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WHAT'S THE MATTER? AN EXPLORATION OF THE SHARED SPACE BETWEEN DRAWING AND MINING

Rachel Bacon

Royal Academy of Art (KABK), NL
r.bacon@kabk.nl

In this paper I consider the idea of an expanded drawing practice, in which marks made on paper and marks made through excavation in a landscape may both be considered forms of drawing. Site-visits to open-pit mining areas act as research locations for exploring a vocabulary of mark-making that links the drawings made in the studio with the marks made in the landscape through excavation. These excavation sites are locations where vastly different time frames are conflated: ancient geological time, the speeding up of economic time and the deceleration allowed by artistic time; and finally the panic time associated with an age of ecological crisis. The temporal dissonance of these sites may lead to a sense of landscape instability, a characteristic of this current era in which, according to Timothy Morton, a human-centered viewpoint is being disrupted due to the effects of climate change. In my drawing practice, I am attempting to envision mark-making no longer as an individual mark made on a surface, (a dominant mark acting on an "empty" landscape) but rather as a form of ecological co-creation, in which both surface and mark are completely interdependent, and in which a conscious deceleration may act as a counterweight to accelerated economic imperatives.

Introduction

In my drawing practice, I am interested in exploring alternative ways of viewing landscape in an attempt to offer alternative models for how to perceive and interact with our surroundings in a way that speaks to the complexity and speed of current ecological transformations. My original research centered on open-pit lignite mines in Western Germany, and began as a series of site visits to observe and collect material. These observations of the marks made in the damaged landscape then influenced the marks made in my drawings on crumpled paper. Subsequently I was invited in 2020 to participate in a project on landscape in Russia, and turned my attention to open-pit diamond mines in Siberia. This trip was not able to take place; however, much of the preliminary research remains valid as a methodology for working with sites of excavation and drawing practice, and I will describe those ideas here as well. In this paper I will attempt to connect these visits with my drawing practice, exploring some of the possible implications for how it might be possible to re-frame images of landscape in an era of ecological disruption in which humans and non-human spaces are becoming ever more interwoven.

Drawing and Mining

As an artist, I already have an intensely intimate connection with my (non-human) drawing material, graphite. In making drawings, I cover the paper with marks, and often end up being covered with material myself. The graphite is slippery and gets into the pores of my skin and deep into the grooves and ridges of my fingerprints. The fine dust produced from the constant mark-making is absorbed into my system through my breathing. In the studio I taste the metallic tang of graphite on my tongue, and feel my throat start to swell up after a few minutes of drawing. Through making marks, I am slowly turning into my material, my body merging with my surroundings.

My interest in mining sites can be traced to this intensive use of the material graphite. The use of such a raw material for me suggested a connection to the extraction industry as a whole. This is what compelled me to search for a way to engage with this aspect of the materials I use, through visits to mining areas where the detrimental effects of open-pit mining are so immediately visible. It was not necessarily important to me to visit the literal site of my material. Rather, I was drawn in by the phenomenon of open-pit mining as a form of extractive drawing, and the strong connection between extraction and the climate crisis. Extraction, of all kinds of different raw materials but specifically of fossil fuels, is thoroughly implicated in the current state of potentially devastating climate warming, according to the IPCC (International Panel on Climate Change). While mining graphite or diamonds is not directly linked to carbon emissions in the way that burning fossil fuels is (except for the emissions produced as a result of extraction and logistical processes), coal certainly is. As I visited various sites, among them the open-pit lignite mines in Western Germany, it started to become clear to me that not only is there a comparison that can be made between some mining methods and my own drawing, but that the underground seams of ore may also be considered as drawings in their own right — huge, ancient, dark gestural marks, invisible until laid bare through excavation.

FIGURE 1: DRAWING PROCESS IN STUDIO, ARTIST'S HAND, GRAPHITE ON PAPER, 2021

I am visually fascinated by these damaged landscapes of extraction, in spite of the depredation they represent. They are impressive sites – often so large they resemble not something man-made, but a feature of a natural landscape like a valley or river bed. That is, until you look down and notice the tiny figures or trucks working at the bottom of the mine, and it becomes clear the sites are the result of human intervention. I have mixed feelings about these places. Awe at their size and grandeur; respect for the engineering ability and determination of the people who operate the mine (though wishing these abilities were put to different kinds of uses); and distress at the havoc they wreak on the landscape and the violent economic growth principles they represent.

FIGURE 2. TAGEBAU HAMBACH, LIGNITE MINE, ELSDORF, GERMANY, 2020

Site Visits: Drawing Vocabulary

In 2019, I began to explore the lignites mine near Elsdorf, Germany, where one of Europe's largest open-pit mines is located. It produces brown coal incinerated to generate energy for nearby German and Dutch electricity networks. Excavation sites, especially visible at open-pit mines, are massive mark-making enterprises. The diggers and machines used for excavation are drawing, in a negative manner, as they scrape into the earth. Looking into the pit, an immense black strip is revealed, appearing at the bottom of what looks to be an inverted ziggurat. This swath of brown coal, or lignite, stretches out horizontally throughout the region. At the mining site it comes closest to the surface, even so, it is 300 meters below sea level. It is easy to imagine the coal, which is between 40 - 60 million years old, lying like a vast sheet pressed in between layers of sand and silt, a black page stretching out beneath the surface. However, this layer has been laid bare, and is being removed as the excavators follow the ancient line of coal and in so doing create a negative drawing, leaving behind the space where the coal used to be.

FIGURE 3. TAGEBAU INDEN, LIGNITE MINE, ALTDORF, GERMANY, 2020

The drawing vocabulary that emerges from this expanded drawing site is a meeting of abstraction and concrete matter. Shapes are derived from industrial machinery and infrastructure and the organic qualities of materials and the earth. There are long flat plains formed by vertical cuts, that end in a rutted cliff face; the edge of the pit where the earth has been cut away, ridged with lines of erosion; and shaggy rows of soon to be demolished woodlands at the pit's edge. Barriers set up by protesters are made from branches of the same trees. In the lumpy, sandy mass of material can be found the long straight lines of railways slicing through the landscape, that assist in removing the coal. Forms in the drawings may form visible references to industrial machinery, (grids, lines, blocks) and their traces left on the earth (scars, folds, crumples and tracks). Some forms at the mine arise as a result of erosion and weathering processes: wrinkles, creases, cracks and furrows. Other shapes belong to the landscape at large: pits, holes, terraces, dugouts, pools, humps and ridges. The marks made in the landscape vary from very precise to rough and gestural; with faster, jagged, teeth-like marks that reference the rapid pace of economic efficiency alternating with the delicate fissures of drying and eroded earth.

In the drawing *The Other Orebody*, the drawing is formed from a series of rectangles, leaving space in between sections to form a grid. The grid is evident in all mining activities, both as a way of dividing up the surface of the land into parcels, and as cross-sectional mapping for excavation. This is in contrast to the creases and wrinkles in the paper caused by repeated crumpling, that start to resemble the eroded and fissured earth, as well as the dark seam of coal itself.

FIGURE 4: RACHEL BACON, THE OTHER OREBODY, 2019, GRAPHITE ON PAPER ON FOIL, 503 X 191 CM, PHOTO BRIAN MAC DOMHNAILL

Parallel Methodologies

In the drawings made as a result of these expeditions I explore some shared methodologies between drawing and mining. Both start from a so-called “pristine” landscape — in the case of the drawing the blank sheet of paper, in mining a natural landscape. The next step is a process of mapping, in which a grid is employed as a way of measuring and dividing space. In mining it would entail surveying and dividing the area to be mined. In my drawings, the grids may arise as a function of the rectangular shape of the sheet of paper, whose outlines often become clearer as the drawings progress. After the areas are mapped, excavation follows. If it is possible to envision the excavation as a form of drawing, conversely, it might be said that drawing is in turn a form of excavation. In my work, the dark shapes often gradually emerge as forms that resemble seams, around which graphite is carefully and meticulously laid. A reversal takes place during the drawing process in which the seam is created by the replacement of material, not its removal.

FIGURE 5. RACHEL BACON, ADRIFT, 2022, GRAPHITE ON PAPER ON FOIL, DETAIL

The slow and meticulous marks made on the crumpled paper are for me a way of expressing care. By repeated mark-making, almost a kind of polishing, the graphite in the drawing becomes very shiny and starts to resemble something akin to a precious metal. Empty paper and drawn areas alternate to form what look like seams, comparable to a vein of coal or ore, with the undrawn part of the paper left open as a space of potential. The emphasis here is on the “blank” surface, which is in fact never blank but full of wrinkles, creases and textures, alive with imaginative possibilities and associations.

Another aspect of making these drawings has to do with the ambiguous nature of their state. First developed as small sketches and material studies, they exist in multiple dimensions. Both sculptural and graphic, folded and rolled, standing and slumping, they may be seen from above or in cross section. The drawings describe a space in-between, suggestive of an experience of uncertainty and contradiction, allowing the exploration of multiple perspectives. This in-between state is for me the beginning of an artistic speculation on new forms of hybridity, possible mergers and co-habitation between different points of view, and states of unbalance and precariousness. They are an invitation to the viewer to become less comfortable in their own skin, and more attuned to an experience of being destabilized.

FIGURE 6. RACHEL BACON, DISYNCLINATION, 2022, GRAPHITE ON PAPER ON FOIL, 200 X 180 CM

It often takes many months to produce one of these images, an amount of time disproportionally large in comparison with the relentlessly efficient economic time of the mining enterprise. I mainly draw on crumpled paper. Crumpled paper would normally be considered a mistake and thrown away. In mining, the discarded earth is called “overburden”, an unwanted leftover. In the drawing, nothing is discarded, instead I embrace what is damaged and reveal mistakes through mark-making. In the same way, aging skin with its wrinkles, fissures and furrows might be something considered unappealing or unwanted, yet when closely examined the lines and patterns may take on a magnificent complexity speaking of time and experience, etched in material. The crumpled paper and graphite marks of the drawing gradually start to resemble both worn skin patterns and the lands’ erosion, inviting a possible association between body and earth. Although a drawing can hardly match the experience of a real mine, my intention is to set in motion an identification with the crumpled paper as skin, and the earth as body. This sense of ourselves as being just one object among many is key to a true ecological awareness; there is no “away” only an enmeshment of things, and this awareness may start with an encounter and identification with the vulnerability and limits of our own materiality.

FIGURE 7: DRAWING PROCESS IN STUDIO, USING A 9 MM MECHANICAL PENCIL, 2022

Ecological Mark-Making

In discussing the parallel between drawing and mining methodologies, I described the approach to landscape and to the sheet of paper, as that of a “pristine” site, an untouched surface. However, no landscape on earth can really be said to be uninhabited (if not by people then by fauna and flora). And the surface of paper, instead of being a blank sheet that is acted upon by the artist making a mark, is itself not neutral. As I draw into and around the crumples in the paper, the surface participates in creating the drawing, in which surface and marks become interdependent. Artist and writer Marina Kassianidou, in her discussion of the work of three artists, Dorothea Rockburne, Louise Hopkins and Lai Chi-Sheng, evokes the artists' crumple, fold and drawing works in which:

> *"...the distinction between marks and surface falters as the two coincide. In all three cases the paper is not approached as something blank to be filled or covered but rather as something to observe, respond and relate to. Moreover, the paper is not treated as an autonomous clean space in which the artists can create their own world. Rather, the paper is the world, and the artists' task is to focus on that reality and work with it..." (Kassianidou, 2021, p. 247)*

In these artists' works, the surface and the mark become intertwined, enmeshed and interdependent, neither mark nor surface is privileged over the other. In my drawing, there is a more clearly delineated form, in that I allow the graphite to describe forms that often follow a pattern resembling a coal seam or veined connective tissue. However, on closer inspection, it becomes clear that the marks are built up out of countless smaller shapes that originate from the crumpled form of the paper, so that the image is utterly dependent on the surface of the paper for its own appearance.

Kassianidou argues that meaning arises not only through the significance of the mark made on the paper, but because of their inextricability. This is a very different approach to mark making than one in which the mark maker (the artist, the excavator) attempts to dominate that which is being marked (the paper, the landscape). Instead, marks are laid down in response to what is already there. The work in this case becomes a collaboration or co-creation between figure and ground, mark-maker and mark-receiver. It implies a form of shared agency, a realization and manifestation of the interconnectedness of artist and surface, excavator and landscape, human and non-human; in short, an ecological form of drawing, where surface and mark are interdependent. An ecological form of drawing is one in which the utter interrelatedness of mark and surface is visualized, and in which, in Kassianidou's suggestive words, " ...drawing is approached as a space of potentiality, a space through which relationships between mark and surface, and between self and other, can be negotiated and re-negotiated anew." (Kassianidou, 2021, p. 251).

Siberia

Open-pit mining sites often reveal the consequences of an approach to landscape in which an attitude of co-creation is missing, and where a form of dominance over the "empty" landscape prevails. These sites are shaped by economic imperatives, with the intention to extract ore and materials as efficiently and as quickly as possible. Choices made about how to exploit the site must take into account its natural features. But while the excavators cannot help but react to the surroundings in numerous ways, the destruction that follows can in no sense be said to be a co-creation. Rather it is an action that results in absence, a form of anti-landscape. Examining these sites it becomes clear that the landscape is in fact missing — huge swaths of earth have been displaced or burnt (in the case of the coal). To visit these sites is to witness loss and to absorb some of the complexities and entanglements involved in one of the most violent and often awe-inspiring forms of human impact on landscape possible.

With this in mind, in 2020 I took part in a multidisciplinary research project called *What Do Landscapes Say?* on landscape narratives in Russia. As part of my research for the project, I began investigating the open-pit diamond mines in Siberia. My main drawing material, graphite, is pure carbon and has the same chemical substance as diamond. Graphite and diamond are allotropes of carbon, meaning that though they have different physical forms, they share an identical chemical composition. The idea of something

as sought after as diamonds being chemically identical to the humble pencil has long fascinated me, as a way of re-evaluating what might ordinarily be thought of as relatively worthless.

The trip to visit the diamond mine in Siberia, postponed multiple times, eventually had to be cancelled. However, even without the physical experience of the site visit, much of the preliminary research remains relevant for future site visits as a way of describing some of the temporal complexities that such sites lay bare. The high northern landscape is notable for its combination of industry, wilderness, geology and the spiraling effects of climate warming that cause the tundra to burn, permafrost to melt, and the gigantic open pit mines to keep expanding. In the past few years, temperatures have been dramatically increasing and the permafrost is starting to melt. The oldest mine in the region, the Mir pit, one of the largest man-made holes in the world, is expanding, quite close to the city of Mirny. If the warming continues, which it is predicted to do, the mine may even start to swallow up the city. At this site, temporal and spatial scales collide: the ancient geology of diamond formation; the economic imperative to keep expanding; the artistic attempt to slow down and observe, and the panic time of an unfolding, escalating climate crisis.

FIGURE 8: MIRNY, SIBERIA, MIR DIAMOND MINE, 2017, PHOTO ILYA VARLAMOV, LICENSED THROUGH CREATIVE COMMONS

Temporal Dissonance

"We must run as fast as we can, just to stay in place. And if you wish to go anywhere you must run twice as fast as that." This quote from *Alice in Wonderland* is (perhaps disturbingly) a cornerstone of the revamped diamond-mining philosophy of Alrosa, the state-owned Russian diamond mining concern, according to the director Sergey Ivanov, in an interview in the Alrosa Magazine of September 2018. This

slightly fantastical vision on economic growth is the exact opposite of a sustainable practice. This is part of what motivates me in my drawing work to slow things down, as an alternative to the acceleration of economic time. It sometimes takes months and months to produce one of these images, an amount of time disproportionally large in comparison with the relentlessly efficient economic time of the mining enterprise (or of the art world imperative to continue to produce something “new”).

The geological time of diamonds is itself extremely lengthly. They are formed deep within the earth, and can be billions of years old. Crystallized in the intense heat and pressure in the magma of the earth's upper mantle, they can only remain stable at very high pressures and temperatures, and were brought to the earth's surface in ancient volcanic eruptions. It isn't the case that diamonds form from solid graphite moving through ever-hardening stages and crystallization to become one of the hardest naturally occurring materials on earth. Rather they apparently formed from liquids, possibly from intrusions of fluid from the ocean floor into the mantle. However, when rising to the surface in the molten kimberlite, diamonds may revert to graphite when the rising magma is slowed down or diverted. This demarcation line is called the graphite-diamond boundary. The image of a diamond reverting to graphite due to deceleration is suggestive of a kind of reverse alchemy, in which the valuable element again becomes a base material. And might this diversion and slowing down offer a way to understand how to possibly attend to the climate crisis we are in the midst of perpetuating?

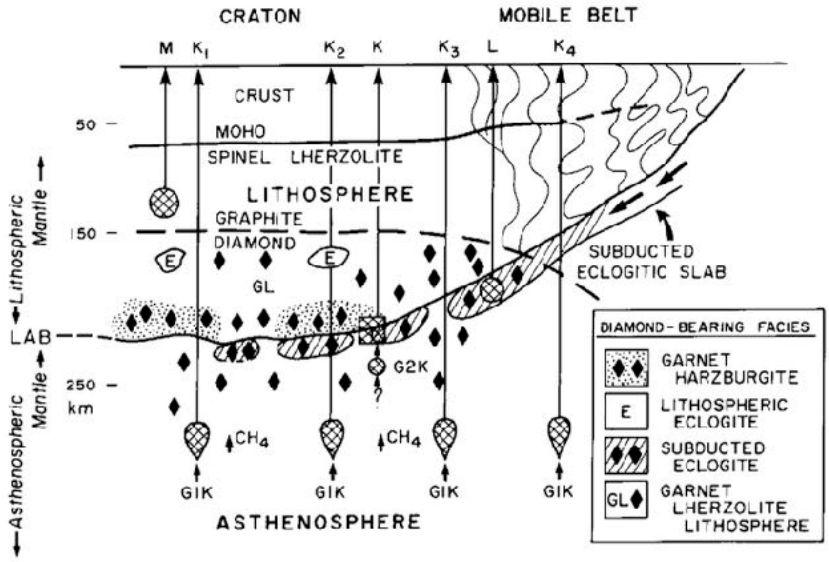

Figure 1 *Hypothetical cross-section of an Archean crator and adjacent cratonized mobile belt, showing the location of the lithosphere-asthenosphere boundary (LAB) relative to the stability fields of diamond and graphite. The diagram illustrates why different group 1 kimberlites (G1K) differ with respect to sources of xenocrystal diamond. K_1 may contain lithospheric and asthenospheric garnet lherzolite diamonds together with garnet herzburgite-derived diamonds. K_2 contains diamonds from the aforementioned sources plus diamonds derived from lithospheric eclogites and subducted eclogites, i.e., five distinct sources. K_3 contains only lithospheric and asthenospheric garnet lherzolite diamonds. K_4 does not pass through any diamond-bearing regions and is barren of diamonds. Group 2 kimberlites (G2K) are shown originating at the LAB and contain diamonds derived from garnet harzburgites and subducted eclogitic sources. An asthenospheric component may be involved in their genesis. Lamproite (L) contains diamonds derived from subducted eclogite and lithospheric garnet lherzolite sources. Melilitic (M) magmas are shown to be derived from depths within the graphite stability field and hence they are barren of diamond.*

FIGURE 9: GRAPHITE — DIAMOND BOUNDARY, 1991, FROM R.H. MITCHELL, KIMBERLITES AND LAMPROITES: PRIMARY SOURCES OF DIAMOND

What might it mean artistically to embrace the slowness and diversion of graphite as opposed to the speed of diamond excavation? From the time spent researching diamond mines a series of drawings arose titled *Rough Cuts*. These large scale works are all loosely hexagonal, based on the molecular structure of carbon molecules. In these works, it can be clearly seen that they have taken an immense amount of time to make. Though this artistic deceleration still pales in comparison with the immense scale of geologic time, it may act as a juxtaposition to the ever-faster and more damaging feedback loops of rising temperatures and speeding up of economic time in relation to the ancient materials extracted. My hope is that the viewer may take the time to slowly experience material in a way that invites an identification between our bodies and the earth, to possibly start to conceive of another way to understand ourselves in relation to the material that makes up the stuff of landscape. That through a felt understanding of our own vulnerability, we may be able to conceive of a decelerated and less damaging relationship with our surroundings.

FIGURE 10: RACHEL BACON, ROUGH CUT NO. 2, 2021, GRAPHITE ON PAPER ON FOIL, 140 X 220 CM

Hyperobjects

In researching and considering the role art may play in facing some aspects of the ecological problems at hand, I've been continually inspired by the writing of Timothy Morton, especially his book *Hyperobjects*. A hyperobject is something such as global warming, pollution or radiation, that is so vast in temporal and spatial scale it is impossible to comprehend or plan for. Distant and impossible to grasp, the hyperobject also infiltrates our daily lives and sticks to us, for example in the form of plastic bottles or sunburn. For Morton, the ecological crisis is an ontological one, a "quake in being," (Morton, 2016, p. 19) because it disrupts our human-centered viewpoint, a viewpoint that has led to unparalleled destruction of natural environments. (It has to be made very clear this "human" centeredness does not apply to all humans, as there are people living in a much more equable relationship with their environments).

The hyperobject has the effect of destroying our (Western) conceptions of World and Nature as a container for human lives. When Nature is no longer there as a backdrop, we become disoriented, as the foreground, background and horizon also vanish. It entails a traumatic loss of coordinates. This condition will require an emotional response, as we can't think our way out of this. It's a time of catastrophic loss, not just literal loss as habitats and species disappear, but also in terms of having to relinquish old ideas of how we are in the world. For Morton, art in these conditions is grief-work. My drawings are made on black paper, referencing not only the earth and coal seams, but the mourning and sorrow that accompanies this age we are living through and that is often associated with this somber color. According to Morton, art can guide us through this grieving process, walking us through a space that is difficult to traverse. Morton's thinking also has profound implications for how landscape is visualized, as it may point towards a non-anthropocentric perspective that is much more unstable, multifocal, and difficult to grasp rationally, requiring an emotional response.

The disruption of the human-centered viewpoint is a disturbing proposition, but one that humans (mainly those in hitherto relatively insulated consumer societies) will ultimately have to get used to. The effect of the ecological/ontological crisis is an upending of the hierarchies between humans and non-humans. Certain human beings will need to give up the illusion of being in control in an era of rapid climate change. While extremely disorienting, this awareness of our condition may lead to a state of intense intimacy with our surroundings, as we become aware of being very close with other non-human entities. This is something that as an artist I strongly identify with, as for me materials are always the starting point for works and are something that while working I observe and follow according to their specific qualities. And perhaps for the audience, the encounter with an artwork may also act as an experience of something other, and as such may allow an experience of another way of viewing the earth that is destabilizing, opening the way to an experience of the fragility and vulnerability of material, towards an identification with our own bodies.

Conclusion

Drawing on damaged paper, following the crumples, may stand as a model for mark-making as a form of co-creation, a collaboration between figure and ground, mark and surface, excavator and landscape. This may point the way towards an approach to landscape in which humans no longer dominate, but become sensitized to the otherness of their surroundings. I am aware of the important questions arising regarding representation, and whether in taking images and materials and reusing them, I am perhaps also engaged in or replicating a form of artistic exploitation or misrepresentation, extracting imagery and

material for my own use. There is always the question of the rectitude of speaking for an entity without a voice, in this case a natural landscape. Astrida Neimanis calls this the dilemma of “Can't but Must,” (Neimanis, 2015, p.144) the quandary of a perceived need to address an issue, simultaneous with the realization of the impossibility of representing another's viewpoint. With this in mind, let us return to drawing. My drawings take ages to make; slowing down time, the humble implement puts value into caring and spending time with something damaged. The humble graphite mark may become precious, and echoes of the damaged landscapes underlying the extraction of costly coal and diamonds reach out to touch us across a vast distance. Let us discover our own graphite-diamond boundaries as a consumer society, and revert from one based on constant acceleration to another in which the creative endeavor and a much slower pace of production and consumption draws a different kind of future. This is not about making “environmental art.” It is about not looking away, and how drawing might be a tool for exploring modes of deceleration and co-creation. In a crisis, slow down.

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