eloi. While one primarily functions in the space of a cave-factory, the other serves the materiality of this space in the mining pits, factory halls and office spaces of the spectacle of the global production of technology, energy and resources.

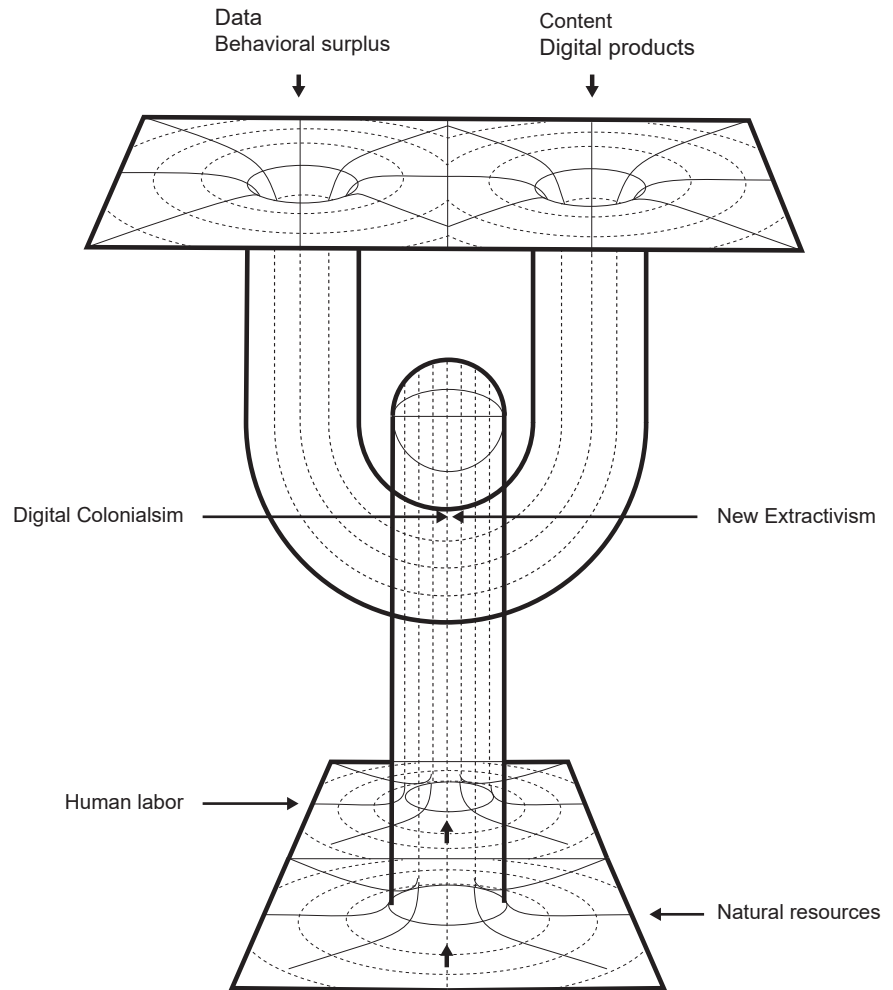
38. H.G.Wells, The Time Machine, (1895)



Triangular trade (16th-19th century)
Transatlantic slave trade



Triangular trade (21st century)
Planetary-scale production



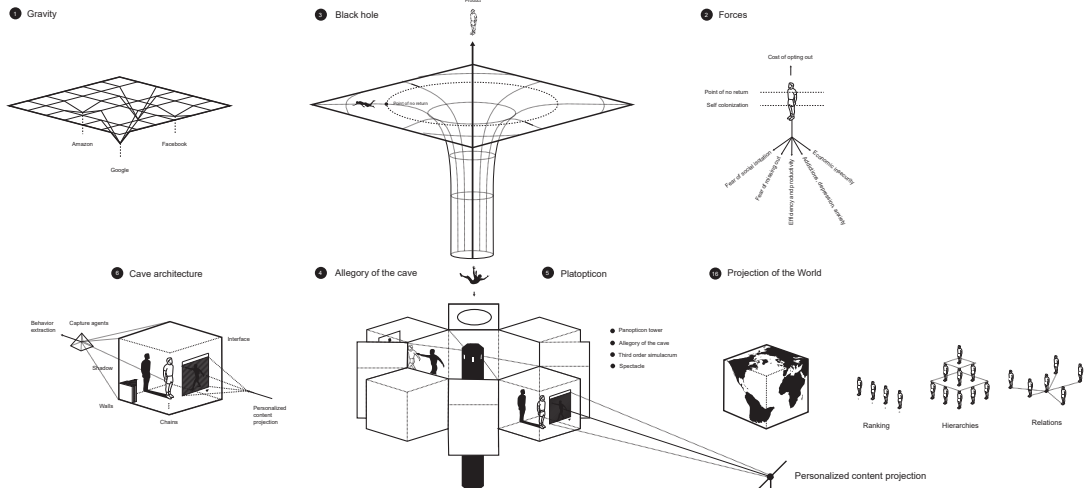
32 Triangular trade

The best-known triangular trading system was the transatlantic slave trade operated from the late 16th to early 19th centuries, carrying slaves, cash crops, and manufactured goods between West Africa, Caribbean or American colonies and the European colonial powers, with the northern colonies of British North America. Slavery was at the heart of the development of the modern planetary-scale global economy. As Barbara Solow³⁹ illustrates, "by the late seventeenth century, the New England merchant, the Barbadian planter, the English manufacturer, the English slave trader and the African slave traders (and merchants) were joined in an intricate web of interdependent economic activity." From those days, the same model of constant flow within the vast fractal production chains expanded in time, space and complexity. The transatlantic slave trade evolved into the contemporary planetary-scale factory.

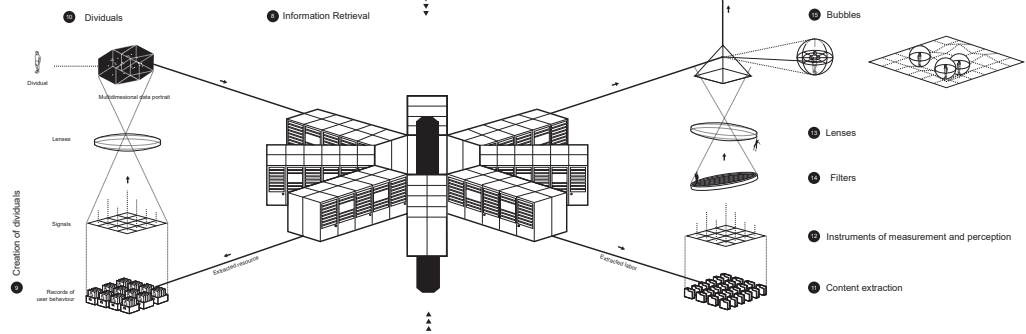
39. Barbara L. Solow, *Capitalism and Slavery in the Exceedingly Long Run* (1987)
40. Renata Avila, *Digital colonialism*, Digital Future Society (2020)

33 Chains of digital colonialism

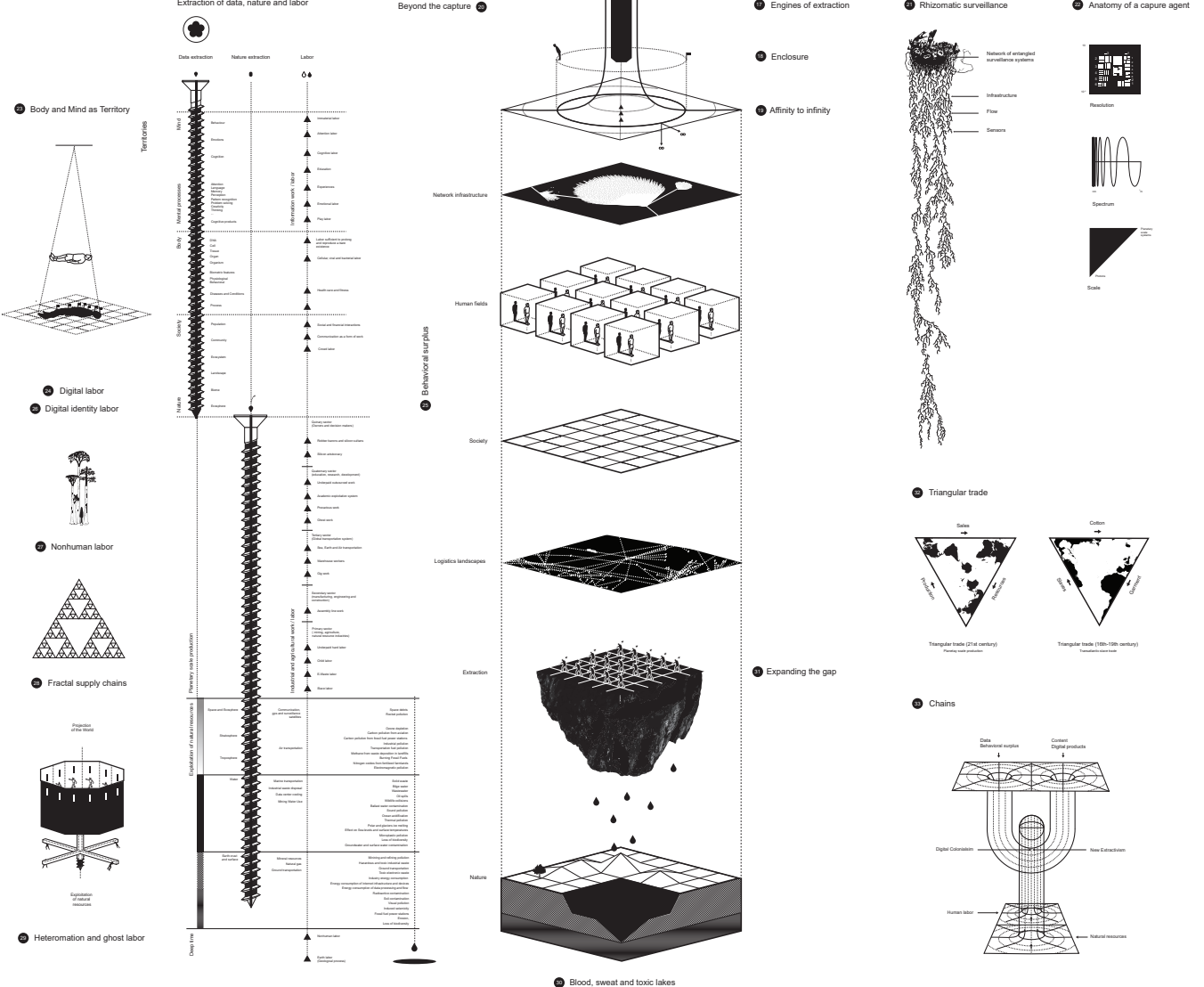
"By digital colonialism, we understand the deployment of imperial power in the form of new rules, designs, languages, cultures and belief systems serving the interests of the dominant power. In the past, empires expanded their power through the control of critical assets, from trade routes to precious metals. Today, technology empires control the world through data and the ownership of computational power, often with the active collaboration of the most powerful governments in the world, set out to satisfy their needs."³⁹ What human rights and technology expert Renata Avila is describing here as digital colonialism is rooted in the extractivist practices illustrated on this map. Nevertheless, this map is proposing an extensive understanding of this term. Traditional colonial practices of control over critical assets, trade routes, natural resources and exploitation of human labor are still deeply embedded in the contemporary supply chains, logistics and assembly lines of digital content, products and infrastructure. In that sense, chains of digital colonialism are made both on the extraction of digital surplus and the traditional exploitation of labor and resources.



FACTORY



EXTRACTION FIELDS



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