"Metaplasis": Scenarios for recovery of post-extraction territory of Eordaia Region

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Metaplasis: ancient Greek/ μετάπλαση ¨μετα¨ /meta/ = change[1], the passage to something new[2], something that follows chronologically something else[3] + "πλαθω" /plasis/ = form, shape, sculpture.
Metaplasis = to create something anew by changing its form or shape

ABSTRACT

Soil extraction results in different material qualities. Some products, like coal, are affiliated with industry and pollution. Others, such as marble, equal to perpetual wealth and aesthetic. In the region of West Macedonia, in the North of Greece, those qualities coexist in the form of mines and quarries, creating a material network. With starting point the difference between marble and coal, the research investigates extraction practices as a multilevel topic, an ever-growing field where artificial and natural landscape blends. In the possibility of extraction sites closure, questions emerges in regards for the impact in city, environment and humanity sites towards a future transition. Those sites wound create a new archaeology, signs of an era of Anthropocene and a wounded nature.

Hence research circulates around three themes. First it examines the Hinterlands as a system of operations carrying industrial production, following by the sites of extraction and the narratives around them, in pursuit of the spirit of place. The third aspect is a cognitive examination of the human position into those practices. A placement of human through craft proposes a rethinking of materiality and nature as active agents. This affiliation with non-human entities underlines a transition of culture into a caring state, creating an ecosystem sympathy. Goal is to find answers about the recovery of post-mining territories, the revival of this inert anthropogenic environment.
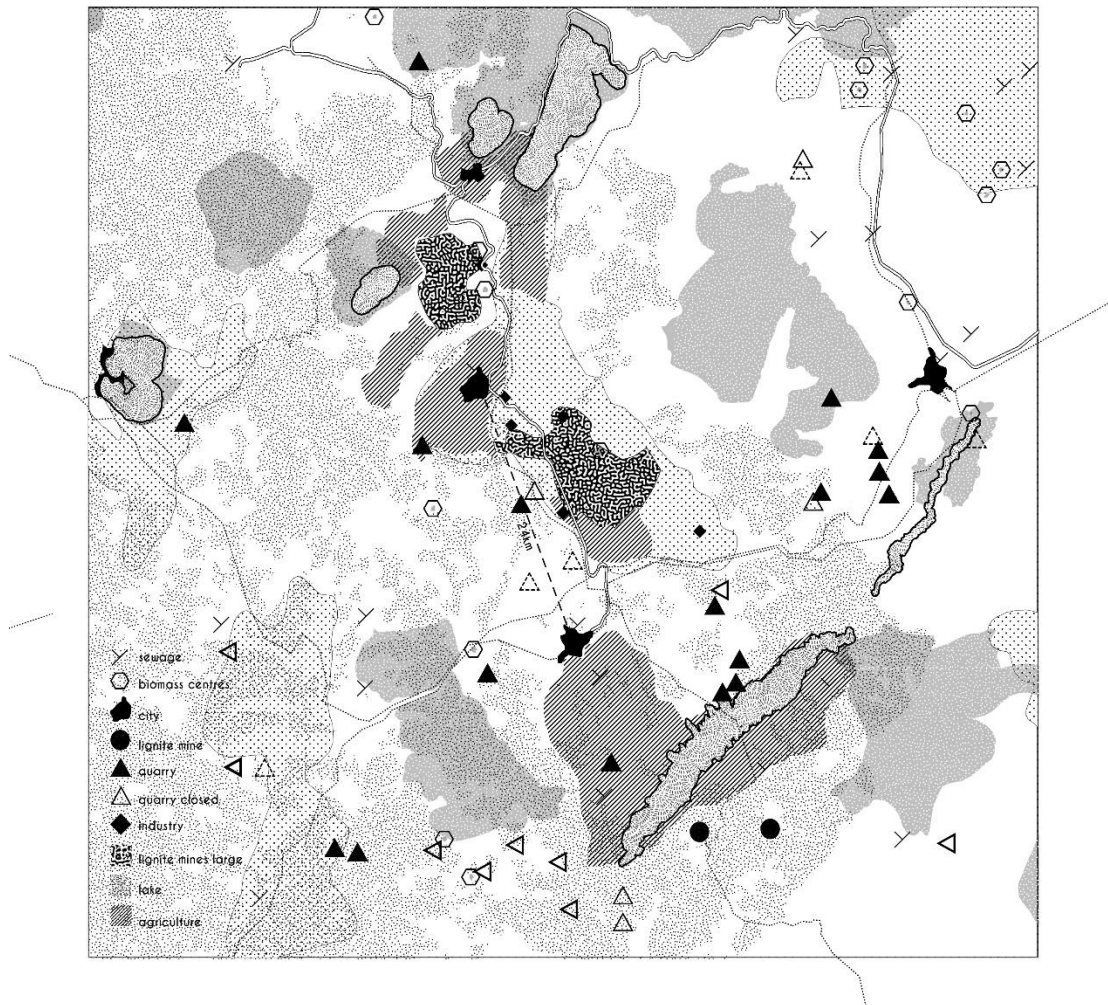
lignite repository
active mines
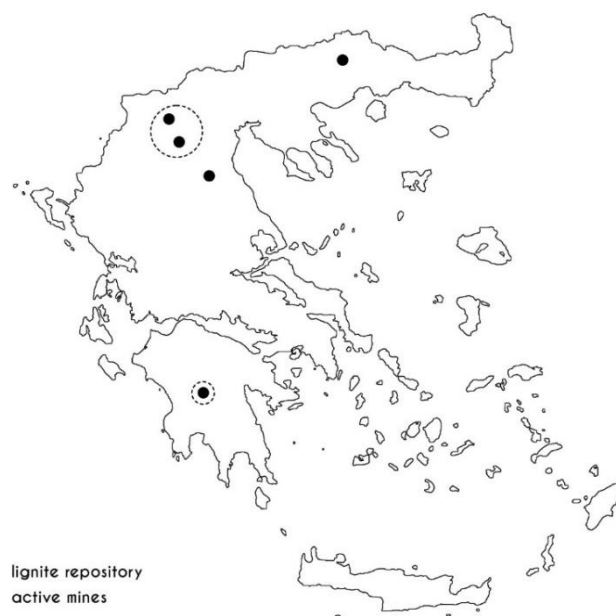
map 1: Map of Greeece with lignite repositories.There are two active mining territories. The largest is placed in the North of Greece.

INTRODUCTION

Today, mining sites like quarries and coal mines, are perceived as degradation sites. Characterized as **"constructed site," Carol Burns argues, emphasizes the visible physicality, morphological qualities, and existing conditions of land, looking at the natural and human forces that have shaped the land. (Sheppard, 2013).** Phases of a mines' life are constructed by technical means focusing on the maximum exploitation as design core. A quarry is successful when extraction is fluid, constant, meticulous, and functional. The notion of extraction repeats until the end of repositories, the death of the extraction site, This notion renders quarrying-mining as an inevitable and irreversible process on the territory, as humanity's' reliance on energy force the process to be ongoing, leaving an alienated space with few possibilities to recover. But what if those sites never existed? Is humanity so reliant to extraction that make it inevitable? How can humanity reverse this potential dystopian future, creating a timeline of productive vector for transformation, a future Arcadia?

In region of West Macedonia, more specifically Eordaia, in the North part of Greece *(map 2)*, a combination of extraction sites are placed *(map 2)*. Coal is the main dominant factor, as the production line carries two thirds of Greece's energy, giving work opportunities to the region and reforming both cities and environment. Besides coal, marble and other stone quarries coexist in the region creating a material network of extraction. This dense materiality blends with the industrial building shells, giving its own identity to the region. The context seems an ever-growing field, as this dense network of artificial and natural landscapes blends. People of the region have grown up with these industrial sites, which prominent figures stand as landmarks of a heavy production era.

The national government has created a plan for the closure of mines, with only few factories continuing their work with other fuels, effective by the end of 2028. The reason is the end of the repositories, as the region need to focus on its next "post-lignite" period. Questions emerge about the future of those territories and the content of the new period. Project attempts forecast this period and turn it into a productive process for humanity and environment, to carve a new culture with sympathy to natural process. These post extraction sites wound create a new future archaeology, signs of an era of Anthropocene and a wounded nature.

Legend:
- ⋋ sewage
- ⬡ biomass centres
- ⬟ city
- ● lignite mine
- ▲ quarry
- △ quarry closed
- ◆ industry
- ▦ lignite mines large
- ▨ lake
- ▨ agriculture

map 2: West Macedonia, specifically Eordaia region, between the two largest cities Kozani - Ptolemaida. An archipelago of extraction sites and industries, a territory focused on extraction

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COAL versus Marble

Mines and quarries are sites of human production, participating in an epoch of anthropogenic impact in geology and ecosystem. The exploitation of coal mines has severe connection to this era, as synonymous with industry. However a question emerges about the position of quarries. Quarries are an ancient, primordial form of mining, traced back into antiquity. Even today marble is perceived positively in the Greek imaginary[1]. Its relation to sculpture, architecture and symbol, or Parthenon, contributed to that status. Thus their role is a catalyst of this research to focus on materiality and unravel a different understanding of soil extraction, helping also understand the coal mines. Based on this observation, a small analysis of coal and marble unravels sub questions about extraction. Analysis stands in the hylophormism[2] laws, searching the causality of these stones, their formation, characteristics, typology, temporality, human perception.

Coal and marble are different sides of the same practice: extraction. Although they are created by earth formations, their matter and consistence diverge. Coal is a sedimentary rock, formed by the accumulation of fossils and dead organisms of the earth's surface and it appears in earth layers of strata, called coal beds. On the other hand, marble is a metamorphic rock formed by high temperature and pressure forced into the earth layers. These procedures give different qualities and potential futures. According to the Aristotelian term hylomorphism (*Υλομορφισμος = ύλη "matter" + μορφη "form"*) the two basic substances of every object, materiality and form, are not aligned despite sharing the origin of earth. Marble creative and artistic value gives it an optimistic future, while coal is meant only for consumption.

Further differences can be spotted in the metaphorical final purpose, or "causality", the **becoming of their extraction**. Coal is extracted for a temporal use, it is consumed, as through the actualization of combustion coal becomes energy, it is meant for utility. This intangible purpose of coal differs from the perpetual use of marble, the placement through carving into sculpture and architecture. These asynchronous temporality will impact the perception for the surrounding to those materials factors, the sites of extraction, workers and extraction tools.

Humans tend to give prominence to the characteristics of marble. That is visible through the **extraction method**, when the meticulous process of marble extraction includes the **respect** to the extracted material and site. A detachment of material decelerates if a possibility for quality deterioration of the photogenic material or even the mountain site comes to the floor. This also elevates the role of the workman in quarries, as a skilled person who needs to know the intricacies of the material and sometimes to act by its own command according to material strength and not the authority's commands. These characteristics are not applied in the case of coal, as the deep connection with production of energy demands a continuum of operations, living extraction sites in less diligence, and workers expendables.

Despite this critical differentiation, of tangible against intangible, beauty and strength against function, the comparison gives the opportunity to diverge from the pessimistic perception of extraction and start making questions heading from the potentiality of extraction to the actualization, a new causality.

Main Question:

How can we recover post-extraction territories?

Subquestions:

Which are the components, operations and hidden data of extraction?

How extraction sites are related to human perception?

What is the future of a post-extraction site and a Hinterland in transition of its mining dependent state?

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[1] Marble comes from the Greek word "μάρμαρο" meaning *shining stone*.
[2] According to the Aristotelian term hylomorphism (*Υλομορφισμος = ύλη "matter" + μορφη "form"*) every object is composed by materiality and form.

Can the role of human as a producer, analyst, and architect be rethought in relation to extraction? What role should he take to create a new caring culture?

Could the impact of extraction on environment and society be reversed?

	coal "λίθος άνθρακος" = anthrax	marble "μαρμαρο"= shining stone
perception	cheap factory+industry workman (labor)	wealth architecture craftsman
time	temporal not durable	perpetual durable
Matter formation (potentiality)	sedimentary rock fossil fuel earth layers of strata (coal beds)	metamorphic rock stone earth (temperature + pressure)
form - operation	industry = combustion energy (intangible)	industry , carving architecture (tangible)
products	pollution (combustion) debris, dust, smoke, exhaust, noise	pollution (through excavating) debris, dust, noise

THEORETICAL FRAMEWORK - TERRESTRIAL

Humanity is deeply connected with production process, hence the term homofaber, the human manufacturer whose ability to formulate matter is his main characteristic, **"by their factories we shall know them"** *(Flusser, 1993)*. Extraction sites are placed in the first step of production, in finding raw supplies for industrial operation. Despite its connection with nature, as products of the soil and geological formations need to be understood before extraction, extraction sites tend to an alienation from environment. **"Material is already a product of human hands which have removed it from its natural location….. Interrupting nature process, in the case of stone or marble torn out of the womb of earth"** *(Arendt, 1992, p139)*. This sentence depicts the current geological era of unprecedented human dominion in morphology and ecology of the Earth. The term **Anthropocene** was proposed as a subset of the Holocene to describe the impact of anthropogenic forces on geological formations.

Anthropocene is the beginning of understanding the counter backs of globalization and a shift in the perception of earth and natural forces. **"Earth is a powerful actor with its own tempo and scale comparable in size and weight to that of human technosphere." (Latour,, 2019, p4)** Bruno Latour implies no subjectivity, as humans act on earth and nonliving things react to this action, reshaping the earth and impacting in the counter back the human actions**.** His proposal is the end of separation between non-human and human beings and their characterization as entities that are intricately connected to each other. This equality helps human perception, which understand not separate entities but relationships between them. Human and non-human entities create systems, a network of relations. By this means, Materiality and not living things are perceived in a different manner. Sites of extraction and their products are not passive territories helpless in human imposition, but rather active entities.

Despite humanity has understood the dangers of modernization and globalization, it appears incapable of finding effective solutions. Bruno Latour describes a tension of humanity to return to local, diverging from globalization. However this shift can be made under the modern knowledge, so it's not just a return to the old, but rather a mediating point, a combination of local and modern ideas. This point, or "attractor", is called Terrestrial. (2018). *(diagram 1)*. In the terrestrial imaginary Latour points a further separation of the entities to enhance their autonomy, **"they are free agents that can decide by their own……they do not obey rules made elsewhere""** *(Latour,, 2019, p8-9)*. This autonomy and modern locality it's a step forward to contemporaneity. After the realization of the bads of humanity dominion (Anthropocene), nature has the capability to take over (terrestrial), seeking a future state, Latour concludes, Vindication.

Into this framework, extraction sites and their material products, coal and marble, are placed in the center of analysis, trying to understand the conditions that happen around and produced from them. **"The mine generates a set of hierarchies between what is undergrounded and what is accumulated on the overground, and how accumulation is managed across these states." (Yussof K., 2021).** Taking in account the current state of the extraction sites in Eordaia region, an aging state going to the closure of the mines and end of their repositories, analysis gains interest in the future possibilities of those territories. This research is an understanding of the current position towards the futurity, the things are yet to be done, approximating a modern locality, the "terrestrial" state. Going to that prophesized state, extraction sites wound create a new future archaeology, signs of an era of Anthropocene and a wounded nature. So goal of this project is the restoration of this ecosystem, the revival of this inert anthropogenic environment.
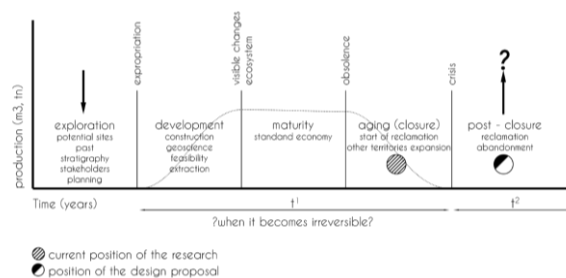
diagram 2 life phase of an open pit mine. In circles the position of research and design. Question is how the future arrow should be placed.

current timeline

attractor 01
local

new timeline

attractor 02
global

attractor 03
terrestrial

diagram 3 theoritical framework:As from local humanity turned to globalization, a new timeline is heading to modern return to local, the terrestrial. Diagram is based on the lecture of Bruno Latour about Anthropocene (2018)

METHODOLOGY

The present research proposes a combination of three related perspectives. Firstly the analysis of hinterlands, as the regions which carry industrial production. The main analytical tool is mapping base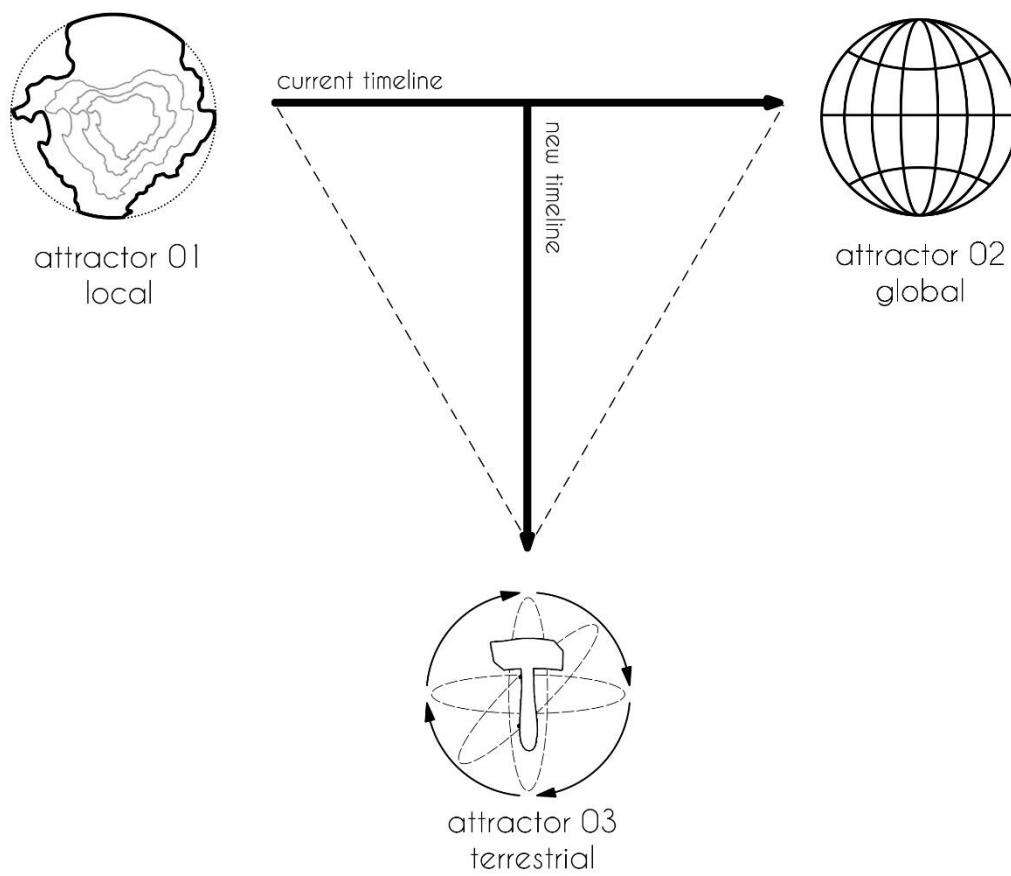d on the case study in the region of Eordaia, *"Revealing new dimensions and extents," (Belanger, p102).* Secondly a scale down view to the actual extraction sites, mines and quarries of the hinterland is the next step. The aim is to find how they work, the hidden data that exist in the soil and relation to human mind, finding the spirit of place.

Thirdly, the last perspective is the role of human in mining activities and materiality. Under the scope of crafts(wo)man, the worker with deep knowledge of materials and connection with tools, the research intends to integrate the architect into the design process of those heavily industrial territories and evaluate his/her role. The three topics do not only represent a scale analysis, but rather a cognitive evaluation of extraction. Based on their oppositions and bonds, extraction is perceived as a system of relations.

theme: hinterland in transition
(macro scale-region)

analysis of region as a network of relations, cities community.
- diagramms
- literature review
- mapping

theme: genius loci/uncanny
(meso scale- extraction sites

operation of extraction sites. focus on mine, quarries and working condition
form/function/atmospheres
- mapping
- literature review
- narrative mapping

A. HINTERLAND

B. SITE

C. MIND

theme: material agency/craft
Micro scale - human perceptio

analysis of materials (entities), tool, machinery. Also the human mind and perception, such as workers, analysts and cities community
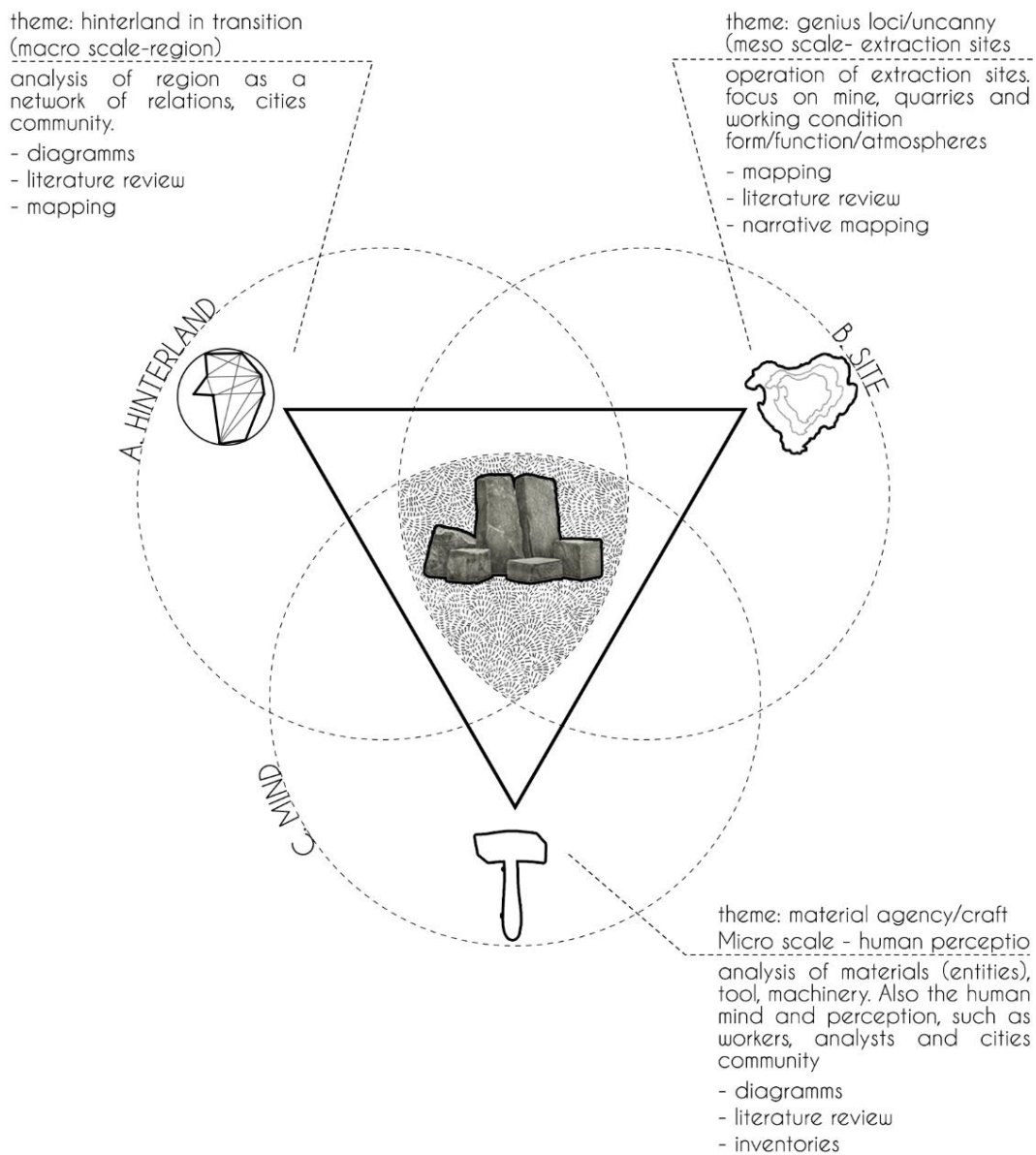- diagramms
- literature review
- inventories

diagram 4 Methods of analysis: three perspectives HINTERLAND-SITE-MIND

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A. HINTERLAND

The term 'hinterland' is used here to **"demarcate the variegated non-city spaces that are swept into the maelstrom of urbanization, whether as supply zones, impact zones, sacrifice zones, logistics corridors or otherwise." (Brenner, Katsikis, 2021, p24).** Those places are left out of this analysis, as cities remain the core of analytical framework. The term is relevant to the case study, as Eordaia is far away from the Greek coastline and thus, accrues the majority of hinterland traits.

The processes of urbanization are metabolic procedures, in which inflows such as materials, water, labor, fuels produce byproducts in the form of pollution. These inflows are produced mainly in the Hinterlands **"cities are not self-propelled...... The urban process is materialized within city spaces while invariably exceeding them" (Brenner, Katsikis, 2021, p25-26).** Despite their contribution in this metabolic procedure, Hinterlands are a "black box" left without analysis. Whatever happens in their interior remains enigmatic, peculiar or uncanny. It is like a **"terrain vague" (De Sola Morales Rubio I. 1995)** where information is opaque and ambiguous. Thus project searches for clarity.

This section of Hinterland sets the ground for an investigation that starts not in the industrial sites or mines, but rather the interconnected cities, villages, landscapes that take part in this metabolism. Extraction is the aggregate of the secondary practices around extraction. **"When all these practices are functional, coal transforms into commodity." (Mezzadra S., Neilson B., 2019, p139).** Thus the investigation includes traces that are not only the natural elements of the terrain, but an imbroglio of natural and social processes. Hinterland is presented as a Network of mutual dependent relations *(diagram 03)*, for a holistic understanding of the **"various hidden forces that underlie the workings of a given place" (Corner, 1999, p197).**

A major theme of the Hinterland is the characterization of **"chronically unstable" (Brenner, Katsikis, 2021, p29**). This characterization is related to the fact that industrial infrastructures become obsolete without their depreciation, because of the depletion of natural resources. However their prosperous role impels a further infrastructural action and a search for resources in neighbor areas, a kind of expansionary policy. These two factors create a territory focused on extraction, a **vicious circle** of constant exploitation. This circle of lands impossible to reintegrate, recover, reevaluate is the cause of irreversibility. Instability is a temporal aspect of the Hinterland that raises the conversation of time. Time implements subjectivity, as every temporality is a specific event into times continuity. Every temporality is a fragment of the whole history of the Hinterland, which starts millions years ago with the creation of the sedimentary rocks. The live span of a mine or quarry, or in this case mines' dissection, is a segment of the whole, a specific event. By searching specific events, multiple understandings of the same region are formulated because of the connection of different traits and points. Focus of the thesis is to understand the fragments of the whole and their relations in order to find getaways for surpassing the vicious circle of irreversibility.

A1. The agency of mapping

In order to understand the complexities of the Hinterland, a series of maps is proposed. Mapping has the purpose of both discovering, unraveling, digging traits of a region and also find relations among those traits. James Corner characterizes mapping as an operative tool, which **"agency lies in uncovering realities previously unseen or unimagined, even across seemingly exhausted grounds." (Corner, 1999, p197).** In that sense the project uses maps not only as a reproduction of reproduction of traces, but rather as an operating table for experimentation.

Is it dead or ongoing?

However in extraction process the most information is hidden in the subsurface. **Thus the operating table should not only present a horizontal terrain, but also extending in the vertical direction**. In stratigraphy, a vertical section of ground used in geology and archaeology, every layer of soil, or strata, hides different information and role of the history of a place. In sites of extraction, stratigraphy is even more important, as fossils and stones are products of soil formation over time. The concept of layered territory is used as a vertical stratification of site analysis. (Sheppard, 2013) Layering is also useful for an independently analysis of every process. Complexity and understanding cannot be gained easily by the limited scope of a **master plan**. Despite all forces coexist in an interdependent

state, *"to understand the land as a series of separate strata suggests the possibility that such forces can be understood as operating independently." (Sheppard, 2013, p80).* Layering results in a "mosaic field" with a rich complexity.

A **third step** of the analysis is a **combination** of the different conclusions of the horizontal and vertical maps. The aim is to find moments or sharing points among the different layers. Latitudinalization and Altitudinalization (Belanger, p105), despite their thorough analysis, stay two dimensional. However the sequence of extraction is an extrusion of the vertical section of stratigraphy, a three dimensional field of operations evolving though time and space. This **composite map**, a superposition of the outcomes of the vertical and horizontal surface mapping, may produce a **heterogeneous volume**, uncovering strata that are not visible with the other fields. *"Open to any number of interpretations, uses, and transformations in time" (Corner, 1999, p222)*
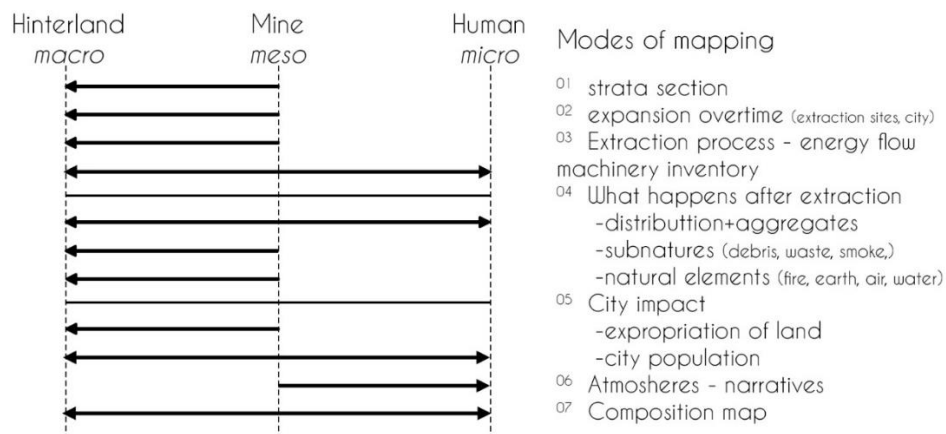

diagram 5. Modes of mapping in relation to the three concepts of research HINTERLAND-SITE-MIND

secondary mine operations
Drilling, water sources,
pumping stations, waste from
biological treatment
1952 - 2050

factories + roads
1952 - 2028

relocation of villages
1972 - 2021

mine fields + operation fields
1939 - 2028

natural habitats +
forests + river
soulou

archaiological findings
neolithic period ca 7000
-1700BC
settlements houses, tools

geological map -
pleistocene
- saringiol swamp as
trace of older lake
- lignite + rock formations

a layered territory of the mine of Eordaia, Ptolemaida Greece. Map created by Ilias Vouras

diagram 6 inventory of photos from the region of West Macedonia. Region as a network of relations

B. MINE: AN UNCANNY ENTITY

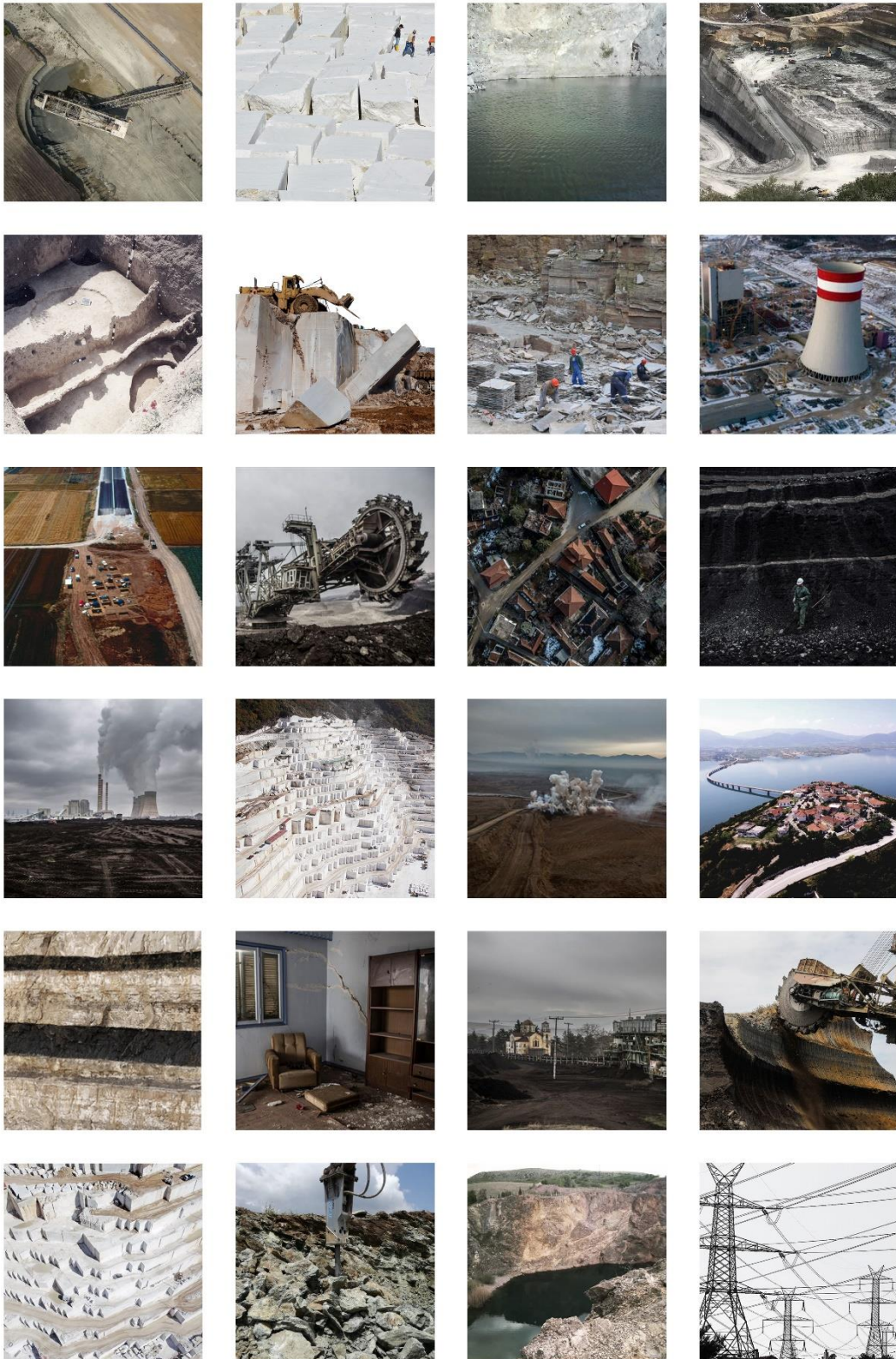As described previously, the mine is characterized as an ambiguous territory. This ambiguity creates an atmosphere, a connection with the human mind. *"Soil is not always what is expected, hiding histories inside its layers" (Yussof K., 2021)*. The term uncanny, created by Sigmund Freud and expanded from several writers as Anthony Vilder, Nicholas Royle can be used to give another dimension to those sites and analyses how human mind perceives, senses and gives meaning to those territories. Terms like terrain vague, wastelands, subnatures, constructed landscapes, third landscape, could all be pointed out under the umbrella of uncanny. Expanding to this idea, mines instead only analyzed by its operations, they could described from a phenomenological perspective. Goal is to find the meaning of place creating a narrative over sites of extraction

The subject of the uncanny is related with the subject of aesthetics, a theoretical term associating with experience and the qualities of feeling. It is similar with what is frightening and it is connected with emotional impulses. However there is no clear definition of the uncanny. Fear, uncertainty, unfamiliarity are common adjectives that accompany uncanny, but not a clear description. This implication comes from the fact that uncanny differs from the sense of absolute fear or its derivatives, **it is something in between.** Anthony Vidler in his book *Uncanny* spoke about the non-specificity of uncanny and underlined that *"the uncanny seemed easier to describe in terms of what it was not than in any essential sense of its own" (Vidler, 1993, p22)*. Also its meaning differs between languages and seems closer to the English translation. Greek word for it is "ξένος" or foreign and latin «locus suspectus" or suspect space, but in English uncanny means beyond knowledge or skill. *"It is better characterized as dread than terror, deriving its force from its very inexplicability"* (Vidler, 1993, *p23)*

Mines operate in this in between ground, as a dense network of artificial and natural landscape blends. This mixture create a feeling of terror for its distance from nature, but in parallel a familiarity based on the unraveling traces of earth history. Freud in his endeavor to describe uncanny resulted in a preliminary conclusion that *"the uncanny is that class of the frightening which leads back to what is known of old and long familiar." (Freud, 1919, p01-p04).* Mines support this atmosphere through the intuitive scope of the Hinterlands' habitats, who learned to recognize mines and their relating structures with their prominent figures as landmarks and symbols of their current living. However this sequence of what is novel, unfamiliar results to frightening is not a relation that always exists, so further factors should be included to the equation. Freud continued his investigation based on what we experience and what myths and tales reveal for our internal world.

Then the question is when those myths emerge. Through the extraction process myths about the past are revealed and new tales are created. *"The digging up of the earth's surface has both ancient mythological and contemporary resonances" (Mezzadra S., Neilson B., 2019, p139).* The unconscious stories that science cannot control, products dating back in the humans digging of the mother womb earth to find shelter, blend with industrial stories of extraction and anthropogenic powers that reshape the soil. Furthermore the possibility of abandonment, after exploitation, of extraction sites transforms the perception of these erst heavily labor areas, feeding anew the contemporary lore. Under this umbrella mines and quarries could be understood as archaeological sites, where mysteries about nature and society are hidden. *"Like archeology, which is time read backwards," says Lucy Lippard, "Mines are metaphorically cities turned upside down, though urban culture is unaware of its origins and rural birthplaces."* This mystery gives birth to the uncanny.

Mines can be described as places of no locality, as they are related to a turning point, a detachment from their foundation, nature. This transition, product of homo faber and his urge to turn things into his benefit alienate human from his environment and as consequence these landscapes from their current being. Vilem Flusser associating mines and quarries with factories described as *"places with no topos"*(locus, topology). However this characterization could be overpassed. "Topos" describe locality, navigation, *"become friends with a particular environment" (Schulz, p20).* Its absence, loss of orientation, feed the uncanny and its myths as one of its basic characteristics.

One of uncanny homological words, the sublime could give answers to these site less territories. Sublime derives from the vertigo that comes from the height, depth, extension of an enormous stone like a mountain. **"The sublime, as defined by Kant, stemmed primarily from a feeling of inadequacy in the face of superior powers**" (Vilder, p52). As mines represent mountains upside down, an anthropogenic landscape, they hold this character. But uncanny is more than that. Space of uncanny, according to philosopher Burke, is *"a space that mental space where temporality and spatiality collapse"* (Vidler, p39). Inside these frame of lost orientation and immense landscape the abandoned

heavy machinery of open cast mines could blend with imaginary. ***"They nevertheless make up discharged corps left behind by the defunct empire of mechanics. These populations of instruments oscillate between the status of memorable ruins and an intense everyday activity"***. (Vidler, p170). *Tools become fragments of an obsolescent system, they take folkloric look, creating a type of ruination*

"Site" today is a multiplicitous and complex affair, composing a potentially boundless field of phenomena, some palpable and some imaginary. (Corner, 1999, p208)

In the south part of the mine, "south field" there was a march during Neolithic period. The march called "Yellow Lake" or Sarigiol by the ottomans, was drained during the decade of 1950 and allocated to local farmers. In parallel lignite mine operation started in the north part of the marsh. In 1986 an archaeological excavation was conducted, revealing human settlements of Neolithic period in the south part of the Yellow Lake. This was the beginning of excavations revealing archaeological sites along the futures' mines territory, compelling lignite company (DEI) to conduct extensive archaeological research prior to every mine field opening, to avoid destruction of archaeological evidence. This sequence is now relevant, as Dei conducts an environmental evaluation for every part of the mine before its opening, giving proposal for future reclamation strategies. Along the findings of stratigraphy, mostly ceramic tools, there was an abortion of construction materials for houses. However "**artificial drainage of the basin floor, strip-mining and deep ploughing after eliminated crucial evidence relevant to archaeological questions." (Fotiadis 2019)** If the excavations were held during mines opening the questions would be answered.

Operations (This segment goes from the smaller to the largest scale): In an open pit mine main protagonist is the bucket-wheel. Its purpose is to extract lignite, ***"Ptolemaida mines have forty bucket wheels".*** However bucket-wheel is not the first machine. Bucket wheels due to their size cannot operate up to 15 meters deep from surface, so trucks are responsible for the removal of soil until fifteen meters. After extraction, conveyor belts transport the lignite close to the operating factories. Sometimes lignite from conveyor belts ends to the Bunkers "spreaders", large machines which remove the soil and extra material from coal, and then transported with trucks to large areas close to factories. This large piles of lignite are called by the local "coal lakes". Coal is used as a fuel for electricity production, with the thermal water from the engines transported also to local homes as tele heating. Coal burned in Ptolemaida factories supports the sixty percent of Greece's electricity.

Parallel to this operation the sedimentation is taking place. Soil and rocks which are not useful are transported from Bunkers to large piles in places where mine operations are not interrupted. There are two types of sedimentation, interior and exterior. Interior sedimentation is happening inside the operating mine, in a form of piles. Exterior is happening in the nearby areas, creating hills of ground as they are easier to move. Every sedimentation process is destined to reclamation, with trees planted by the company or thriving though third landscape. Exterior sedimentation usually is hard to trace as the created hills seems almost natural, with terraces being the only trace of artificial and the existence of no local trees. Topographical alteration are more intense inside the mine. Topography follows the movement and pace of machinery. Bucket wheels create spherical cuts and spiral pits supports truck transportation.

In these sub natural environment nature puts its limits too. Extraction is held up to the aquifer horizon, in order to prevent flooding. Soulou River is passing through the mines territory, the main underground river of the region, defying also the borders of every segment of the mine. The south part of the mine now is operating, as the North part is completely exploited. The south part is divided in three fields, "Mavropigi", "Kardia" and "South" respectively. Accordingly the factories that are not close to the mines have closed. In parts the curse of the river is changed, in order to supply the mines with water and also to prevent flooding.

The new archaeology

The new is supported, stands on the old and evolves. Old is the ground, the seed, the fertilizer for the new to grow. Every move, action, story, exploitation leads to a continuum conjugation of time. Human agency is the plough, the catalyst and tool for new to develop. The quality of the tool defines the character of new. Old is a part of the new, either in the form of wound or memory. New is the fruit, until it becomes part of the ground again. There is no permanence, everything flows.

C. THE BEAUTY AND THE CRAFTSMAN

The goal of this segment is to position the architect into a landscape that is constructed by **functionalities of industry**. How a designer can approach mines as a site of analysis. Under the scope of return to local, might the notion of architect could take extra attributes that involve materiality. Assumption of this segment concerns **irreversibility.** Extraction sites are considered places with no future, as after the end of repositories they are redesigned or they are semi reused, left in a mediating point between abandonment and use. If we could reverse the position of the entities that associate with this stagnation, the human and non-human entities, we could find proposals and gateways for mining sites recovery. The proposal is the reconsideration of the role of materials and nature as operative not passive objects. In this transition the participation human is evident, so its role as an analyst should be reconsidered, as the accountable finding the solution to irreversibility.

-Or Do we want to reverse it?

The beginning of the reverse perception of non-human entities could place in one of the most famous stories from ancient Greece, the one of Pygmalion and Galateia. In this myth, the sculptor Pygmalion was so impressed by the detail and beauty of his creation, the female sculpture Galateia that fell in love with it. His love and affection to the sculpture intrigued Aphrodite, goddess of love, who turned it into a woman. Galateia eventually married Pygmalion and gave birth to a daughter, Pafos, which name gave to one city in Cyprus. The story of the breath of life in a statue is encountered several times in Greek mythology, every time with a different meaning.

In story of Pygmalion, the causality of the object reforms, partially defying the hylomorphism laws. The objects becomes alive, obtaining an autonomous existence and intuition *(diagram 7)*. A contemporary approach to the myth recalls for a separate ontology of the object, capable of producing work. In his system of networks, Bruno Latour implies that object have agency too. The equal approximation of human and non-human as a ***"summary of entities mobilized to render long lasting asymmetries"*** in order to uniform society turns to the observation that objects change the ways that an action is produced. In this notion objects are active participants in social relations, as ***"anything that does modify a state of affairs by making difference is an actor" (Latour, 2005, p71)***

However objects actions are difficult to trace, because of their associable behavior. Hence Latour proposes humans to make objects speak, a sympathy of objects. In other words there is a first observation of the traces, and then an action of revealing. Of course in the myth of Pygmalion the tool of prominence is a divine intervention of Aphrodite, in the network context there should be other ways for this reason project attends to make a tracing and identification of the entities that appear in the three analytical scales, *hinterland-mine-mind*, a form of catalog that filters entities before revealing and understating their actions. (diagram 8*)*

But who is going to bare the role of reconstructing those territories? Who is going to make non-human entities alive?. Hypothesis of the project is a role that evokes materiality, a human close to craft. Crafts(w)man diverges from workman. The term implies a deep knowledge of the materials, a creative imagination similar to the designer and not only a skilled hand which is involved in the constructing process. **"Knowledge that allows him to see beyond the elements of a technique to its overall purpose and coherence.... It is the knowledge in which making and fixing are parts of a continuum."** *(Sennett, 2008, p199)*. Craftsman has a deeply attachment to the object, an affinity that derives from a knowledge of material as John Berger underlines **"Each confirmation or denial brings you closer to the object, until finally you are, as it were, inside it: it contours you have drawn no longer marking the edge of what you have seen, but the edge of what you have become."** *(Pallasmaa, 2009)*. Designer now is defined with an additional role, a transformation from architect to craftsman. (Figure 4)

It is useful to trace the traits that make objects and materials alive. The work of craftsman splits between two sections, process and materiality. In greek language *"Τεχνουργος"* is a combination of "τεχνική" = technique + "έργο" = artifact. It relates to the production of artifacts or objects with a more artistic value. A Craft object in greek could be a handmade cup or a poem or song. **"Techne refers to how to, the knowledge of making things and a body of procedures and skills." (Risatti, 2007, p99)** The crafts(w)mans' knowledge derives from praxis, meaning practice, the repetitive act that ends in a final result, in a procedure of try and error. The workman understands the possibilities of the material, fractures and prominence because of the multiple tries over the same product. However a craftsman does not stay only in praxis, his capability to understand the object and to experiment with it in order to create a more artistic result, has theoretical elements and differentiates him from the workman. It stands between art and architecture, design and construction, maker and user, theory and praxis.

(Sennett, 2008, p11. Risatti, 2007, p162). This knowledge that derives from praxis, muscle memory, is called motor memory or "motor schema.

The motor schema could relate to the Greek god Hephaestus, the protector of workmanship but also technology[3]. The cripple god invented lightning and fire, which later Prometheus stole to gave it to men. His prominent figure in the Greek pantheon is the archetype of workman with all the rumors of adhesion to the workshop and innovation. He married to Aphrodite, goddess of love, hence the strange relationship of workers with beauty. One of his names is "**cheirotechnon, which means simply handworker",** but as creator of fire, he manipulates and reinvents**.** Many theorists[4] tried to replicate and categorize this handworker and replace workman in contemporary design. Lars Spuybroek speaks about motor schema, a motif that humans have in mind when making things. We do not have a mental image of the end product, but the different steps that lead to that. So motor schema is an organization procedure and not a description or drawing of the actual form. It lacks a fixed or geometric morphology, it is flexible. "**A craft work has not a predetermined result, the procedure is predetermined." (Spuybroek. 2010, p31-34)**

Concerning work process, David Pye proposes a *"**workmanship using any kind of technique or apparatus, in which the quality of the result is not predetermined, but depends on the judgment, dexterity, and care which the maker exercises as he works."** (Pye, p20). During the making process, the object is always at* __**risk,**__ *however* the risk of failure is considered beneficial. The difference in reading of imperfection releases the maker who now is not obliged but pursuits the entanglement with the object. Each material is left to its own properties while at the same time recognizing the true skill of the craftsman. By questioning, the design process becomes open to change, fresh to problem solving. That question will lead the craftsman in a beneficent **obsession**, Richard Sennett implies, having to turn constraints and contingencies into opportunities. *(Sennett, 2008, p243 - 252).* This question and obsession will create an affiliation with what encompasses the raw material and its properties, meaning the site from which is extracted, the ways it is distributed. This obsession will transform to caring and eventually love**.**

C1 House of craft

The workshop stands as the place of creativity, innovation and authority of the craftsman. It presents the autonomy of the maker, who has the freedom to control its makings, thoughts and search for technical knowledge. Hence the only reason of division between workmen is manual skill. Workshop is **"a productive space in which people deal face-to-face with issues of authority." (Sennett, 2008, p54).** Inside a workshop, the master craftsman gave information and knowledge to apprentices, who when time arrived gained experience and became masters themselves. *The formation of the workshop changes through time, from the medieval workshop where the whole family lived in to the almost senseless lab of modern science, however its traits are similar through the ages.* Despite its material purpose, workshop is understood for its social value, as *"**workshops have glued people together through work rituals, mentoring, through face-to-face sharing of information."*** This sense of collective agency of craft refers to a more social, immaterial trait of the workshop. In this point the division between art and craft becomes clearer, as "***the craftsman outward turned to his community, the artist inward turned upon himself" (Sennett P65).***

Locality – materiality. The application of materiality in the region is related to stone. Different types of stone are extracted in different quarries throughout the region, giving opportunities to local economy. The quarries are applied for the structure of the mines and the factories, in the form of gravel that is used in the production of concrete for the building shells. Other use is in the form of pebbles in application to garden or mosaic pavements. Third is the extraction of more precious quality stones, which are used in building facades or construction of public domain, meaning marble. Most famous marble quarry "Tranovaltos" is now abandoned, due to but extraction technic. The mandatory by law use of its stone in works of public domain shows its importance. Forth application is the use as a main construction material. Close to a mountainous rocky landscape, people of the region created houses with local materials, and stone is in abundance. Vernacular houses, from mansions to shacks, implemented the same structural elements as stone, wood and clay were in abundance. Even from seventeenth century the local craftsmen where prominent figures of society, as many of them were responsible for construction of cityhalls, mansion and infrastructures like bridges. Four villages took the

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[3] similar with Hermes and Prometheus
[4] Essay Nature of Gothic. The brief essay Nature of Gothic has inspired many theorists who endeavored to translate those characteristics in contemporary architecture, as the dilemma of repurposing craft emerged. Ruskin spoke about reducing the machinery use or making it more slowly. Lars Spuybroek took his ideas into technology and contemporary design.

name of the builders "μαστοροχωρια=villages of craftmen", close to the capital of the region, Kozani. Here we can find readings of the notion of craftsman. The master workers tried to try local materials to their limits, with good technic and compatibility, making the most of material quality. Local communities tried to self-sustain, an autarky with natural resources.

Speaking about material compatibility that material react with one another Peter Zumthor writes about stone that **"you can saw it, grind it, drill into it, split it, or polish it – it will become different thing its time. Then the tiny amounts of the same stone, or huge amounts, and it will turn into something else again. Then hold it up to the light- different again."** *(Zumthor, 2006, p25). Materiality in the case of craft opens* Unfortunately the notion of stone builders is slowly dying, as now the main construction material is concrete. Craftsmen imparted their knowledge in newer generations in the form of apprentices, however new technicians simply are not interested in stone for its less propagation. The last of the craftsmen of the glorious period are now old and with them the stonebricks knowledge will become extinct. This is related to the death of the workshop, or the transfer of knowledge, as the personal secret that every craftsman buries to his grave. Death of the workshop means the death of experimentation with raw materials and innovation.

> *"metal, wood, and clay evince a second category of material consciousness. The maker leaves a personal mark of his or her presence on the object. (Sennett, 2008, P130)*

The apprentices learn the practice of creating an object by repairing parts of an already existing and not by creating a new one. Creation of a new object was a work of master craftsman, who supervised the whole project. This knowledge in steps of the object, the motor schema is connected with the notion of repair. However inside the workshops "the masters set an absolute standard, one that often proves impossible to reproduce" (Sennett, p130) as by learning only parts of an object there is a need for assemblage, a thing that master craftsman kept for him. The apprentices lost information after master's death leading to a fall of the workshop, as the products lost the qualities of their master. The craftsman lost its home, lost its identity, then its capability, eventually he became a simple worker, a homo laboran. But how workshops are applied to extraction? What is the relevance of the sensual working spaces of autonomy to the hierarchical operations of the mines? The extraction should seek not the workshop, but the workshops' mentality. **(What I mean here is if we can see the mine as a workshop)**

To conclude traits of craft are useful for a shift in design and material culture. A workman is closer to nature and raw materials, creating a sympathy of non-human entities. By its intuitive knowledge, the motor schema, creates a construction procedure with freedom and autonomy, with elements of experimentation. He takes risks, which many times leads to errors, but imperfection is welcomed as a natural design process and a trace of identification for the user, a signature. Its house, the workshop is meticulous and towards the collective and finally creates him a feeling of creative obsession, which eventually will lead him to love the non-human and take care.

C2 Caring and repairing the wound

A definition of the word is that **"care is a species activity that includes everything that we do to maintain, continue, and repair our 'world' so that we can live in it as well as possible. That world includes our bodies, ourselves, and our environment"** *(Tronto, p26-32).* Care means the relationships that connect the entities together and not the object itself and its parts. All the things that circulate around a thing should be under appreciation. The care theory requires a change in perspective, it is inspired by the actor-network theory. Tronto continues describing five phases of the caring practice. Caring about is the identification of necessity for care practice and the attention of its needs. Caring for is the acceptance and allocation of responsibility, the decision to act. Care giving follows, which is the attention and care for the caring practices themselves, the acts of care. Fourth phase is care receiving, the additional acts of repair, maintain, keep control and alive the already made acts. Final act is caring with or the acceptance or caring practice from third parties and the willingness to cooperate. It is a procedure of trust and solidarity that leads to a creation of a community that acts, feels responsible for nature and environment.

Caring in architecture is connected with protection and shelters. In antiquity shelters provided protection from natural phenomena, through imitation of nature. By using local materials and climate conditions, vernacular architecture was deeply attached to nature. **"Survival in nature helps to generatively suggest that learning with and surviving with nature is possible to arrive at an architecture practiced as care for humans and non-humans alike"** *(Elke Krasny, 2019, p33-41).* The binary between culture and nature, slowly alienated architecture from its origin, as nature was oppose

to the standards of civilization that architecture wanted to represent. For this reason design focused on culture, art, construction. Elke Kransky *uses a new binary of architecture and care to align notions of care with autonomy, nature and craft. Speaking about non-human entities, caring architecture would be an* **"architecture that is sensitive to the values of repair, of preservation, of maintaining all forms of life and the planet itself."** *(Tronto, p26-32). So caring practice could be a shelter for both human and non-human entities, a place where they can cooperate.*

Protection and maintenance include a strange characteristic. Protect means that something is in danger, so the fear of passing, of losing something familiar and the responsibility of keeping it alive is a sign of care. Then taking care is to bring relief, to appease and is associated with animal care by feeding. By the act of nourishing the animal goes to tranquility. So a definition of care is to feel concern or look after. **"To think would therefore be to care for, which is also to say, to act, and to make difference: it would always be to think the wound" (Stielger, p398).** Wound is the problem that needs to be repaired. Repair means that something is not static as requires small steps to come up to a solution, so a solution.

A first act of repair is facing the problem. An exposure often means a creation of a narrative, as **"through the articulation of human care, management and action, perception of a culture and rights to land can shift"** *(Baracco, Wright, 2019, p68)* Often acts of neglect have the purpose to intensify the problem, in order to make it visible for somebody else, an interaction. As actions of care are not easily traceable, most of the time they get unnoticed as previously said about the tendency of non-human entities to stay in the background. And if you cannot see something, you do not understand it, and you cannot care for it.
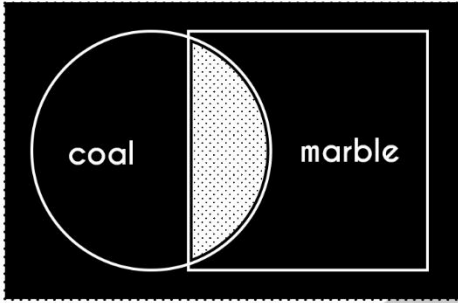
Parallel to facing the problem, Bernard Stielger invites designers to care about the present. By facing the present situation and its complexities, truth is revealed, or understanding the end of a particular event. (Notion of being-towards-death). Extraction process in Greece will eventually end, environmental violence and expropriation of lignite mines are already done, and the region is already broken. By years locals and government tried to prolong this economical fruitful situation, ignoring environmentalists and scientists who foresaw almost thirty years ago the slowly declined production due to lignite extinction. The coal face out, the post-lignite era will be more unceremonious. The being-towards-death calls for a more rational understanding of any situation. The synonym of being-towards-death is the notion of **"protention, or an anticipation of a future event."** *(Stielger, 396-398).* In Heidegger terms protention is the end of a being, different from death, and encompasses the notion of recovery and rebirth, hence death and future are connected. End of repositories mean the death of the quarry-mine, but with ways of repairing the wound could be healed.

The notions of care and repair associate with immaterial traits of the crafts(wo)man. Care not only means giving attention and consideration for something, but also searching for solution. Care relates to the creative obsession of the workman, who seeks answers predicting a future pessimistic or optimistic event. Craft could be a workman, toolmaker, landscapist, cook but also an architect. Though caring architect could transform and assimilate with current situation, architect as craftsman.

entities	non - Human macro —	Human meso +	mind micro ✕
hubs centers of an action many connections ○	/	/	/
mediators aggregates - between actions - links: they change action "transform, translate, distort, and modify the meaning or the elements they are sup- posed to carry." (Latour, 2005, p39). ◇	/	/	/
material agency non-human become actors "If there is human agency, then there is material agency.......there is no way human and material agency can be dis- entangled" (Malafouris L., 2013, p119) ↓	/	/	/

diagram 9: filter- catalog of entities

hylophormilm = ύλη (matter) + μορφή (form)

coal | marble

extraction

perception		cheap factory+industry workman (labor)	wealth architecture craftsman	
time		temporal not durable	perpetual durable	
Matter formation (potentiality)		sedimentary rock fossil fuel earth layers of strata	metamorphic rock stone earth (temp+ pressure)	
form opera		industry = combustion energy (intangible)	industry , carving architecture (tangible)	

stratigraphy

coal
"λίθος ανθρακος" = anthrax

marble
"μαρμαρο"= shining stone

human agency
human

material agency
nature, non human
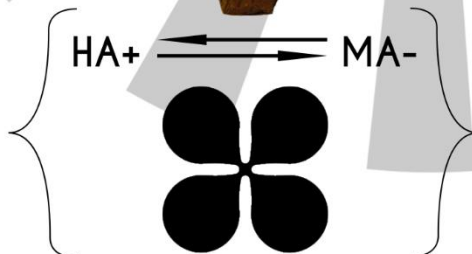
actuality

matter	form
agent, process	"τελος" final

potentiality
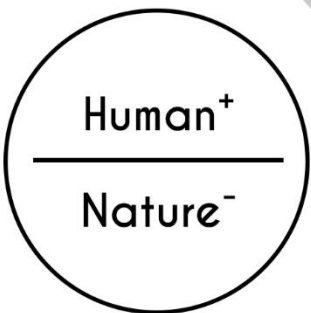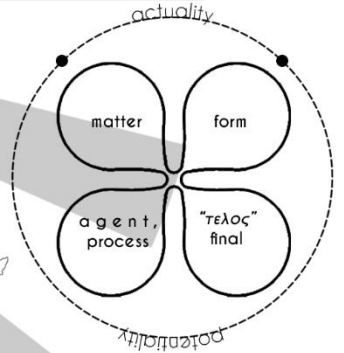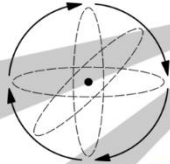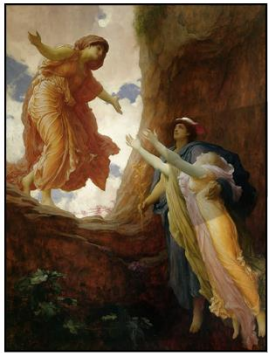
Human⁺ / Nature⁻

HA+ ⇄ MA-

ENTITIES

diagram 9: poster of relations regarding the muth of Pygmalion and hylophormism. How object can become entities?

REFLECTION

DAYS OF FUTURE PAST

The notion of digging, unravelling the soil layers scratches the parameter of time. "**If mining unearths the exoskeleton of geologic life to produce the nowness of contemporary life, its energy and communication networks, its pathways, it also creates an opening and the passageways of unintended fractures that lead into other undergrounds." (Yusoff K., 2021**) In that sense the temporal dimensions of a mine-quarrying those fissures that mining represents past through stratigraphy, deals with present through its connection with networks, but the question is if it could unravel potential futures. As sites of extraction are dealing with their potential exploitation and end of their repositories, a reversal of the digging method could be a claim for the notion of irreversibility. Digging unravels both past and future.

We can claim for potential futures that ***"in some sense, the cartographic act becomes both the synthesis of information and the initial registration of a potential site."(Sheppard, 2013, p79)***. In the concept of layering the reconfiguration, separate analysis and way of presentation of every unit opens a new ground not only for interpretation, but possible futures. ***"When these separate layers are overlaid together, a stratified amalgam of relationships amongst parts appears." (Corner, 1999, p. 219)***

Peter Eisenman argues that in manipulating mappings of the site and its larger milieu, the project can "evolve" a future form out of specific and unique local histories. Every piece, extract, of a layer is a fragment, through which a historical map could produce findings for the future. **"In other words, the way in which the narrative is assembled, the relating or registering of one thing to another, constructs a radically new fiction out of old facts."** *(Corner, 1999, p223)* Future is related with the uniqueness of local narratives, so the answer of the future can be hidden in the step backwards, the modern return to locality.

As the process is formulated, research is a study of the in-between concepts of the networks. The research focus is to locate, identify and comprehend the mediators, the nodes that connect the different layers of the extraction network, and not the nodes that exist in every layer. The study of the uncanny adds to that point, as it is placed between terror and familiarity in human cognition. For this reason also craft comes into place, as something in between theory and praxis, a mediating point. The three scales of macro (hinterland networks), meso (uncanny extraction sites) and micro (material agency through craft), are formulated to create a narrative over extraction.

Benjamin Bratton unfolds the idea of terraforming as a possible solution to futurity. Despite the term speaks mainly about shaping other planets to become habitable for humans, the current era, ***"Anthropocene is itself a kind of headless, plan-less terraforming"*** (Benjamin Bratton, 198). A terraforming against Anthropocene might be beneficial for the recovery of the environment, focusing in a solution of "re-wilding, reorganizing" the damaged ecosystems. The role of architecture in this terraforming is to reposition the symbols of Anthropocene, infrastructures, in collective memory, **"as an area that needs to be re-valued and deserves theoretical attention…. Terraforming by replacing architectural functions".** (Benjamin Bratton, 201). As industrial shells, machinery and equipment in the region of Ptolemais look to a future obsolescence, they need to be reposition in a different frame, keeping the role of transformation, tool but changing the purpose. A reverse ontology is to recover the landscape, not harming.

This narrative of extraction in parallel with the return to locality could be the base for the future design concept. The solution to the theme could be a reversal, starting from the micro scale and the cognitive reformation, alteration of materiality and designer. The reposition in human mind, a post human cognition could bring solutions to the meso and macro scale, the reclamation of the hinterland and the extraction sites. Through this projection in time the research could project possible sites of intervention and type of design project as final outcome, towards the futurity

THE TERRESTIAL HYPOTHESIS = METAPLASIS

Among the topics of the research goal is to construct a narrative over extraction and find gateways for a recovery, to see what conditions are now and what needs to change. The diploma thesis proposes the analysis of fields that are in the grey in between zones, in order to create consciousness of the parameters of extraction territories. Against entropy and pessimism research create a basis for a future design project. The solution to the theme could be a reversal, a mirror, starting from the micro scale and the cognitive reformation, alteration of materiality and designer. The reposition in human mind, a post human cognition could bring solutions to the meso and macro scale, the reclamation of extraction sites and eventually the hinterland (diagram 10). Through this projection in time the research could project possible sites of intervention and type of design project as final outcome, a productive vector towards the futurity.

But what this solution could be? The terrestrial state, a modern return to locality implements an initial look into the past of the region of Eordaia. The local communities were based on agriculture before the great economic potential that soil discoveries brought, changing life of inhabitants. However this solution would be immature, as research claims that a static architectural proposal of a large master plan would leave out essential parameters. Hence the new, evolved architect should be closer to the non-living things and the necessities of the living. Aim is not to propose a fixed state, or a manifesto, of solution, but rather an evolving process of a culture that cares. A sympathy environment and the notions of earth could make these stones, or better dead places, alive.

Following the notion of fluidity, a non-static solution, the tools of the architect adapt. Through the passage of this research the design domesticates tools from craftsmanship, the mentality of the craft(wo)men to treat their objects with passion, proximity, understanding. The way of manufacturing, altering and assembling with care adapts to the transition phase of a mine. The coal mines need not the workshop, but the workshops mentality.

The transitional phase of a mine, the pursuit of the lost wounded nature is also non-static. It is a gradual, slow transformation of the forces inside it. The transition should follow the notions of nature, as the strata of earth were formed by forced expanded in a vast timeline, bigger than living entities existence and understanding. Hence the transcendence of a mine could not follow the fast pace logics of extractivism and industry, but rather a slow transition affecting step by step the mines network. Animals, plants, humans change their actions in different rhythms, volumes, capacities. Through a slow process of change, those asynchronous temporalities would find a new, coherent tempo.

The thesis deals with the change of forms through finding a solution. Change through the notion of shift, molding, uncovering, reassembling, and repairing. The approach analyzes forms that already exist inside a topography of a critical zone, as that of a mine. Subnatures, lost and found materials and mechanical parts, hidden narratives about stratification, notions of earth and local communities, are all parts which entail design possibilities. The thesis, both theoretical and design, attends to create something anew, but from a core that already exists. From the existing foundations, gravitational points, design is a reshape of old technics, material, design logics, tools and methods of adaptation. A re-think.

Through this enormous multilevel territory the project is divided in four parts, objects, placed in in different parts of a segment of the mine, that of Mavropigi mine. The four objects are outcomes of the understanding of the mine and its forces. The objects with different character, try to investigate through design theoretical questions and possibilities of the mine, setting earth and soil as the core of material and spatial interventions aiming at initiating various regenerative processes. Design has the intention to reform, reshape gradually and with respect the mines structure in order to turn it into a productive place with coexistence of nature and humanity. Thus the Greek word "*Metaplasis*" emphasized in my title denotes the creation of something anew by altering its form or its composition. It is

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a combination of the word "μετα" meaning change, transition to something new, and the word plasis meaning process pf formation, sculpture, shape. Hence my thesis is that process of making, changing, terraforming, sculpturing, manufacturing, is significant, thus every intervention attends to show the process of creating.

The program inside the mine spread around its topography as a series of interventions or architectural objects. Every object is unique but finds similarities. Mirroring four categories of earth formations the semiotic diagram, Greimus Square, (diagram 15) assists to extract useful conclusions and relations between the groups of four interventions. Also the diagram assists in the reformation of methodology and functions. In the course of methodology there is a gradual transition from more pragmatic structures to more conceptual. Some interventions closer to the formations of earth diverge from canonical forms, resembling sculpture, as more functional programs come closer to architecture.

The research developed a theoretical background for the design proposal, understanding the complexities of a coal mine. As theoretical concepts of repair, care, craftsmanship, terraforming, uncanny were developed under the bigger framework of Anthropocene, a base for the concept was set, leading to a group of four interventions. Every intervention try to balance architecture and landscape, craft and the object, theory and praxis. The outcome of the research and design is that the mine is a study of the in-between spaces and concepts, where myths could exist and thrive. A metamorphosis, reformation, of the mine come from the development and contradiction of those myths and narratives.

The architect, coming together with the mine in his/her transition phase, cannot change entirely the form of the mine, not only because of the reasons mentioned above, but his is not powerful enough. But the narrative around the mine, the perception of the people and the entities to familiarize, come closer to a mine and extractivism can shift. Then the solution would eventually come. The mine is the amalgamation of local narratives and notions of the earth. Its next step towards futurity, the terrestrial state, it is the amalgamation of these exact logics. A Metaplasis.

M1
ARCH
WORKSHOP

M2
LANDSCAPE
HOLE

contrary - opposition

architecture deixis

landscape deixis

0 Myth: Hephaistos, fragment
1 function: workshop
2 materiality: stone
3 vernacular : aloni=mill
4 human
5 earth formation: piling
6 temporality: human
7 multiplicity : many
8 care: repair materials, repair wound
9 subnature: retail stones
10 Leisure + work
11 traits: lost of orientation, sublime
12 sculpture: no
13 terraform: no

Myth: persephone 0
function: pools, gathering 1
materiality: earth + concrete 2
vernacular: cistern 3
human - animals 4
earth formation: extraction 5
time: semi-perpetual 6
multiplicity: not replicable 7
care: preserve the wound 8
subnature: stratigraphy 9
Leisure 10
traits: lost of orientation, sublime 11
sculpture: land art 12
terraform: brutal 13

0 Myth: labyrinth, demetra, flora
1 function: gardens, repository
2 materiality: earth-stone
3 vernacular : archaiologiacal grid
4 human - animals
5 earth formation: erosion
6 time: temporal
7 multiplicity : not many
8 care: prevent , cultivation
9 subnature: no
10 Leisure+cultivation
11 traits: lost of orientation, find nature
12 sculpture: NO
13 terraform: less. retail walls

Myth: pygmalion, medusa - monster 0
function: soil recovery 1
materiality: concrete from earth 2
vernacular : cistern 3
human - animals 4
earth formation: mold - earth form 5
time: perpetual 6
multiplicity : not many 7
care: prevent , cultivation 8
,subnature: mud 9
work 10
traits: grotto , statue becomes alive 11
sculpture 12
terraform: less brutal 13

-M2
NOT ARCH
WALL

-M1
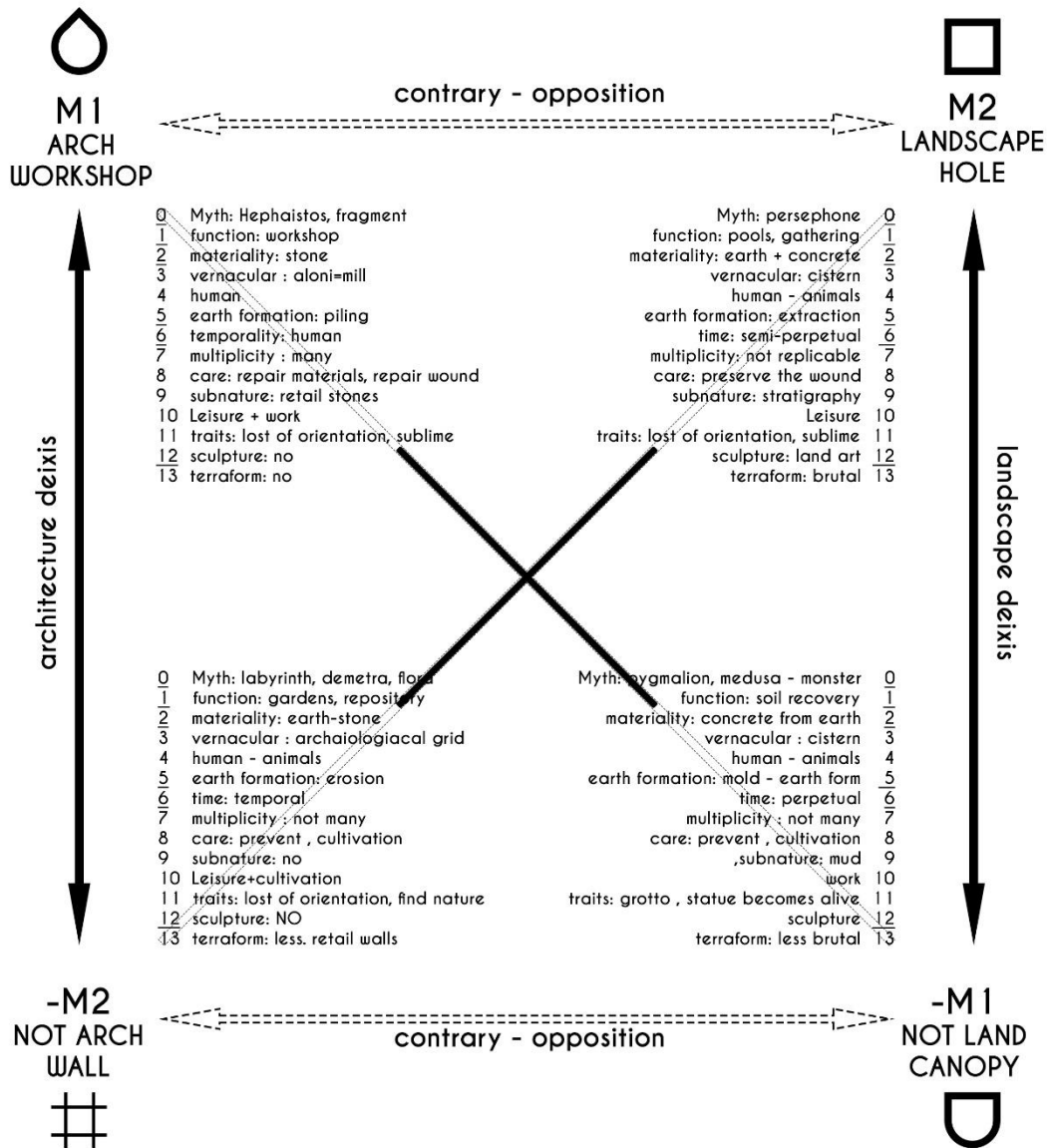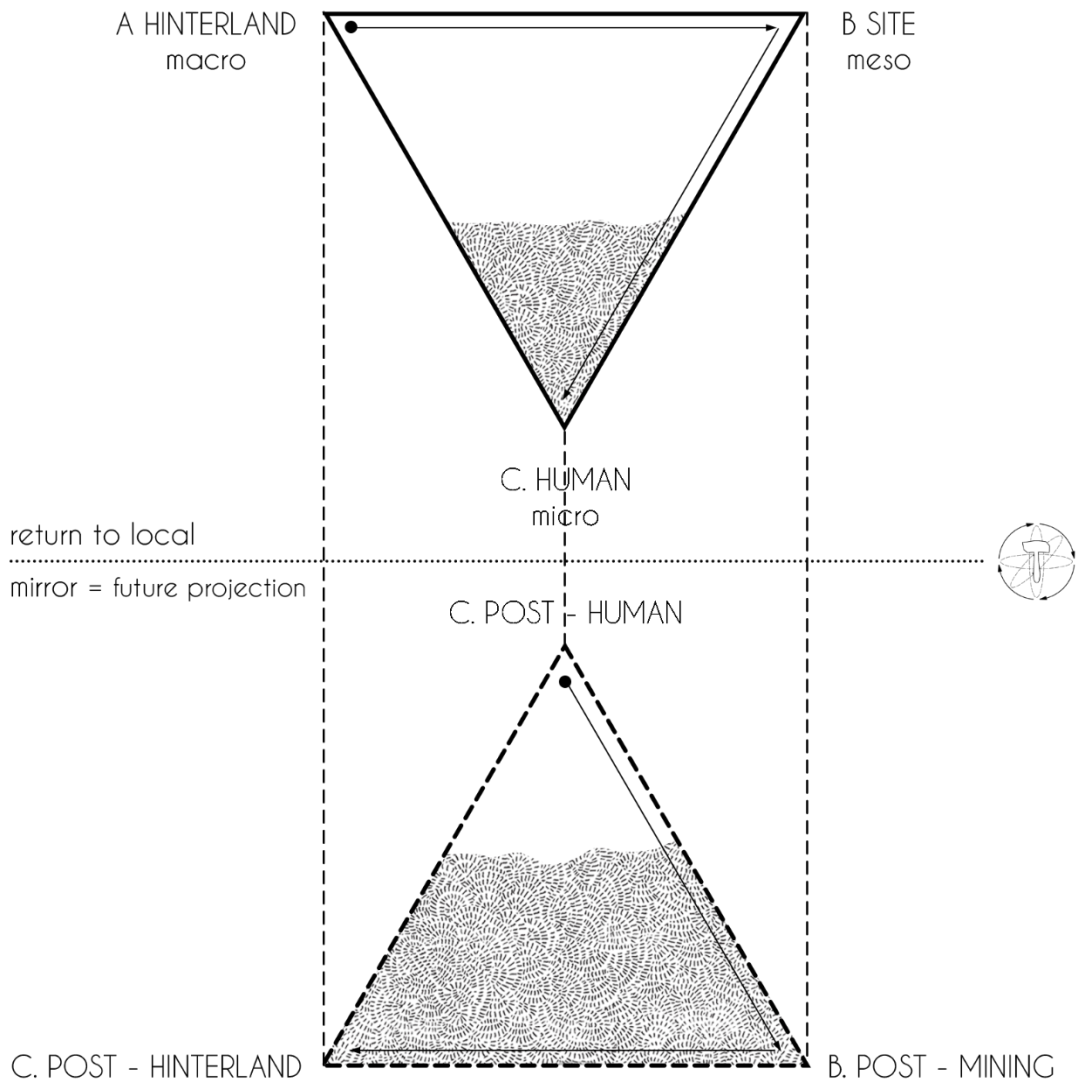**NOT LAND**
CANOPY

contrary - opposition

diagram 15 seimiotic diagram explaining oppositions and similarities between four architectural objects inside the mine of Eordaia, West Macedonia Greece. Based on the seimiotic diagram to find similarities between architecture and landscape by Angelil M., Klingman A., (1999), Hybrid Morphologies infrastrustures, Architecture, Landscape. DAIDALOS

A HINTERLAND
macro

B SITE
meso

C. HUMAN
micro

return to local

mirror = future projection

C. POST - HUMAN

C. POST - HINTERLAND

B. POST - MINING

research analysis a-b-c = design analysis c-b-a

diagram 11 possible design proposal going from research to design analysis. A possible solution to the post mining and post hinterland state through the cognitive and micro scale analysis of the human mind.
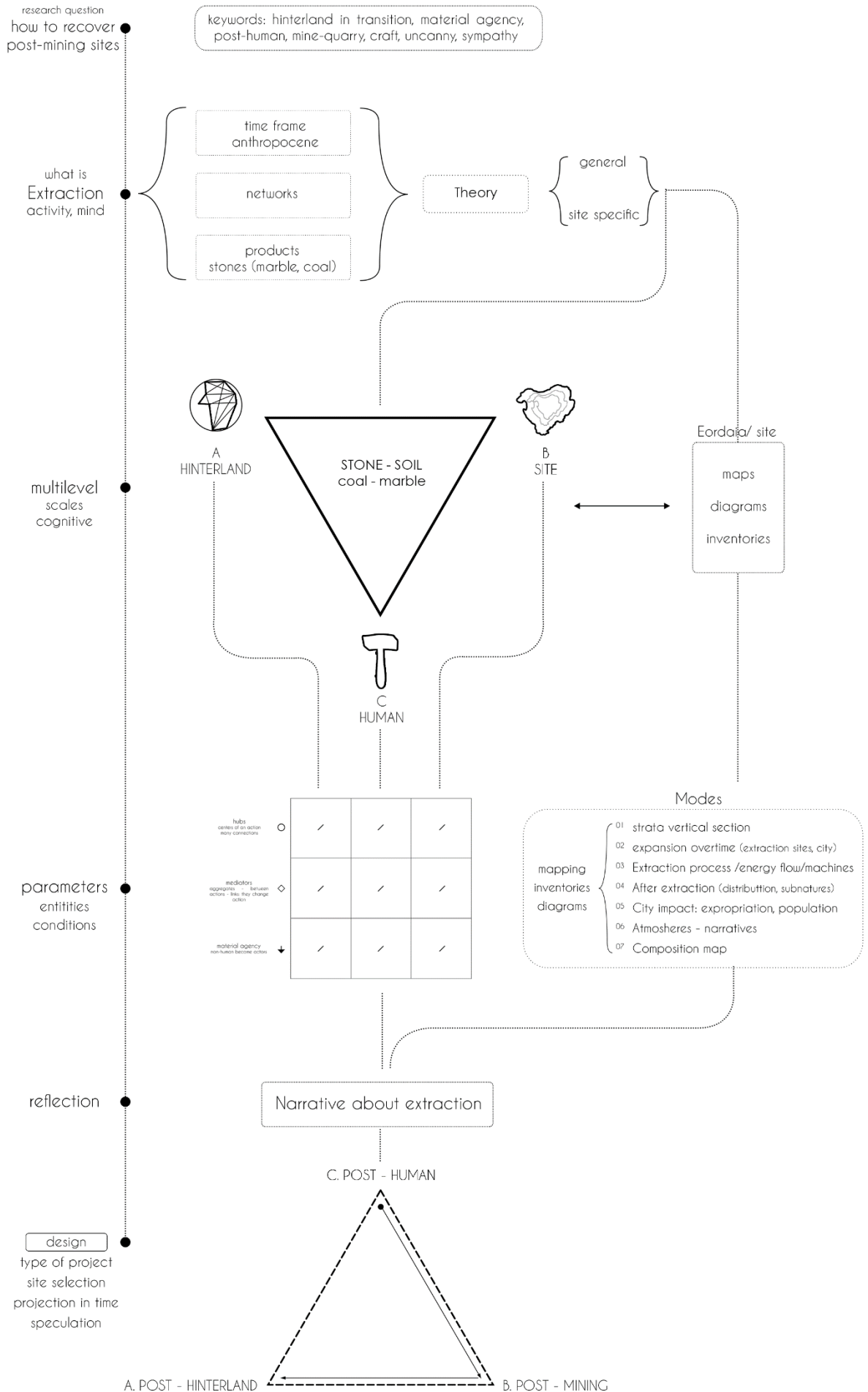
how to recover ●
post-mining sites

keywords: hinterland in transition, material agency,
post-human, mine-quarry, craft, uncanny, sympathy

what is
Extraction ●
activity, mind

time frame
anthropocene

networks

products
stones (marble, coal)

Theory

general

site specific

A
HINTERLAND

STONE - SOIL
coal - marble

B
SITE

Eordaia/ site

maps

diagrams

inventories

multilevel ●
scales
cognitive

C
HUMAN

hubs
centers of an action
many connections ○

mediators
aggregates - between
actions - links they change
action ◇

material agency
non-human become actors ↓

Modes

mapping
inventories
diagrams

01 strata vertical section
02 expansion overtime (extraction sites, city)
03 Extraction process /energy flow/machines
04 After extraction (distributtion, subnatures)
05 City impact: expropriation, population
06 Atmosheres - narratives
07 Composition map

parameters ●
entitities
conditions

reflection ●

Narrative about extraction

C. POST - HUMAN

design ●
type of project
site selection
projection in time
speculation

A. POST - HINTERLAND

B. POST - MINING

diagram 12 METHODOLOGY

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