

National College of Art and Design

Department of Sculpture and Expanded Practice

School of Visual Art

Invisibilities in Climate Breakdown

Imaging and Imaginary Implications for Art Practice.

Anne Kenna

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I declare that this **Critical Cultures Research Project** is all my own work and that all sources have been fully acknowledged.

A handwritten signature in black ink that reads 'Anne Kenny'.

Signed:

Programme / department:

Date: 26/2/2023

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Introduction

This thesis engages the question of invisibilities in climate breakdown. How might these invisibilities be understood? What imaging and imaginary implications might there be for art practice? Chapter One will describe the invisible through the medium of dust, the minute and the lethal. Chapter Two will explore how some artists have responded to the natural environment. Chapter three will take account of the emergence of new dust, within the context of climate breakdown and reflect on the implications of invisibilities for Art Practice.

Given its length, this thesis is a limited discussion of the issues involved. Reference will be made to Joseph Amato's historical exploration of dust, through to Olivier Remaud's exploration of a new way of thinking about icebergs. Further discussion will refer to Gitte du Plessis's account of the impact of invisibility in climate breakdown in the Arctic. Katherine Yusoff's articulation of an origin story of the Anthropocene will also be referred to. An Appendix documents a modest consideration of image making, through an interview undertaken with a photographic artist. In the appendices, there is also a brief analysis of the responses of eight people to three images of Greta Thunberg.

Invisibilities in climate breakdown first arose for this writer, when the importance of bog landscapes and their crucial role in climate mitigation became apparent. Research and work around this issue educated my appreciation for these important sites, but also taught that what first appears to the eye, is not necessarily what is happening. Since then, I have been interested in the layers that lie beneath and behind surface appearances, what is not visible at first glance, what is hidden, what cannot be seen. Allied to this is a deep concern for my grandchildren and the world they will inherit, they and the two billion other children they share the planet with.

Chapter One

Setting the Context

What if something crucial to our understanding of climate breakdown was invisible? What if it was something hiding in plain sight? What could happen if it was uncovered? What if was something rendered invisible, something deliberately hidden? What does invisible mean, and what relevance does a word dating back to the 14th century have for art practitioners in the 21st century? In considering these questions a helpful place to begin is with dictionary descriptions of the word. So what do these show? Something invisible is described as being,

Incapable *by nature* of being seen... not perceptible by vision, not marked by outward signs...not able to be recognized or identified... to be of such small size or unobtrusive quality to be hardly noticeable... treated as if invisible: overlooked (Merriam-Webster, 2022).

The list of synonyms and similar words offers further clarification of its meaning, “unnoticed, discreet, unseen, inconspicuous, unobtrusive, unnoticeable, hidden, imperceptible, faint, obscure, concealed, impalpable, indistinct, unremarked, inappreciable and insensible.” (Merriam-Webster, 2022).

On the face of it, the above descriptors may appear self-evident, but a deeper consideration suggests that if the issue of invisibilities are crucial to an understanding of climate breakdown, then it is important to examine more closely the cultural evolution of the concept itself. This moves the discussion beyond tacit understandings of the invisible. It is important to note at this point in the discussion, that carbon dioxide in the atmosphere, a crucial driver of climate breakdown, currently stands at 431ppm and by composition is invisible to the naked eye.

Understanding and visualising climate breakdown information in the present time, relies on critical interpretation of vast quantities of information, derived largely from an evolving computational capacity to model multi-disciplinary scientific data. Considering complex data is the subject of *Accumulation: The Art, Architecture, and Media of Climate Change*. This text is concerned with a particular challenge of climate data arising, the authors suggest, from this time being an ‘epoch of accumulation’ where a

mediatic dynamism operates according to the basic principle that the accumulation of carbon in the atmosphere is invisible and that its myriad systemic effects are difficult

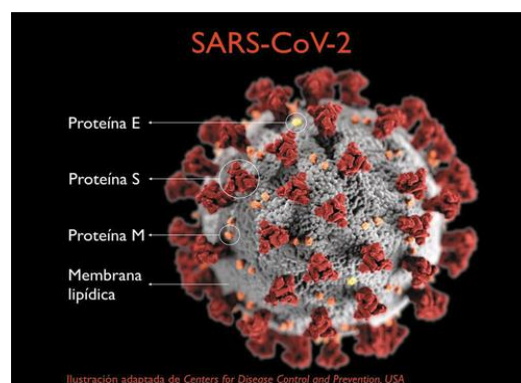
to trace...In a spectacle- infused culture, it can be difficult to bring into relevance the slow accumulations now destabilising the climate. (Axel, Barber, Hirsch, Vidokle, 2020, p.11).

This accumulation of evolving data, provides the multilayered context within which carbon and other climate invisibilities inhere. This brings consequences for image making and knowledge sharing. One impact may be the expulsion of key challenges in climate breakdown from the sight and immediate range of concern of humanity. Instead, accurate information is shrouded in complex data, which may then produce a kind of poorly defined background anxiety and uncertainty. Understanding and visualising the hidden dimensions of data are crucial to an accurate appreciation of what is happening to climate, and more importantly, crucial to the kinds of decisions needed to respond appropriately to it. Invisibilities in climate breakdown, may be contributing to the prevention of the urgent societal changes that need to take hold now at scale and speed.

To conceptualise the impact of such invisibilities on our understanding of climate, much can be gained from a consideration of the history of the invisible and the minute. One way to explore this is through the material of dust. “Once, not so long ago, dust constituted the finest thing the human eye could see. In the form of gold dust, or pollen... or as individual particles that spun in sunlight, dust was the most miniscule thing people encountered.” (Amato, 2001, p.1). Dust in contemporary society can be removed from most surfaces and corners where it seems to gather. It reappears again, unbidden, the result of human interaction with daily life. Dust, says Amato, is the “result of the indivisibility of matter.” (Amato, 2001, p.3). Dust is found in all things. “Dust is part of the earth's making and unmaking.” (Amato, 2001, p.5). “Blown dust accumulates into geological structures... like the cliffs of north-west China, composed of deposits of dust from the Gobi Desert.” (Amato, 2001, p.5). Dust from volcanoes has been implicated in causing ice ages, and was the cause of mass emigration from midwest America during the 1930's dust bowl phenomenon, covering 150,000 square miles of land, a consequence of intensive grazing. (*The Dust Bowl Intro*, 2015.)

Amato notes that there is no etymological link between dust and in-dust-ry. However, industrial societies with their machinery, caused huge new dusts to pour out into the environment, “industrial society was the great earth mover and, consequently, the great dust maker.” (Amato, 2001, p. 8). In contemporary society, dust has lost its threat to hygiene and health and the invisible and the minute have been remade, through the continuous invention

of new and more precise forms of seeing the microscopic. The old fear of dust has been supplanted by fears of radioactivity, environmental pollution, and of most recent and current experience, the minute Covid 19 virus. The image of Covid 19 now familiar globally, was made visible with its protein spikes, by Alissa Eckert and Dan Higgins of the US Centre for Disease Control. Made using electron microscopy and later computer edited and coloured, it drew on “portraiture” and became the “most visually represented virus in all virology history” (Zalemea,Vives, & Rodriguez, 2022, p. 10).

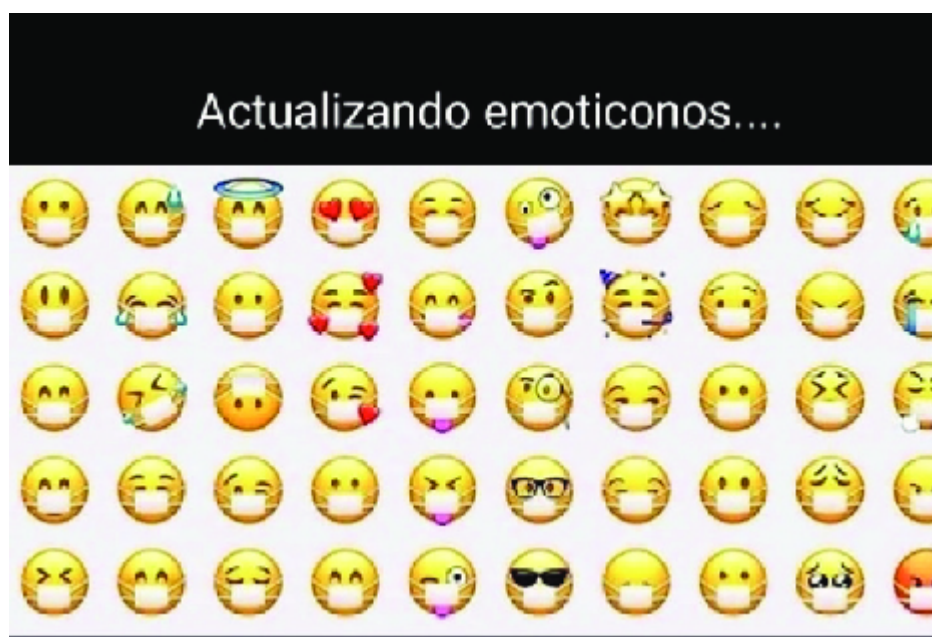


1.Ecker, A., Higgins, D., (2020) *Adapted Illustration in Spanish of a 3D model of SARS-cOv2(Covid19)*.CDC, Cogent Arts & Humanities, 9:1, 2055710DOI: 1080/2311983.2022.2055710.

Interestingly, Zalemea,Vives, & Rodriguez, note that “the first tangible images of the actual virus most probably arrived as memes or digitally-produced versions through social media.” (Zalamea,Vives, & Rodriguez, 2020, p5.) These are illustrated below.



2. Figure 1. Anthropomorphized Covid 19. Circulated on Whatsapp in Colombia on the day of the first identified case of Covid-19 in the country (6 March 2020).



3. Figure 2. Masked emotions. Circulated on Whatsapp in Colombia in early March 2020.

For Amato, medicine, physics, public health concerns and new technologies have all contributed to the ever growing capacity of society to scope, manage and manipulate micro-particles of the variant dust of the planet. This progress towards knowledge of the ever smaller, has meant that the “peoples of the developed world have willingly delivered themselves into the hands of the manufactured unseen.” (Amato, 2001, p.142). Not only that, “society now carefully weighs little things. Incrementally, cryptically, the small and the invisible can hurt and kill” (Amato, 2001, p.144). In his discussion of the emergence of new dust, Amato points to the work of Rachel Carson in *Silent Spring*, where she enumerated the “complex and multifarious...new dreadful dusts.” (Amato, 2001, p.144).

Carson illustrated the way in which pesticides entered the stream of life, rivers, fish, lakes, soil, worms and the bodies of human beings. “They occur in the mother’s milk, and probably in the tissue of the unborn child.” (Carson, 1962, ‘Elixirs of Death’). Poisons and extractive substances continue to accumulate and find ongoing reproduction in chemical carrying microplastics, for example, found in the placenta (Carrington, 2020/1) and black nanoparticles in the “first and second trimester placenta.” (Carrington 2022/2). Added to this is massive biodiversity loss and the fact that the world failed to achieve any target it set for biodiversity conservation over the past ten years. (Weston 2022). Another example of the invisible can be seen in “widespread” cattle consumption of diclofenac and human

consumption of the same substance in the 1960's. These human and animal consumptions may now have combined to threaten with extinction, the vulture population linked to the Parsee Population of India. This has undermined a rich entanglement between human and animal, which has for hundreds of years allowed for the expression of Hindu *ahimsa* culture and the safe disposal of those who have died. (Van Dooren, 2014, pp. 47-61). It was Carson's ecological view that gave birth to a new perception of the minute and the invisible, as a "view that pushes human imagination to care about everything on the planet. An awe of life not dissimilar to the Hindu reverence for all living things...everything depends on everything else, the star shines in the smallest ripple of water" (Amato, 2001 p.146).

These interactions increasingly articulated, are suggested in Haraway's new concept of "kin" (2016), Tsing's exploration of "collaborative survival" (2017), Holloway's proposal for a 'zoocracy' (2022) and Rемаud's exploration of the reciprocal interconnectedness between "human life and iceberg life" (2022). Parallel with this cultural shift towards interconnectedness there is the continuing presence of oil extraction, polluted rivers, dried lakes and river beds, storms and floods. The war between Ukraine and Russia, that has seen the climate change agenda disrupted, in America and Europe (Behold and Tankersly, 2022). These parallel realities meet their counterpart in the bathroom, in the makeup bag, in the kitchen, in the fridge, on the table, the plate, the drink and in the very air we breathe. Amato claims this has resulted in a new imagination bringing with it new images, delivering a new sense of the lethal, which for Amato involves giving "a large part of human imagination over to scientific institutions and their experts." (Amato, 2001, p. 169).

Such is the confluence of forces and cultural realities within which global heating and climate breakdown exist, the latter terms are now deemed more appropriate to our common and current demise than "warming" or "change" (McQuire, 2022, p, xvii). It is perhaps now common knowledge, that carbon dioxide is responsible for unleashing the potential for what Bill McQuire calls 'hothouse earth',

Not an ice-free planet, but a world in which lethal heatwaves and temperatures in excess of 50°C in the tropics are nothing to write home about, a world where winters at temperate latitudes have dwindled to almost nothing and baking summers are the norm; a world where oceans have heated beyond the point of no return. And the mercury climbing to 30°C within the Arctic is no big deal (Maguire, 2022, p.xv).

Interestingly, McQuire notes that knowledge regarding a heating atmosphere was clearly suggested as far back as 1856. The experiments of Eunice Foote, an American Scientist

showed the capacity of carbon dioxide to absorb heat (McQuire, 2022. p.6). This finding was subsequently confirmed in the work of Irish physicist John Tyndall. During the 1860's he saw that "variations in the level of atmospheric carbon dioxide along with water vapour and methane - both greenhouse gases -" "must produce a change in climate" (McQuire, 2001, p.6). Despite this knowledge existing for so long, it has failed to persuade humanity to stop extracting oil and other carboniferous based fuels.

All this occurs as the practitioners of extraction remain invisible. Is it a case that if a substance cannot be seen by the naked eye and as previously said, its myriad systemic effects are hard to trace, that the power of absence and intangibility, offers this activity a kind of protection, that gives way to a ruthless vanishing? Is this kept in place by myriad forces that have induced a cultural, global, *scotisis*, a great blindness, a willful unseeing? Or are we living through a deliberately constructed oblivion of the possibility of planetary extinction, driven by greed wearing the lure of a disguise called progress and wealth accumulation?

"In the troposphere, the air we breathe and share with other living beings is air we cannot escape" (Calvillo, 2022 p.149).

It is the air that comes into our body through our lungs. It is the air in which dogs bark, where bees fly and spread pollen. It is not just this though. It is also the air of capitalist and neoliberal accumulations, the disposal space of industrial, technological and farming production systems... The polluted air is one that contributes to after lives, chemically altered lives and beings' (Calvillo, 2022, p.149).

This is also the space of the contemporary artist. Here is where the challenge of visualisation engages the invisible. In the next chapter the writer will explore how artists have, and are responding to this moment in time.

Chapter Two

Artistic Representations of the Environment and Climate.

Amato claims that dust's loss of power to render the invisible has created a new sense of the lethal. This has emerged from an imagination dedicated to measuring smaller and smaller dimensions of the universe. This relies on instruments developed by new technologies, driven by scientific institutions.

What may be understood as minute and lethal now? How are they linked to what is invisible?

In a situation of ever evolving climate data, geopolitical stresses, war in Europe with its attendant impacts, biodiversity loss and global heating, we know today there is scarcely a form of life that has not been impacted by enormous change. In addition, the war in Ukraine has resulted in a weaponization of energy, resulting in what has been called 'the dash for African gas. The intention of the DRC government to auction oil and gas permits in that country's rainforest and peatlands, resulted in their being asked by John Kerry, to reduce the amount of land for auction. The Congolese environment minister, Eve Bazaiba, summarised that country's dilemma when she said "as much as the country needs oxygen, we also need bread" (Lakhani, 2022). Amitav Ghosh deepens this complexity in his articulation of climate breakdown in Asia. He acknowledges the centrality of capitalism in the 'narrative' of the Anthropocene, but suggests that this often overlooks the 'equally important' aspects of "empire and imperialism". Ghosh suggests that Asia "is conceptually critical to every aspect of global warming: its causes, its philosophical and historical implications, and the possibility of a global response to it." (Ghosh, 2017, p.87). Demos notes the need for an emerging shift, a 'great transition' radical systemic change that "moves beyond the hegemonic conditions of racial and colonial capitalism that is pushing us towards catastrophe." (Demos, 2022, p. 38).

In the introduction to their study of artistic visions of the Anthropocene North, Hedin and Gremaud suggest that it is important to explore "how both historical and contemporary artworks deal with questions posed by the climate and environmental crisis" (Hedin and Gremaud, 2018, p.2). They are aware that considering this question ought to go beyond national boundaries and the North-South axis, but opt for the latter in the interests of rethinking "specific national and geographic identities." (Hedin and Gremaud, 2020, p.2). This involves a focus on The Arctic, Iceland, Canada and Scandinavia. They suggest that

climate breakdown has created a “new geopolitical centre” in the Arctic. Their text is sensitive to the ways in which archaeology and geology have offered rich insights to artists, and in this regard they discuss the work of Casper David Friedrich, a German Romantic artist who was “well aware of the long history of the impact on the landscape of the forces of geology and human beings from earliest times”. (Hedin and Gremaud, 2020, p.4).



4. Casper David Friedrich, The Sea of Ice, 1823-1824, Oil Paint, 97cm. x 1.27m, Hamburger Kunsthalle.

In this painting, shards of ice depict an imprisoning destructive force around a sunken ship. A dominant nature overshadows the ship. The disappearing hull suggests a tragedy. The pointing ice shards imply a transcendent dimension to the painting. All of this communicated a challenging appeal to original viewers, and suggests a potential for discussing and unpacking, the why and invisible consequences of seabound expeditions to the Arctic for the contemporary viewer. Friedrich took his observations of ice from along the River Elbe in Dresden, and is one of the artists who depicted the North “through the paradigm of the sublime.” (Cheetham, 2020, p.64.).

Another artist of the sublime is Fredric Edwin Chapel, whose 1861 painting of icebergs and a

shipwreck, resulted in showings in New York, Boston and London, as well as a book written by the Reverend Louis Legrand Noble. *After Icebergs with a Painter*, was published to promote Chapel's Painting. Cheetham quotes from Noble when he says, "True to all forms of nature, that swell to the sublime, an iceberg grows upon the mind astonishingly." (Noble, p.113.). This painting developed the sense of the sublime as finding 'the divine as the source of nature's magnificence....and "the sense of the small part we humans ultimately play in this whole."' (Cheetham, 2020, p.64.).



5. Frederic Edwin Church, *The Icebergs*, 1861, Oil Paint, 1.64m x 2.68m, Dallas Museum Of Art.

Olivier Remaud, noted the influence of Emmanuel Kant and Edmond Burke on the sublime. He comments that in the paintings of the sublime, characterised by tall mountains, snowy peaks showing through clouds or storms seen from shore,

The fictional viewer experiences a paradoxical feeling of a fear of dying while remaining in safety. All five senses warn of the risks. At the same time one feels infinitely free. One's reason finds strength in confronting an idea of the absolutely immense, even of the unlimited. At a safe distance, one might assume that one's life is not really in danger. (Remaud, 2020, p. 13.)

Both of these paintings illustrate the way in which the images have been constructed to reflect philosophical and cultural ideas about the environment prevalent at the time. What is depicted is an aesthetic/spiritual response to the divine origin of nature. This is nature as the

great wilderness to be adventured into, yet stood apart from, a great hold of treasures and wealth, soon to be exploited. Church's interest in the explorations of Alexander Von Humbolt tells of an artist interested in scientific precision. This may imply the ever deepening endeavour to measure the small and the minute, finding some of its cultural and visual expression in such works.

It is quite striking that one hundred and sixty years later Remaud, having considered both of the above works of art, writes the essential nature of icebergs through the prism of the visible and the invisible. This is quite unlike anything the previous artists might have been able to consider,

Let us awaken our pelagic consciousness. Icebergs carried by marine currents are not decorative elements in vanitas paintings, or images of solitude, but essential actors in the primordial cycles of life...None of the places we call 'desert' are in fact deserted. Icebergs illustrate a wild life at work everywhere. They share with animals the same art of appearing and disappearing...the iceberg unites the visible and the invisible. Its identity is not limited to its appearance... We know how voluminous its underwater part is. Yet it always ends up turning over. What was visible disappears. And what remained hidden shows itself. Each iceberg plays a game of fleeting appearances. Its vital centre depends on the rotating movements that bring the submerged volumes to the surface and engulf the others, so that the visible and invisible sides are never the same. To see an iceberg is thus to see the visible and the invisible in alternation ...Basically icebergs do not 'need' us. Above all, they need us to disappear from time to time. This wild part is imitable. We could learn to develop an art of withdrawal that would...require for a time, laying down all sovereignty in order to open up to the unlimited possibilities of anonymous life. (Remaud, 2020, pp. 158-159.)

In many respects this is the direct opposite of the gaze inherent in the earlier paintings, creating a potentially new relationship with the ecology of icebergs, one which the author details with clear-eyed realism. Icebergs he suggests are not at the end of an expedition in far away places, but among us when he says "the more they flood the fjords, the more their quantity is a sign of an anomaly. Their increase proceeds their disappearance...This is the current vertigo, the equation of our near future." (Remaud 2020, p.159.)

Is it possible that the work *She Lies* by Monica Bonvicini is a synthesis by a contemporary artist, referencing Casper's Sea of Ice and the melting of icebergs into the fjords?



6. Monica Bonvincini, *She Lies*, 2010. Styrofoam, concrete pontoon, stainless steel, reflecting glass panels, glass splinters, anchoring system, 12x17x16 metres. Located in front of the Den Norske Opera and Ballet House, in Bjorvika Fjord, Oslo. Photograph Monica Bonvicini, <https://monicabonvincini.net>.

This monumental work by Bonvincini is perhaps, an undone reference to the architecture of the Opera House, that both echoes and subverts Friedrich's *The Icebergs*. It may also focus on its unnerving secondary title, *The Wreck of Hope*. Those who encounter this work, and its relationship to the architecture of the building, as well as its location in the waters and tides of the fjord, cannot be indifferent to the very real threat of melting icebergs. The work offers a contemporary reading beyond the sublime, and the audience addressed is a contemporary witness to its terror. Or is it? The intriguing title may be a play on a burial as in-here lies, or indicates something sensed but unsaid, or untrue. Perhaps it plays on the various interpretations given to Fredriches work? Or perhaps it is a commentary on the architecture of the opera house, playing on the influence of Frederick's painting as an inspiration for the Sydney Opera House, in Australia? Perhaps it is none of these things.

This differs substantially from David Buckland's ice texts and his expeditions to the Antarctic with scientists, artists, writers, musicians and filmmakers. His use of icebergs and their surrounding waters as a projection screen, to tell a story, or as a container of the anxieties and sins of human impacts in ecosystems, does raise awareness, but somehow seems intrusive. While the project has given rise to a great diversity of artistic responses, the expedition on a Dutch 19th century schooner has a lingering colonial dimension which seems uncomfortable. Ian McEwan, a participant in the 2005 expedition, documents the unchanging behaviour of humans in his docu.story. *A Boot Room in the Frozen North*, illustrating in the everyday rituals of such an expedition, a reluctance to mind your own stuff. Somehow, the breaking of a small communal rule on board the ship, becomes emblematic of our carelessness towards the planet. (Cape Farewell, 2005)

A harbinger quality is visible in the film work of the poets, Kathy Jetnil-Kijiner and Aka Niviana, in *Rise from One Island to Another*. The poem connects the melting icebergs in Kalaallit Nunaat, Greenland to the rising sea levels in the Marshall Islands. The poem performs the invisible consequences of extraction in both locations, subverting the concept of expedition, becoming a poem of consequence and challenge, with its accompanying images. Here the invisible is named and called out poetically and visually, (<https://350.org/rise-from-one-island-to-another/>) Remaud, 2020, p.145.)

And what of this?



7. Beltra, D., (2016) *Dark patches are cryoconite, formed by wind blown dust, soot and ash particles that settle on the ice and turn the snow dark.* The Guardian, December 2016.

In considering colours in the Arctic as an aspect of the violence of climate breakdown, Gitta Du Plessis, discusses greening and blacking. Citing Winiger et al. 2019 as his source, he indicates that ‘black carbon is sooty black material, emitted from diesel engines and biomass burning that settles as black dust onto Arctic snow and ice, thereby darkening it, amplifying melting (Du Plessis, 2020, p.176.). There has been growing evidence of, and concern, regarding the role played by this dust in the melting of icebergs. Research is beginning to identify its processes and impacts. There are some uncertainties regarding this, mandating further research, (Kang., Zhang., Qian., and Wang, 2020,). However, what seems clear, is that the burning of fossil fuels along with other fuels, is producing a hazardous impact on ice and on human health. The source of this is the great invisible haunting climate breakdown. This is perhaps one of the most dangerous dust ever produced by humans. It has, it might be said, been hiding in plain sight. In pure Amato, the scientific community directs our attention towards an accumulation of minute substances, having deadly potential for the planet.

Chapter Three

New Invisibilities, Climate and Implications for Art Practice

This writer is suggesting that the great invisible haunting climate breakdown can be seen in the black soot lying on the planet's ice. This is manifestly lethal dust and amplifies the effects of all other atmospheric dust. How has this happened and why? It is clear that the fossil fuel industry knew the harm that would result from the burning of fossil fuels. Exxon Mobil, the third largest oil company on the planet, was aware of this from the seventies. Their scientists had predicted with accuracy, the emergence before 2050, of the carbon induced emergency now facing the planet. Their response to this knowledge was to actively dispute the science, but only when it began to threaten their business. Other trade organisations in the United States associated with the oil and coal industries, were also aware of this since the fifties (Supran, Rahmstorf, Oreskes, 2023, p.1). This significant knowledge has been erased, made invisible, actively vanished and is “described as a vast blind spot of major climate assessments-ignored in particular, in all but the most recent IPCC assessment report, (61-63)” (Supran, Rahmstorf, Oreskes, 2023. p.7). This vanishing has had a deadly form of assistance from the composition of fossil fuels, in that the byproducts of their burning are invisible to the naked eye. The linking of fossil fuels to ideas of progress and efficiency, in economics, domestic life, industry, transport, flight and wealth, suggests the industry's power. The vast wealth created through extraction is still the key driving force of contemporary society. TJ Demos refers to the foundational energy of this dynamic when he says, “Extractivism remains a driving force and a central paradigm of global capitalism, extending from primary forms of resource mining and fossil fuel drilling to financial, logistical and cybernetic modes of data mining, surveillance, and mass debt production”. (Demos, 2022, p.38).

A contributing factor in the continuing proliferation of extraction may be found in a review of mid 20th century oil related imagery and media. Laura Hindelang tracks the disappearance of crude oil from visual culture, its erasure replaced by a reliance on “images of oil infrastructure and on context-specific depictions of living within petro-modernity or petro culture, meaning lifestyles fueled by cheap fossil energy.” (Hindelang, 2021, p. 675). She suggests that fossil fuel matter has been dematerialised and that sites of extraction and sites of production have been decoupled from consumption in imagination, resulting in specific forms of oil media creating our energy dependent life styles. This is a major factor driving climate breakdown and this thrives through normalisation of our dependence on fossil fuel. She

suggests that the oil derrick became an iconic image of “nation building” or “technological sophistication” which did not “create more awareness about the politics, power relations, and socio- ecological consequences of petro modernity” (Hindelang, 2021, p.678).

Image construction is a central theme in the film installation *Horizontal* by Finnish artist Eijia-Liisa Athila, who brought a ten metres tall spruce tree into *Moderna Museet*, in Stockholm, through the medium of a six channel video projection.

 Among the Trees - How Do You Make A Portrait Of A Tree? | Hayward Gallery

In a review of this work, MacLeod (2020) considers the horizontal projection of the tree as similar to an horizon. A human figure placed to the left of the video, with its back turned to the audience is ‘dwarfed’ by the tree, unable to take in its huge size, and she suggests there is an affinity with the work of the aforementioned David Friedrich, when she says “A lone pine or spruce, as a Rucknfigur, portrays a deeply felt melancholia.” (Macleod, 2020). Despite the impressive presentation of the tree, Macleod concludes that the film was in the end “no longer about the tree at all, but about the human eye, its perception, and how we use technology as an extension of our Anthropocene gaze.”

No discussion of invisibilities in climate breakdown would be sufficiently comprehensive without reference to the work of Kathryn Yusoff (2018). She firmly places the Anthropocene within the context of a white geology which has made invisible, the ways in which colonialism and slavery underpins extractivism to this present day. In her devastating analysis of the debate around the origins of the Anthropocene, she articulates an undoing of the fable of the industrial revolution as its starting point, by placing its origin in the bodies of black persons, whose humanity became dehumanised as property, commodified and traded. The invasion of the Americas by white Europeans brought genocide and famine and the idea of “Global-World- Space. Here the enslaved are coded in parallel with material extraction, under the guise of exchange” (Yusoff, 2017, pp. 31-32) she goes on to say,

The Anthropocene cannot dust itself clean from the inventory of which it is made: from the cut hands that bled the rubber, the slave children sold by weight of flesh, the sharp blades of sugar, all the lingering dislocation from geography, dusting through diasporic generations. The shift of grammar cannot keep the rawness out. (Yusoff, 2017, p.32.)

Yusoff’s uncanny use of the words “dust” and “dusting through” go beyond Amato’s exposition of dust to the invisible denial of racial origins in Anthropocene narratives, to its

current legacy and present consequences in the Marshall Islands and Greenland.

Imaginary and Imaging Implications for Art Practice

If anything has become clear from this brief survey of invisibilities in climate breakdown, it is the need to acknowledge its complex meanings and contexts. Invisibilities in climate breakdown are embedded in new and emerging narratives that seek to articulate from many different perspectives, what this new epoch looks like, and what it means for the humans and more than humans who share the planet into the future. These narratives are emerging in societies of privilege and status, societies of consumerism and taken for granted agency and choice, societies of injustice and loss, of inequality and distress. Artists who wish to work with these emerging narratives, first need a comprehensive understanding of the social relations and power structures, out of which these narratives have emerged. That understanding will not be won easily, as its roots and sources are multidimensional, demanding an imaginative grasp of the almost totally new. Such narratives, breaking our connection to the Holocene, are attempting to articulate from within the present, a global transition of enormous proportions and significance. Artists are now collaborating with scientists, indigenous communities, geologists, botanists, biologists, philosophers, social scientists, cultural researchers, historians, other artists, and disciplines, in a multilayered kaleidoscope of new and emerging knowledge, including what has been forgotten, or never voiced. This seems to mean that a foundational principle of current art practice is the recognition that the world we live in is not simple or straightforward. At this time generosity and humility is required to learn this phenomenon. Alongside this, what seems to this writer to be a distinguishing characteristic of this learning, is the rapid pace at which new information is disseminated and once absorbed, changed. It is difficult to suggest a word to describe this constant alteration, turbulence, being as near to it as I can imagine. What seems central to it, is the need to evaluate each new perspective within this turbulence around its capacity to unseat, white, patriarchal positions of privilege. This is a moment of personal challenge and new world making. To be an artist in the Anthropocene means being prepared to encounter the turbulence, and this seems to me to be a necessary imaginary, a prelude to imaging. In this context, knowledge of what constitutes the invisible is less metaphysical, and more a preparedness to dig deeper, to go beyond the taken for granted meaning, to take responsibility for one's biases and privileges and stay beyond the gate of where one has no right to enter. Addressing the question of how to live beyond the petrochemical addictions

referred to earlier, is foundational, but requires deep knowledge of how the narrative itself is unfolding. As is suggested,

The Anthropocene exhibits a colonial geology, a geology in which spikes are named and conceived, which in turn generates a specifically racialized territorialization of the earth...there is a need to pay attention to the material composition of these geologic moments- and epistemically not to reproduce those arrangements of power in the telling (Yusoff, 2017, p.105).

This implies a central role for Critical Culture in art education- at all levels of education. Should art education institutions provide a specific stream for those who wish to specialise in this area at undergraduate level, and if so what might this look like? In a highly mediated culture, a sharp, critical visual literacy, is dependent upon a willingness to go beyond the apparent, the taken for granted, the quick eye that falls for the persuasion of images, serving a worldview that is making extreme efforts to keep the current status quo in place, “neoliberalism, the zombie doctrine that never seems to die, however comprehensively it is discredited” (Monbiot, 2021, p.53).

There is courage demanded of those who are willing to see the ruined, invisible underbelly of so-called progress. This is the willingness to comprehend that carbon and particulate matter although invisible to the naked eye, are in the air we breathe, in our lungs and the placentas of those waiting to be born, burning through ecosystems, darkening the ice, intensifying extreme weather, the result of the fuelling of a world that must come to an end. This will determine the resistances, the confrontations, the solidarities, and the imaging. This is a willingness to, as David Hicks suggests, to tell the story of “how in a mere century, or so, we have burned half of all the carbon accumulated and buried in the carboniferous period and pumped it into the air as CO₂....” (Hicks, 2015). There is a critical challenge too “in insisting on discourses as fiercely theorised as they are deeply researched” (Jones (2021, p.250). With that realisation and insistence, the issue of the dematerialisation of crude oil and its disappearance from visual culture, becomes a question in need of addressing. Researching and reflecting on how this question might shape art practice is a foundational place to begin.

Conclusion

This thesis began with a question concerning invisibilities in climate breakdown. How might these invisibilities be understood and what the imaging and imaginary implications for art practice might be. The concept of invisibility in climate breakdown is complex and multifaceted. Dust was seen as having the power to carry the invisible, but now evolving technologies, new and more sophisticated measuring of the exceedingly minute is possible. These technologies have shown us the new dust and its lethal consequences.

Added to the scientific pursuit of the ever smaller, there is the obscured, vanishing and forgetfulness of a story failing to recognise the roots of the Anthropocene in slavery, colonialism and Imperialism. There is also the invisibility of the global south in the emerging narratives of the Anthropocene and the continuing addiction to a petro- chemical lifestyle, with all of its deadly consequences for the planet. Many of the issues discovered in this research could not be more fully explored due to word restrictions, such as economic and indigenous research, particularly the work of Max Liboiron (2021) whose radical work sparked a shift in this author's thinking late in the research.

The questions and interview were very modest but have potential for further study. As this study has suggested, a core issue in invisibility in climate breakdown is the dematerialisation of crude oil and the separation of oil and energy production from consumption in imagination. This suggests a foundational space from which to begin making a contribution to art in the Anthropocene.

Appendices

Appendix (i) - Introduction

In a modest attempt to explore the idea of the construction and viewing of images, the author selected three images of Greta Thunberg. These images accompanied an interview with Greta and her father, for the weekend edition of the Guardian Newspaper, published in the magazine section (Hattenstone, 2021). The images were distributed to a small range of people from different walks of life and different age groups. A thirty minute interview with Yvette Monaghan, an Irish photographic artist was recorded and then transcribed. <https://www.yvettemonaghan.com>. -

Apart from Monaghan, only one other respondent was aware of the source of the images. Each person was asked not to look at that source, until the questions were answered. The questions were offered as potential guidelines for thinking about the images and were derived from — presented as part of a Research Seminar with Brian Hand. The main request was that each respondent would give their personal view.



8. Ohlsson (2021)

Appendix (ii) - Interview with Yvette Monaghan, December 2022.

A. Yvette, can I begin by asking you about your own response to the image of Greta Thunberg with the oil on her face and the one where it is coming out of her eye like a large tear?

Y. Yeah, I suppose at the start I thought that's a very clever image, a good illustrative image to get the point across, and I suppose I worked as a commercial photographer for a long time and these would be the kind of briefs you'd be given, not as elaborate as that probably, so in some sense it is not subtle in the message, and I looked at the photographer's work and he is very commercial in his outlook, and that is what they were going for, just to get a very slick image. I saw some of the out-takes, she is laughing and there are all these variations of them, which you wouldn't do in other contexts, so yeah, I thought it was a really interesting image to get her portrait across, but then when I looked at it again, I thought it looked a bit one dimensional, a bit heavy handed, again I'm probably coming at it from a different angle now, just from looking at work that's more long term development of a thought process and a concept. But it's a different media, they are going for a press, they're going for whatever it was used for, for editorial, so you need the message to come out quickly, it can't be too quiet because people won't give it the time.

A. So you think the image was constructed for impact?

Y. Exactly. So the image is quite didactic, you're telling exactly what the message is, there's no ambiguity, there's no ambivalence, it's just, this is the message, clear and loud.

A. I get what you are saying about the message being very clear and very straight and maybe not open to various interpretations, it's very clear what it is about, is there any sense in which the photographer who composed this image aestheticizes it a little bit?

Y. Oh for sure, yes I mean it's very slick, it's very well done, that material, whatever they used for the oil, it must be very reflective, it's all very controlled, like the lighting is controlled and in that instance I think they are going for pure aesthetic. They would have had an art director, I mean if you think of the layers that would have gone into an image like that, there would have been layers of art direction that would have come from a creative director. I

suppose that was commissioned by the newspaper then you have an editorial staff member there. I have a friend who used to work for the New York Times Magazine so I know from their setups how much organisation goes into an image like that, there would be weeks and months of planning so the photographer would absolutely get it on the day, and so it is very much about the aesthetic first.

A. And so is there any sense in which the aestheticization of the issue, does it add to it, take away from it, what do you think?

Y. It's a really good question, the problem is I think, you want full engagement and you want public engagement and you want engagement with a public that may not be visually literate, and I just mean that, I mean it's a very visual society we have today, but you know, that they are not going to read into the subtleties in a visual language that they might read into in an article, so that's really important. So you want to engage the largest audience for this important message, but then you wonder on the same side, does it start to look like a fashion image, does it make any difference, does it have any impact over being a very stylish image. If you went for something else, I mean there's so much imagery that would have come from the original photojournalism when it was so important, when Life Magazine was the way news was disseminated in long form photography and those images made an actual impact, I mean people saw those images of Vietnam and said we want to stop this war, whereas, I don't know if it is just image saturation with or the fact that there is so many media now, I think people are trying not to get lost in that, that mountain of images and so they're trying to do something that is impactful and stand out, but I'm not sure, does it have any longevity, does the message do anything or sink in, other than, people know Greta Thunberg, this is what she is about and so it doesn't really change anything in their mind.

A. She obviously cooperated in the making of this image?

Y. Yes!

A. Because the photographer in terms of his process, seems to allow the subjects of his photographs to determine quite a bit in terms of how the image will look, and I'm trying to imagine what her cooperation might have been, obviously without asking her it's hard to say,

but it seems that she is a willing participant in the portrayal of herself like this, because it is in some ways a self portrait isn't it?

Y. That's it, yes I was kind of surprised that she did something that was a little bit light and so I imagine for her it's always about getting the message out there to the largest audience and so having an editorial in a newspaper like that is very helpful because your going to a very engaged audience, that type of reader.

A. You see I suppose too, the accompanying words that go with that image are quite interesting, in the sense that there's a focus on transformation in the article, her transformation, the way the world has transformed her. It's about her being 18 years old and I suppose the image is very different from other images we have seen of her, because there's quite a few images of her that portray her as almost childlike, whereas this image is communicating something about the emergence of a young woman, whose work in the world, I suppose, has somehow transformed her, but she can't become a person without the oil on her in some way, it's almost like part of herself.

Y. I felt like she was almost carrying the message, a feeling of carrying this very heavy message that she has to carry and I suppose that she gets so much abuse from those in the fossil fuel industry and any kind of lobbyists, you know they are always taking pot shots at her, so she is kind of carrying an awful lot of that really toxic world and the communication around it, where they won't just accept that there is any consequence.

A. Is there any sense in which the image conveys that, you know the way she is very visible, she is the centre point of the image and the oil is slicking itself down across her face but is there a kind of invisibility of the real protagonist behind that image, they're hidden in some way in it, do you think that?

Y. Do you mean like the oil companies?

A. Yes

Y. Mmm, well I thought it was more that she was trying to find her way out of this toxic thing, it is obviously sticking to her but that is what she has to work with, she has to fight

through this and it's, I think oil is the hardest thing to clean and, yes, I was really surprised at how grown up she was, because we are so used to her being a child but she has really grown into an adult now and that she has to almost fight through this mucous now, this toxicity and that she is always fighting to get her message across.

Yes I suppose in the first image she looks like she's been swimming through something, which conveys what you are saying very strongly that she is trying to swim her way or beat her way through all this gloom in the world. In the second image where the tear is coming out of her eye, what did you make of that?

Yeah, I suppose I felt it was so contrived it was very hard to take on, but again I could see how people would think it was an effective image for the message, but I found it a bit populist or yes a bit contrived and overworked.

A. I have been looking at the internet, looking at images of women or children with that tear coming out of their eye and there seems to be a whole genre of images of various people crying. There is an old image of a young boy crying and there is an urban myth around the idea that several fires happened in homes and the only thing that wasn't destroyed was this image of the child with the tear coming out of his eye. I was wondering whether there was any kind of a riff on that in the photograph, you know because she refers quite a bit to, 'our house is burning.' Were they making a reference to that in some way?

Y. I wonder. Again I wonder is it something that happens in one of those editorial meetings when they are trying to discuss what kind of images they are going to create and someone says, have you ever heard that story? I don't know. I wonder if it was a collaborative thought process between Greta and the producers, I don't know.

I suppose another way to think about it, would be if someone said have you heard that story of the tear drop? and then they would have gone to look for reference images for the shoot, and so they would have put it into the internet and got all these images, you are talking about, and somebody brought that to the table and they might have come across that story and they would have a mood board and that's how it happened, I don't know.

A. It is interesting to hear you talk about the processes involved in how such images are constructed because I have no idea about that. I am pretty much like anyone else who sees

that image in the newspaper, I see the image without asking how it has been made or who it is made for? ...the Guardian readership, I'm not too sure how you might describe them.

Y. Liberal, middle class!

A. Yes! So why do you think they are addressing that audience in that way?

Y. I mean it is a bit of a captured audience isn't it, anyway, they have such a strong push for climate change. The forefront of their news is climate change, whereas, if you look at some of the other British newspapers, like the Independent wouldn't really talk about it, the Telegraph avoids it completely, they are trying to bring the immediacy of it to the forefront. They have George Monbiot doing amazing work, so that's their agenda, the environment is really important to them, editorially for the other newspapers it's not, they might pay lip service to it, but it's not a key issue for them.

A. Yes I agree with you I think they are very effective communicators around this issue... and its kind of interesting when you put that image in the context of the Guardian Newspaper's commitment to communicate climate change, as you say, it is difficult to continue to read it because it is so hard hitting, they are continually challenging the public to look at the hard thing about it, that's what at some level that image surprised me a little bit, because it seemed.. I don't know... softer but maybe because it had that element about her as a young woman...

Y. It is for the magazine isn't it?... So they have a separate staff for the news and for the magazine, the magazine would have a different audience because it is for the weekend, you're having your breakfast, you don't want to upset people too much, it's not news, it's an ongoing feature, so its features rather than news if you know what I mean, so they would have a separate staff and so they would not talk to each other.

A. At the core of the story they retell what happened to her as an adolescent encountering her own self, as it were, and the way she stopped speaking and eating and the way she suffered quite a bit in terms of the person she is, and the person she became, and the impact that had on her family, and also dealing with how some members of the public have made life very difficult for them ...so it doesn't hide verbally at least...the words communicate the hard

story, but I think that the image softens the whole thing, that's how it is for me because somehow trying to convey a message about oil through her, I don't know that I find that particularly successful, so it is very interesting to hear you say how such images are constructed and who talks to who and who doesn't and the idea that it is for the magazine is also very interesting.

Y. Yes, and some people are just purely visual, so the photographer is purely visual. I looked at his work so, his work is purely visual. So if it is someone who thinks like that they may not necessarily think it through conceptually, so yeah in the magazine when you open it up there's going to be a light opinion piece usually an op ed in the front, and then you go through it and you have a couple of features, they can be hard hitting, but the images are generally ok, they are not going to be too controversial, so then on the next page you could be into a recipe and then a fashion feature and so that it can't be totally incongruous across the board, so they try to have a general look and feeling, so that you are not feeling totally hopeless by the end of your breakfast. So this is what I think and I know from working on magazines, people may not give it huge amounts of thought but they want to sell the newspaper, they want to sell editions, so that's the key to the successful image and then landing it and the more it can get syndicated, so the more syndication the more successful it is, so that's the kind of effective imagery you want to go for, so that image can be used in an Indian newspaper or a Chinese newspaper, if they were into that, so the image speaks for itself and you don't need necessarily need it to go with the editorial article it can go separately, can be used separately.

A. It is really interesting to know all this, how would you think those images compare with other images around oil? It doesn't quite have the same shock aspect? I mean general images of the issue...I suppose a lot of the images of oil are of oil burning, or stuff pouring out of chimney pots.

Y. That's what I immediately thought of or images or like you know images of oil rigs with the fire flaming out of them in Texas or the middle east somewhere.

A. Yes if it was to be placed side by side with those images how do you think it would compare? Is it part of the same seam of a story or is something completely different?

Y. Well I just think a portrait is a different thing really, and how they approach it and they have used almost a prop in the liquid, and like a lot of these things it can really be just one dimensional, because that how they do it, and so it is for newspapers and so the idea is to move on to the next day. With the internet those images live on a bit longer but the thing is to move on to the next day and the next day's news. the idea is create impact and then you are on to the next day's news and so this is supposed to be a portrait of Greta Thunberg and so they are trying to think of new ways to show her that haven't been done before, she's been photographed a lot, so for Time Magazine she was photographed looking very states-woman-like and imagery like that, so I think they were trying to go for something else. They were trying to find novel ways to do a portrait rather than to communicate oil and I don't mean to dis anyone in editorial but I don't think it is that deep, the thinking. They want to create a visual play and then move on, and have it to be successful and look well.

A. That is very interesting, if I could summarise what you have said, it is an image produced to present her in a way that she hasn't been presented in before, maybe to communicate some kind of shift in her, in terms of her age or where she is going, rather than a serious image about the role of oil in climate change.

Y. Well I suppose that's inherent in it just by using oil they know that this is what she is up against, she's fighting the big machine, but essentially it's a portrait of her that's the main intention, possibly as a grown up but mainly in a different way; they would have seen the image bank and said, yes, let's do something different and often the journalist will have interviewed her separately or if the journalist is interviewing her, the photographer would be setting up in a different place and they might not necessarily know what has been written. I know from portraits I have done, you would not necessarily know. The art director would say this is the message we want to get across but you would not know what has been written.

A. In the final photograph it is just a photograph of herself, it is almost like a revelation, it's like a peeling back of a layer of something that she is involved in, to reveal who the real person is underneath it all, and maybe that was the purpose of the article more than anything else... and does it rob the image of its power a little, to know that it is not really a harmful substance used there?

Y. Yes, you see in a fine art context you would still get away with using not oil on someone's head because to use it would be seen as abusive, that would be seen as very exploitative, at the same time, if I had a student who made an image like that, you'd be telling them it was a bit heavy handed, that you want to leave enough space to open up questions, and you want people to consider things and bring their own thoughts to the table, rather than having the meaning pushed on to you, so you want to convey an experience rather than showing your thoughts exactly, but then they are two totally different projects and sometimes they cross over and sometimes you will see fine art projects in the FT magazine or in the Guardian Magazine but I think it is a different starting point to making work, whereas when I looked at the photographer's work he is a full on commercial photographer, and you can see his thought processes through it, he's creating images in a very visual and slick way, and in a very knowing way, he's very competent at lighting and everything involved, that needs to be, so anyone hiring him would know they are in safe hands. So if you are coming at it from a considered way, from a fine art way, just from crossing over both fields I know that that amount of consideration doesn't go into it, it's usually you're under time pressure and they want to get the image made and it needs to satisfy lots of people, it has to satisfy layers of bureaucracy within the thing, it needs to satisfy the editorial staff and then it needs to satisfy an audience, so they don't want it to be not challenging, but not challenging visually, for people that they think there is something they have to figure out or that its not readable straight away, if you can imagine how people are reading it, it needs to be translated very quickly.

A. Yes I suppose it contrasts a bit with all the other images you see of her, which focus on her activism and her leadership of other young people, lots of the images show her in that particular context, this image almost takes that element out of it, and makes it slightly more comfortable, and the other images are images we are so used to looking at, that in a sense you perhaps don't see them anymore?

Y. That's true I suppose what you are saying is exactly right, she has been taken out of context, which is what happens in a studio portrait, you take someone completely out and you construct an image around them but also, in saying that, all the images of her- people really respect her and her message- but there are some people who cannot really take activism, for them it is like something that makes them question... well I know from listening to people who would be serious neo- liberal capitalists, and they think, oh she's gone too far, her

activism isn't effective, you know people seem to question the action, whereas reading some honest words and a portrait, you are presenting her in a different way, and you are controlling that environment, rather than an image that's taken in a journalistic way that could be different from one second to the next second, or often she's had pictures taken of her shouting, so I think that can be really challenging for people, because it seems like she is a bit aggressive, I think that is what I was trying to say, people don't like aggressive activism, they feel threatened by it for some reason.

A. It is so interesting to hear what you have said about the processes and length of time it takes to produce an image like that for the newspaper, I had no idea about all that.

Y. Well we used to get all these mood boards, you get them on line now and, and you'd have all these storyboards and sometimes colour things and then you'd have to match colour to backgrounds, and then obviously hair and make up, and with something like that you'd be looking for someone who is doing film makeup, then you might have someone who is building a set for you, or for this person he is on the bigger scale of things, so sometimes it can be a huge production team and then there's people at different layers, if you can imagine, there is someone in studio on a camera and behind them there's an operator on a computer back there, there's an art director back there, saying no! no! move her head, we want more of her ears, like literally we used to call it red pencils, blue pencils, and you're saying what should we do here? and you go change the pencils from red to blue and someone would say, that's a brilliant idea, because there are so many people and they are having a day out and they want to feel they are having a say, and that there is control, and everything is working the way it should and there's no room for insecurity or problems and then the person like Greta, we call her the talent, and then she'd be brought in and made sure that she feels as comfortable as possible in as little time, so there might have been an assistant sitting before that with the stuff running down their face, to check all the lighting, it would just be so controlled, a shoot like that.

A. I won't say its the same, but when you think of a person who is trying to produce an image that is asking the viewer to think in a considered and careful way about what they are being presented with, there's no less effort on that person's part in terms of a production or something that happens as a result of a process, but the intentions are somewhat different aren't they?

Y. Very much yes, so there's a lot of art photographers who work in a similar way, like Gregory Kurstin would have 100 lights in a street closed off and Juia Moore sitting on a bed, a huge production, but then his intention is the gallery and spaces around an idea, whereas this is for output, a successful output and everyone's happy, and all intermediaries are happy when the client is happy, no-one cares about the other people until they get the image and they are all happy with it, and so you need to do something that's within a parameter that its safe enough to get done and work.

Appendix (iii) - Questions Asked

1. What do you think the images are saying?
2. Who do you think the images have been made for?
3. Is there anything you notice about how the images have been made?
4. Anything surprising about them?
5. Why do you imagine Greta allowed herself to be photographed in this way?
6. What do the images convey to you about climate breakdown?
7. Is there anything here that you did not see the first time you looked?
8. Do the images change your picture of the subject?
9. Are these memorable or forgettable images? Why for your choice.
10. Anything you would like to add?

The questions were given by Brian Hand during the Research Seminar, NCAD, October, 2023.

Appendix (iv) - Respondents

1. Early thirties. Self employed. Homemaker. Italy.
2. Age 15. Second level school pupil, Moate Co Meath. Ireland.
3. Mid Thirties. Chief Marketing Officer for a fuels research company, Brooklyn, New York.
4. Early Sixties. Homemaker and social activist, Dublin, Ireland.
5. Mid forties. Data Analyst, Dublin, Ireland.
6. Age 14. Second level pupil, Wicklow, Ireland.
7. Age 12. Primary school pupil, Wicklow, Ireland.
8. Early thirties. Student. Co Meath, Ireland.

Appendix (v) - Answers to Questions

Among those who reviewed the images with the suggested questions, it may be said that the questions have directed their considerations, as the answers show thinking beyond the intentions of the purely commercial intent outlined above. Each respondent has taken time to consider the images beyond what might normally occur.

All respondents are familiar with Thunberg and this knowledge is used to read the images also.

Respondent 1 reads the images through their aesthetic quality and links the images to others in popular culture, specifically, Billie Eilish. That link refers specifically to the video below.

<https://youtu.be/pbMwTqkKps>

This respondent suggests that those who ask what this image is saying, are a specific demographic, and while the images are not controversial, she is aware of potential negative critique from those who subscribe to cancel culture. The respondent also questions the material used to suggest oil and how this aspect of the image was made. The images are considered memorable because they are beautiful.

Respondent 2. Identifies Thunberg as one of ‘our’ generation's most well known activists. The images suggest urgency with the ‘paint ‘ illustrating what will happen if action around climate breakdown is not taken. The paint conveys shock and catches the eye. Thunberg’s willingness to be photographed in this way was to begin a conversation, possibly with Government officials to suggest the urgency and need for action. The respondent cares about climate 'change and suggests that part of the appeal of the images as a carrier of Thunberg’s message, are their aesthetic appeal.

Respondent 3, considers the images carefully and takes time to write a comprehensive review. The respondent suggests that the subject's loss of innocence is conveyed in the images. The respondent is aware of how lighting and colour tone achieves a contrast between youthful aspiration, and the ‘harsh realities of fossil fuel dominance.’ Her eye is considered a potential ‘metaphor’ for an ailing planet, beautiful to behold but rotting and in a state of breakdown. Is mother earth crying and shedding herself of the poisons she holds deep within her layers? The potential failure of Thunberg’s efforts is read in the image of her face covered

in oil, as she takes on the systemic power of a century of extraction. The respondent is aware of the source of the images and the potential readership of the Guardian newspaper, as being a centre left readership. The respondent suggests the images are framed to appeal to the limited discourse of that readerships' politics. The respondent is critical of this appeal suggesting it is expressive of a limited world view, latent cynicism and apathy. The respondent suggests photoshop has been used in the composition of the images to suit the editorial view and maximise online engagement. The online and viral potential of the images suggest why Thunberg cooperated in their making as they hold the potential for resharing and online protest. The images are considered as not memorable as their aesthetic is that of Instagram, the limitations of the present discourse around climate breakdown and a simplistic relationship between online and offline culture. The respondent critiques the polemics of inaction and the failure to be solution focused created by hyper-mediation. This often creates the feeling of action, when in fact no action is being taken. The respondent critiques art forms for their fleeting, apathetic and unremarkable imaging, evoking momentary attention that evaporates when the next controversy arrives. This is corrosive and encourages the kind of self satisfied judgmentalism that undermines efforts to halt the worst effects of climate breakdown.

Respondent 4 found all of the images startling. The oil image suggested an oil spill with its impact on bird life, head to toe in oil from beak to wings, facing death. It made the respondent consider the damage the oil industry is doing. Thunberg's sightless eye provokes the question, are we blind to what is happening ? and makes the respondent consider whether it is an anti oil advert. The image is considered memorable and shocking. The respondent considers the image with the tear is sad and despairing, but the eye without a tear suggests hope, despite the subject's upset. The portrait of Thunberg without the oil suggests she is not afraid and ready for battle, but the respondent dislikes the image as it evokes an objectification of Thunberg.

Respondent 5 notes the images as portraits of different sides of Thunbergs personality and composed to go beyond her activism and views of her among a crowd. The aim is to focus on her. The images highlight her beauty and innocence which contrast with images of her giving an impassioned speech. The respondent is surprised that Thunberg agreed to the making of such intimate images. Because she has been the object of scrutiny and judgement the respondent considers Thunberg was hoping for a more sensitive, introspective and content

image of herself. This respondent considers the images to be memorable, especially in the light of Thunberg's strong concern regarding our reliance on fossil fuels, as the eye imagines the oil on her face eventually submerging her. This is a powerful image.

Respondent 6 considers the purpose of the images to show how climate is affecting the planet and the people with fossil fuels and that they have been made for everyone. While there is nothing surprising about the images, the respondent considers Thunberg agreed to the making of the images because she knows what's happening and she wants to show it. The respondent considers the images memorable because they make 'you feel bad for her and the planet.'

Respondent 7 the image without oil suggests that Thunberg is saying she wants to be treated normally, where there is a tear, she is sad about something and with the oil, it has to do with climate. She let herself be photographed this way as she is all about climate change. The respondent did not at first realise the tear was oil, but considers the images are memorable because she can tell there is something behind them.

Respondent 8 Sees that the images are saying something about climate change. They have been made to publicise global warming, and Thunberg too. The respondent considers the images have been photoshopped, especially the one with the tear. The respondent questions the colour of the liquid and says it is surprising, wondering whether it is purple or dark blue, like one might imagine tar to be. This the respondent suggests, makes the images more about fashion, culture and paint, about glamorising. The respondent considers the motivation for Thunberg was to make a statement and to be in the magazine. The images convey very little about climate breakdown. The one with the tear suggests she is crying for humanity. While the images do not change the respondent's views about climate breakdown, the respondent sees that in the context of a conversation about this, reference could be made to the images. The respondent considers the images memorable, as Thunberg is almost like something that trends, and so the viewer is very aware of her. The respondent is struck by her youth in the final image.

Appendix (vi) - Discussion of interview and answers to questions

Interview

In the interview Monaghan draws on her knowledge and experience as a photographic artist and recalls her early career as a commercial photographer. Her knowledge of both fields allows her to reconstruct the making of these images, taking the interviewer through the processes, personnel involved, and the purposes of the composition of such images. The overall objective in this process is to make a 'slick' and aesthetic 'image' for maximum impact, with a straight clear message, not open to multiple 'interpretations'. Thunberg is taken out of context and her activism is downplayed. From the art director to the makeup artist, many layers of preparation go into the making of such images, with the main focus being maximum engagement of as many readers as possible within the 'captured audience' of the Guardian readership. A clear intention would be to extend the images beyond that readership to successful syndication. This is not news, it is not meant to challenge the reader conceptually, but to present Thunberg in a new and different light. A key to its syndication is that the image can 'stand on its own' without the accompanying text. The images are 'purely visual' composed by a photographer who understands his brief and is very competent with lighting, who is 'controlling all of the elements involved.' The image conveys the message of Thunberg attempting to find her way out of this toxic thing...obviously sticking to her...it's what she has to work with...she is always fighting to get her message across.' In a fine art context these images may be considered a bit 'heavy handed'. The next turn of the page in the paper or swipe online might bring the reader to a recipe.

Discussion of Answers

The interview provided an interesting and very competent analysis of the process and purposes of this kind of image making. It provides a comprehensive background against which to read the answers to the questions. Despite the stated commercial purposes of the image making, the discussions of the images show that each person brought their own lens to their reading.

Both the interview and the answers show image literacy, albeit not all at the same level of fluency. It is clear that respondents 2, 6 and 7 are young people. What is interesting in respondents 6 and 7 is the hint at anxiety and guilt the images provoke in 6 and the innate sense in 7 that there is something behind the images, perhaps not fully grasped, but

nevertheless apprehended. This points to the power and impact of images, even those not fully understood. In respondent 2 the images evoke a kind of identification with the subject, showing positive regard for Thunberg and what she stands for, and awareness of her potential audience. The aesthetic aspects of the images are focused in 8, 5, 4, 2 and 1. While 5 may be a more psychological reading than others the aesthetic element is there. In both 1 and 8 there is an awareness of images in popular culture, 1 seeing it as part of a trend perhaps, and 8 being aware of the commercial elements in the making of the image and its potential link to publicity online. This response is also aware of image editing.

The use of the words innocent and beautiful are treated as a construct in several of the responses, some suggesting this aspect of the images makes them memorable, while some contrast this aspect of the images with the opposite of what can be conveyed about the planet, being aware of the symbolic nature of the images. This is clearest in respondent 3 whose response most closely matches the answers in Monaghan's interview. This response contains a considered analysis of the images that is connected to a critical understanding of image composition, which is then placed in an understanding of the link between image making, culture and climate breakdown. Respondent 4 is critical of the image without oil, finding this portrait contains an objectification of Thunberg. This comes at the end of a careful reading of the other images in which the primary sensitivity is the emotional dimension of the images.

Appendix (vii) - Conclusions

As this is a very small sample, one needs to be cautious about what one might conclude from it. It does suggest that this type of research might yield interesting insights with a larger group with images composed in a variety of mediums, both commercial and fine art. The writer met and talked afterwards with some of the respondents and the questions generated broader and interesting conversations. This suggests an interesting location for the discussion of climate breakdown issues. It is possible to see how each respondent brought a unique lens to the readings of the images and that suggests another interesting dimension to explore. These different lenses might suggest novel ways to approach talking about climate but that would require a bigger population and a more extensive study, with more carefully considered specific questions, followed by a conversation. An interesting question to pursue in the future, might be what kind of images readers would make after such conversations. Reading the answers to the questions through the interview also suggests that the kind of visual literacy to be found there, if shared, might impact how people see and interpret images of climate breakdown. It is the writer's intention to research and develop this further in the future.

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