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Rewriting the machinic Capitalocene: Using speculative fictional methods

Charlie Tweed

Introduction

This chapter will highlight how, in this era of ecocide, speculative fiction can be a potent tool for creative practitioners, a tool for channelling non-human perspectives, revealing hidden networks and relations, and a tool for rethinking the operations and material impacts of the 'machinic Capitalocene', therefore helping to define new potential futures for humans, machines and the earth, and new ways of thinking and operating within more-than-human worlds. I use 'more-than-human' here to describe complex assemblages of entangled and interdependent life forms, ecologies, materials, forces, liquids, networks, technologies and waste that are utilized, affected and also produced by the operations of the machinic Capitalocene – that is, all forms of machine that have been harnessed within the operations of integrated world capitalism (Guattari 1981) to control both populations and environment and to extract value. The development of the contemporary mechanics of integrated world capitalism (IWC) is expanded on by Guattari:

> Contemporary capitalism can be defined as integrated world capitalism, because it tends toward a state where no human activity on the planet can escape it. It can be considered to have already colonized all the planet's surfaces, so that the essential aspect of its expression now concerns the new activities that it seeks to overcode and control. (Guattari 1981)

At the same time these machines actively contribute to ecocide because they are produced from earth's raw materials, powered by its fossil fuels, and networks

of contemporary control technologies are literally embedded within its strata before returning to the earth as forms of e-waste.

In the introduction to Guattari's *The Three Ecologies* (2000), its translators Ian Pindar and Paul Sutton note that 'Guattari objects that we have challenged the Earth enough and are now on the brink of ecocide. After a century of unparalleled scientific and technological progress we have made our presence known to the planet in the most dramatic and self-defeating fashion' (Guattari 2000: 3). This prediction of impending ecocide that is driven by technological and scientific 'progress' has unfortunately become even more resonant today. My focus here will be to consider strategies within creative practice that can engage with the technologies of capital, exposing, re-writing and subverting them, using fictional approaches within art practice.

I will begin by defining the condition that I am calling the machinic Capitalocene in more detail by discussing Brian Holmes's concept of the 'electronic noosphere'. This will help to reveal the complex machine and signal assemblage that enable the ecocidal operations of capital upon the earth and its inhabitants (both human and non-human). From here I will draw on Timothy Morton's work on hyperobjects to consider how the 'electronic noosphere' is something that humans are unable to perceive due to its complexity and scale. I will also draw on work by Jennifer Gabrys who considers how the earth itself has become computational. I will locate the material realities of this digital Capitalocene, considering how our 'virtual' technologies are deeply rooted in the earth and its materials.

I will then consider my response to these conditions via my art practice which utilizes the mediums of video, text and performance as well as a range of fictional strategies. I provide an in-depth case study of my recent project, Re-writing the Machinic Capitalocene, which examines a number of art works in performance, sound and video. I will argue that artists can challenge the conditions that have led us to ecocide by employing a number of fictional approaches in their work to channel non-human perspectives, locate new relationships between humans, machines and the ecological and to draw out critical and subversive proposals for the future of humans and their machines in the era of ecocide.

The machinic Capitalocene

In terms of the relation between capitalist machines and ecocide, I foreground the term 'Capitalocene' here to connect with Jason Moore's definition of 'a system

of power, profit and re/production in the web of life' that began four centuries before the Industrial Revolution which is widely cited as the starting point for the human induced 'Anthropocene' (Moore 2017: 594). Moore argues that Capitalocene is a more suitable term than the widely contested Anthropocene, because it specifically addresses the impacts of capitalism on the planet.

I connect this system of power with the operations of human machines which have developed into what Brian Holmes defines as the 'electronic noosphere' (2009) to describe the vast networked machine assemblage of contemporary control technologies, with signal qualities, writing and coding qualities and physical material qualities, a second skin surrounding the earth's biosphere. Holmes's definition builds on the concept of the 'noosphere' which was developed by Vladimir Vernadsky, who describes it as the new state of the biosphere which is adapted by human cognition and operates as a new planetary sphere of reason (Pitt and Samson 2012: 6).

The 'second skin' of the electronic noosphere is not a simplistic set of virtual signals but instead a much more complex and physical machine assemblage. Benjamin Bratton (2015: 519) also discusses the idea of a vast and totalizing form of planetary scale computation and highlights the complex layering of technologies in relation to the earth:

> Planetary-scale computation involves the whole Earth from which silica, steel, and all manner of conflict minerals are drawn. Computation is not virtual; it is a deeply physical event.

Bratton's concept of the 'deeply physical event' of computation helps us to bring the complexity of the network assemblage of the electronic noosphere into view. From here, we can begin to identify the complex relations with power sources, such as oil, and raw materials like columbite-tantalite (coltan), as well as e-waste sites and operations of technological production. These networks then consist of many human and non-human moving parts, and they have a powerful agency over the earth and its inhabitants. The vastness of these networks is something that humans can have difficulty appreciating or visualizing, and in this sense, Timothy Morton's definition concept of the hyperobject is useful. Morton identifies hyperobjects as vast objects that are massively distributed in time and space and therefore difficult for humans to visualize due to their magnitude. He says that they are 'viscous in terms of sticking to the beings involved with them' and that they are non-local. Finally, he notes that they involve 'profoundly different temporalities to the human scale one' (Morton 2013: 104).

I would argue that all forms of networked technologies are forms of hyperobject; they too are 'massively distributed within time and space' (Morton 2013: 104). Once we step back from the definition of them being 'virtual' or remove their black-boxed casings, we reveal complex and vast network assemblages, and from here, the links with the earth and its materials are clearly exposed. In this sense, we might look at these networks and consider how they are powered by the consumption of the earth's raw materials and at the end points of digital technologies, when they rejoin the earth as a form of waste material. The deployment of waste materials might be a fruitful way to then examine the relation between machines and the earth, as Holmes notes:

> From [the hyperobject's] perspective, the handful of petcoke that you can pick up along the side of the river becomes the withdrawn index or impossible clue to the vast interlocking system of energy production and its consequences, on the scale of the planet earth and in the dimension of geological time. (2017)

Jennifer Gabrys also observes that 'the apparently dematerialized interface is far from the virtual sphere and depends on power structures and resource movements and material economies, all of which rematerialize when electronics literally break open to become waste' (Gabrys 2011: 70).

Once we begin to interrogate the actants within the electronic noosphere and consider its hyperobjects, exposing its networks and black-boxed machines, the fiction of it being clean or virtual is soon exposed, and its physical realities come into view. Speculative fiction is a method to expose and rewrite the machinic Capitalocene:

> Far from being an escape from the world … fiction takes us to its symbolic centre and might allow us to establish some leverage within the tangled contingencies and hidden conventions that lie there. (Shaw and Reeves-Evison 2017: 7)

Within these conditions, I wanted to develop several new fictional strategies within my art practice that could confront the embedded fictions surrounding digital technologies in relation to ecocide. I wanted to develop a series of art works that illuminate the unseen components of the electronic noosphere and its hidden assemblages of black-boxed devices. Furthermore, I wanted to extend the use of documentary fiction approaches in my work to propose new relationships between human and non-human, machines and the earth.

Simon O'Sullivan describes the potential of a strategy of 'fictioning' within art practice:

> This collapsing of hitherto separate worlds – and the concomitant production of a 'new' landscape, a new platform for dreaming – is another definition of fictioning, especially when it is no longer clear where the fiction itself ends and the so-called reality begins (or where reality ends and the fiction begins) … . This is fictioning as mythopoesis: the imaginative transformation of the world *through* fiction. (2017: 6)

This sort of social science fiction allows for the playback of possible futures onto the present as a mechanism for critique. Donna Haraway also highlights the usefulness of speculative fabulation as a critical strategy for re-imagining relations with the non-human:

> As Jim Clifford taught me, we need stories (and theories) that are just big enough to gather up the complexities and keep the edges open and greedy for surprising new and old connections. (Haraway 2016: 82)

Furthermore, it is important to mention the work of Reza Negarestani (2008), who has used speculative fiction as a strategy to unravel the biopolitics of petroleum and the 'voice' of the oil life force below the surface of the earth's crust. In all of these cases, the use of fiction moves beyond the realm of fantasy to become a relevant and contemporary tool for decoding and rethinking our relationships with both technologies and the earth.

Fiction also allows for critical re-imaginings of technological futures and relations, and this is often associated with the practice of design fiction. As Joshua Tanenbaum observes, 'design fiction is a way to envision new technologies in the distant future, while utilising narrative to show how these technologies are positioned within a new context' (Tanenbaum 2014: 22–3). In design fiction, storytelling approaches are used to formulate these new technologies, and this method connects closely with some of the narrative approaches that I have employed in past works where future proposals have been formulated for particular sites as both a mode of critique of the present conditions and as a way of generating discussion.

I am therefore proposing that speculative fiction is a potent tool for artists to navigate between human and non-human worlds, to tune in to the complex interrelations between the human and the ecological and to rethink the mechanics of the Capitalocene and its plethora of technological operations that surround the earth's biosphere. In this way we can use these strategies to challenge, confront and rethink relations with technologies and the earth in the era of ecocide.

Case study: 'Re-writing the Machinic Capitalocene'

This case study considers my creative research project, 'Re-writing the Machinic Capitalocene' (2012–17). The project examined the complex relations between digitally networked technologies and the earth and put into practice some of the fictional approaches outlined in the previous section. It asked two primary research questions: how can the field of media art employ speculative fictional methods to expose and rewrite the relationships between digital technologies and the Capitalocene? And, how can such methods bring into view non-human voices and perspectives?

The project began as a performative lecture at Bristol's Arnolfini Gallery (2014), and was later delivered at the Central Academy of Fine Arts in Beijing (2015). This fed into the development of a large-scale audio installation exhibited at Stanley Picker Gallery in London (Tweed 2017a,b,c). 'Re-writing the Machinic Capitalocene' built on my previous work where I have made use of fictional alter egos and anonymous collectives as a means for developing critical art works that outline speculative proposals for future relations between human, earth and machine. In these past projects I employed forms of re-appropriation, where I would work with archives and 'waste' digital materials in the form of found videos and images, reprocessing and re-contextualizing this source material into subversive proposals for change.

For 'Re-writing the Machinic Capitalocene', similar methods were deployed and extended; in this case I took on the role of an anonymous group of 'researchers', whose identity was ambiguous, blurred between human, machine and hybrid biological being. The framing of the project was made operational via the construction of a fictive research space positioned underground, deep below an e-waste site in Guiyu, China, located amongst the earth's strata and the raw materials that are used in the production and operation of digital technologies.

This fictional group were engaged with a research process, unravelling the assemblage and operations of the electronic noosphere. The 'researchers' were intentionally opaque, hybridized life forms, borrowed from a scientific project methodology and positioned as the origin of the practice-based strategies and works produced. Their voice is that of an anonymous group emerging from the mesh of the electronic noosphere and its intertwining flows. The development of 'the researchers' built on the use of alter egos within my art practice and allowed for the project to be framed via an overarching fictional device, taking on the characters and the voice of the collective.

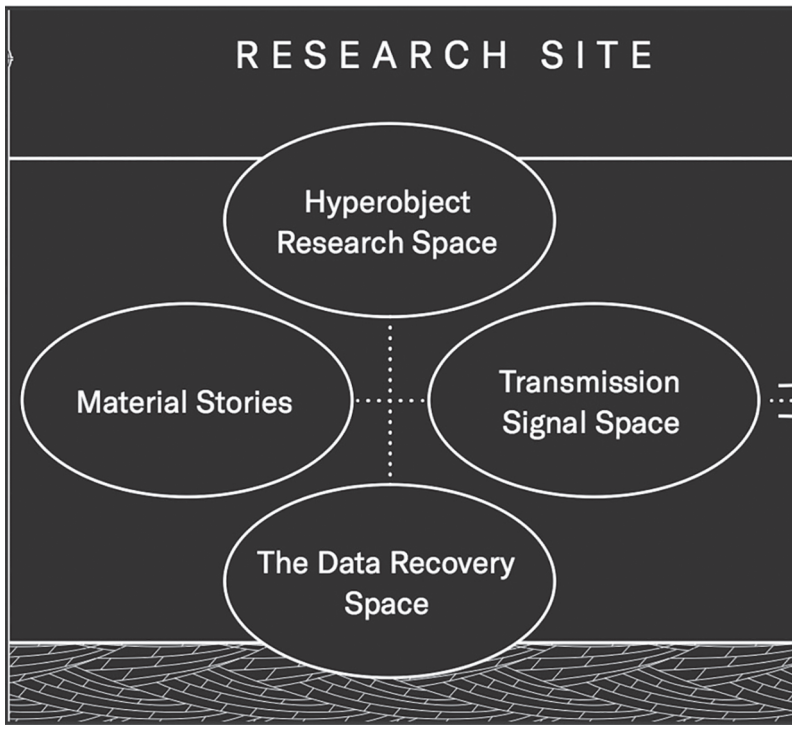

Figure 10.1 The Signal and the Rock map, 2016. Charlie Tweed. Courtesy Charlie Tweed.

In the spaces shown in Figure 10.1, the researchers explored the electronic noosphere from a material and network perspective. Their 'research spaces' included the 'hyperobject research space' where technical hyperobjects and assemblages of humans and non-humans were mapped out. Also, the 'material stories space', where the relation between various raw materials and digital technologies was interrogated, the voice of these non-human things developed. This work was extended in the 'data recovery space', where lost data were recovered via my fictional methods from old components to non-humans, animals, images and e-waste.

Mapping the technical hyperobject of a smartphone

Under the guise of 'the researchers', I developed works that emerged from these research spaces, for example: a mapping process was employed to trace the technical hyperobject of a smartphone, including the sourcing of raw materials, the production of new forms of waste and the impacts on humans and non-humans.

The initial map focused on a specific smartphone, the Sony Xperia Z, and references a particular television advertisement for the device (Sony 2013). The television advertisement was used because it offered up the phone as a sort of magical device in its black-boxed skin. The advertisement notes its 'seamless reflective surfaces' and employs affective visual and audio techniques to draw the viewer into its associated fictions, saying, 'immerse yourself, take yourself somewhere else' (Sony 2013). These fictions very clearly hide the audience from the complex and unseen networks of humans and non-humans involved in the phone's production, operation and disposal.

In this context, the advertisement is a useful example of the sort of fabulatory system that Mark Fisher highlights when he notes that 'Science-Fiction (SF) capital seizes the power and vitality of becoming, capital that has sunk so deeply into life so that the hyper-commodity is not an object but an intricate, micro-sensitive web inducing participation and involvement' (Fisher 2001).

However, beneath the advertisement's narration are the realities of its raw materials and the sites from which they are sourced, its production processes and its disposal methods. The map also traces the origins of the smartphone's key components, including the screen, the capacitor, the vibration-alerting mechanism and the circuit board and its coating. The capacitor is made from coltan, which is mined in the Democratic Republic of the Congo (DRC), and the impact of this activity on the rare mountain gorilla population is highlighted.

The multitude of geopolitical implications at play within this single device begin to be brought into view. In this way, the mapping process operates as a political strategy within the practice for debunking the fictions around black-boxed technologies. The concept of 'black boxing' has been described by Bruno Latour: 'scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become' (Latour 1999: 304).

As a result of this approach, human and non-human impacts are revealed, and the mesh of interrelations between the two are highlighted. A key point to note here is that many of the causes of ecocide are the result of humans living within a plethora of 'bad fictions', for example that technologies are virtual and clean or that continuous expansion and consumption of the earth and its raw materials is sustainable. Therefore, it feels a potent strategy to enlist an alternative use of critical fiction here, as a creative tool that can be employed by

artists for illuminating and subverting hidden power structures and proposing future scenarios for change.

The Xperia Z 'map' that I produced highlights and exposes the many components within the construction and operation of the smartphone and records the various actors involved in the process ('the human and non-human moving parts'), including the NASDAQ index. The NASDAQ index is a stock market index that allows for the trading of raw materials used in technology production. As these raw materials are traded, the index impacts on the rate of raw material extraction within locations such as the DRC. In this context, Jennifer Gabrys highlights how the NASDAQ index sets into play a series of material processes:

> The NASDAQ sets into play a performative and material economy with political, cultural and environmental 'affects'. The electronic extends from technologies to markets and to modes of waste, decay and disintegration. (2011: 51)

Finally, the map plots the various forces that return to the user in relation to notions of perceived obsolescence and the return of the device's 'waste' materials to the soil as dirty matter. It highlights the disposal of the device at sites such as Giuyu in China, which is the world's largest e-waste site and has been called the electronic graveyard of the world (Yeung 2008). The map attempts to show how every part of the example smartphone is entwined within this complex assemblage of relations and also how it is entwined in a very detailed way with the soil and the earth's crust as unusable parts finally come to rest within the soil below the surface of Guiyu and its 4,000 'recycling' workshops.

Therefore, the map highlights that the signal and the digital device are closely connected, and the notion of 'clean technologies' is exposed as a reality of constantly moving and reforming materialities and temporalities. The final waste materials generated in the deconstruction of these technologies make a direct contribution to earth's ecocide, literally returning to the soil and becoming embedded once again within its strata.

Performative lecture – 'The Signal and the Rock: Proposal for a Film'

'The Signal and the Rock: Proposal for a Film' was the next stage of this project, building on the mapping process of the smartphone and focusing on a specific component, the capacitor and its complex web of connections and impacts.

The work was realized as an artist's performative lecture that merged fictional, theoretical and documentary material, first delivered at the Arnolfini Gallery, Bristol (2014), to diverse audiences of artists, students, curators and scientists. The work employs a fictional approach to depict the activities of 'the researchers' and the lifespan of an electronic smartphone capacitor, removing it from the smartphone assemblage and tracing its origins. The capacitor is important here because its function can be likened to that of a heart: it keeps a digital device 'alive' by retaining electrical current.

The lecture built on a methodology of exposing unseen and hidden networks and processes as a political act in the practice. I attempted to embody the complex relations at play between the component, its raw materials, past histories, different temporalities and the earth's biosphere and the surrounding electronic noosphere, in this way exposing the technical hyperobject and true network assemblage of the capacitor.

The work also utilized a high-speed delivery with many 'jump cuts' and 'performative edits' in order to move between the different materials, relationalities, locations, technological histories, macro and micro scales and temporalities:

> >capacitor
>
> A capacitor acts as the heart of the device; it holds its power and keeps it alive.
>
> Without its capacitor, it would simply run out and shut down.
>
> >tantalum
>
> Tantalum's source is rooted in the earth and its slowness, but it is also part of the high-speed flow of processes and electromagnetic signals on the surface above it.
>
> The transformation from its time of origin, deep underground, to its time on the surface has an unwelcome effect on the tantalum and provides many unwanted stresses and confusions.
>
> But this tension is important, and sometimes a certain type of magnetism draws it back to its origins. (Tweed 2013)

The lecture included references to many different actors within the network of the capacitor, including animals such as the mountain gorilla in the DRC.

> >gorilla
>
> A mountain gorilla in the Democratic Republic of Congo looks towards the sky, it follows a plane as it flies overhead emitting a trail of nitrogen oxide. It continues eating. (Tweed 2013)

As the lecture progressed, it traced the black-boxing process of the capacitor until it is finally marketed to the consumer via a series of complex fictive marketing strategies. At this point, an example phone advertisement for the Sony Xperia Z is played, and this re-appropriated advertisement and its use of affective and fictional strategies on its viewer are exposed.

The use of language around its high-definition qualities and its ability to make the virtual 'become real' functioned here to expose the unreliable narrator behind these words as it says, 'Immerse yourself, find yourself somewhere else' (Sony 2013). Within the conditions of the performative lecture, the advertisement played a completely new role, and in exposing its own construction and artifice, it functioned to subvert itself.

In the final section, the lecture made a 'call to action' that identified a new relation between the technological and the ecological and outlined a speculative proposal for new kinds of hybrid biological and self-sufficient machines. It identified a proposal for the future sustenance of these machines by harnessing fusion technologies and Turing's concept of 'morphogenesis' to formulate new hybrid materials. As a result, a satirical solution for technological sustainability is proposed, a solution that is based upon actual research around the use of nuclear fusion as a way of manufacturing raw materials.

This work allowed me to build on the idea of creating a subversive fictional transmission as an art strategy, where the various components of the black-boxed Xperia Z phone are illuminated, along with the complex set of entanglements and impacts on both humans and non-humans. It identified an approach that brings in to view the realities of black-boxed technologies, the fictions of their virtual qualities, and the artifice of their marketing strategies, and how they are embedded within the earth and its raw materials. The lecture was later delivered at the Central Academy of Fine Arts, Beijing (2015), to a large group of students who engaged with it deeply, most of them raising the point that they did not know about the e-waste recycling activities taking place in Guiyu.

Development of an audio transmission: Rewriting the overcode

In the final phase of the project I evolved the lecture into a large-scale audio work for a final exhibition at the Stanley Picker Gallery (Tweed 2017b). I first developed a script for the different voices that emerge from the map of the fictional

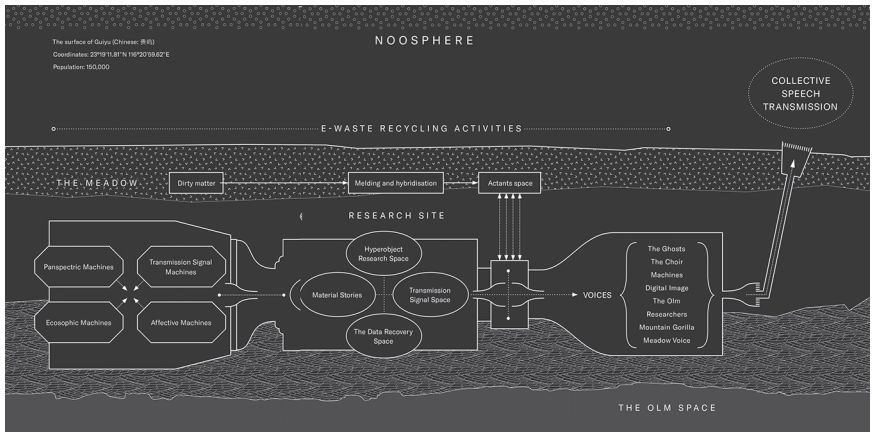

Figure 10.2 The Signal and the Rock map (expanded), 2016. Charlie Tweed. Courtesy Charlie Tweed.

research site, and activated the perspectives of the various actors (including a choir of various disassembled machines, components and devices; the various researchers from the research spaces including the hyperobject research space and material stories research space; the digital image and the mountain gorilla), anthropomorphizing them for a human audience.

The aim was to produce an audio transmission in which a series of disembodied voices emerge from the non-linear layerings in the strata below the e-waste site of Guiyu, China. These layerings are the location of the fictional research site and the imagined future location of broken, disassembled, unseen and forgotten technologies, their code and their algorithms as they decompose, travelling downwards and forming into layerings within the earth. In this sense, it is a site of relationalities between all sorts of materials (human and non-human). The transmission's structure also acted to expose the hyperobject of the electronic noosphere and bring into view some of the complex relations between animals, machines and biological materials.

The voices of these different things emerged in the work as a way of highlighting the unseen, the de-punctualized (disassembled) black-boxed technology, the non-place and the hidden ecological and human cost of technological production and disposal. The 'channelling' of these voices was realized using multiple mechanisms, my own voice, appropriated voices, synthesized voices and text-to-speech software, so that in the audio work we experience an assemblage of many different registers and perspectives. In this way I evolved the fictional methods to make use of a sort of role-playing approach where the artist becomes a device for tuning in to and illuminating more-than-human worlds.

The voices are also intended to have a hauntological and spectral quality to them. The performance of these voices through my own voice or via digitally mediated voices allowed me to activate these hidden components and networks and to connect them with physical forms of waste. In this way, I took on the role of an 'intermediary', attempting to tune in to the voices of abandoned technological components such as capacitors, as well as various non-human life forms that are affected by the construction and disposal of contemporary technologies.

This approach also acknowledged the problematics of speaking for the non-human (from the biological to the technological), aware of the fact that the fictional voices were themselves a human construct. However, the aim here was to locate an approach for communicating with a human audience, using fictional tactics to engage with non-human perspectives and temporalities, the artist acting here as a form of 'diviner', translating and tuning in to other temporalities, materials, components and life forms.

Utilizing the idea of hauntology, the audio work allowed for these non-human things to be 'heard' and their virtuality to have an increasingly material presence, which is then traced in a section that focuses on exposing the true network of a smartphone capacitor. These voices act as an interruption of the present, as Weinstock notes:

> The ghost is that which interrupts the presentness of the present, and its haunting indicates that, beneath the surface of received history, there lurks another narrative, an untold story that calls into question the veracity of the authorized version of events. (Weinstock 2004: 5)

Derrida describes hauntology as the act of haunting, which is about the traces between past and present, between here and there. The ghost 'introduces knowledge of a supernatural and paradoxical phenomenality, the furtive and ungraspable visibility of the invisible' (Derrida 1994: 7). These traces have potential as a method for intervening in the conditions of the present, disrupting linear time, intermingling with the sound waves and signals of the day to day and interjecting knowledge and histories from technology's unseen and forgotten pasts, presents and futures.

Conclusion

This chapter has highlighted how, in an era of ecocide, speculative fiction can become a useful critical tool for creative practitioners. That is, fiction that moves

beyond the realm of fantasy to become a relevant mechanism for decoding and rethinking our relationships with digital technologies and the earth's biosphere and noosphere, as a tool that better approximates current conditions and can be utilized to propose other potential futures.

The various fictional methods discussed here illuminated the operations and material impacts of the digital Capitalocene and its associated hyperobjects. In this case, they confronted the myriad fictions of digital technologies that promote their virtual, clean, eco-credentials and instead located them as a key mechanic of contemporary capitalism, consuming and polluting the earth, and a key enabler and contributor to ecocide.

The fictional structure employed throughout the project allowed me to translate and 'tune in' to spectres and non-human voices under the guise of 'the researchers'. The functionality of the fictional underground research space allowed me to operate as an intermediary between human and non-human, attempting to tune myself into more-than-human perspectives and bringing into view the otherwise unseen and the unseeable. This role play became a means for human performers to engage with non-human temporalities and life forms.

The strategy of 'tuning in' and transmission opened up the use of fictional personas within my art practice to encompass a variety of non-human voices including animals, machines, components, materials, e-waste, objects, codes, networks and processes. The channelling of these voices was realized using multiple mechanisms, my own voice, appropriated voices, synthesized voices, digital effects and text-to-speech software. The resulting performances, video and audio transmissions then generated a form of interference or a fracture within the conditions of the present and the operations of standardized transmission machines and feedback loops. The interferences of the final sound work transmit new knowledge to their viewer, illuminating human entanglement with the non-human and the earth. A useful comparison here is the concept of 'profane illuminations', where ghostly signals bring hidden relations into view, as Walter Benjamin notes: 'There … are crossroads where ghostly signals flash from the traffic, and inconceivable analogies and connections between events are the order of the day' (Benjamin 1978: 183).

This emerging strategy has allowed me to consider my role as an artist as a 'diviner' who enlivens ghosts to bring into view forgotten voices and unseen or unseeable and difficult-to-comprehend technological mechanisms and networks. In this way, practices of speculative fiction have been harnessed and adapted to propose new relationships between humans and non-humans and to reveal unheard non-human voices, from technological components to mountain

gorillas. In this context, we might think of the map of the project as a spectral feedback machine that is powered by waste materials (physical and digital) and designed to intervene within the conditions of the present. As Carrie Clanton states, ghosts have the capability to disrupt linear, chronological systems of time and hence notions of history, and she draws on Fredric Jameson to highlight how ghosts can 'make the present waiver' (Clanton 2012).

These approaches have been evolved further in recent works such as *Notes from the Subsurface* (Tweed 2020), a film produced during my EarthArt fellowship at Bristol University's School of Earth and Life Sciences (2019–20). For this project I used a set of fictional tactics to foster interdisciplinary collaboration between myself and a number of scientists, producing the script for the film which looked into deep subsurface environments and the extremophile life forms that live within them. In response to the conditions of ecocide, a satirical proposal was then developed for the future of human life deep within the earth's subsurface, taking on the behaviours and functionality of extremophiles.

In the context of ecocide, I am suggesting that artists are well placed to invent new forms of experimental and subversive fiction machines as tools within their creative practice, that can help them to drive a range of experimental critical strategies for illuminating, channelling and divining hidden structures, networks and voices. As Bratton notes: 'Our shared design project will require both different relationships to machines (carbon based machines and otherwise) and a more promiscuous figurative imagination' (Bratton 2013: 283).

In summary, we need to develop speculative machines that enable artists to engage with the complexities of environmental destruction, and to help reveal and challenge the vast hyperobjects of the machinic Capitalocene that are the drivers of ecocide.

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