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AI Art as a Hyperobject-Like Portal to Global Warming

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This paper situates artificial intelligence as a vehicle that can allow human agents to engage with complex issues such as global warming. Drawing on Timothy Morton's conceptualisation of global warming as a 'hyperobject' which, by its very nature, resist knowability on a human scale, I consider the extent to which AI, when it is itself approached as hyperobject-like, can become a useful medium for engaging critically with the issue of global warming. The argument, then, is not that AI can make global warming human-knowable, but that through AI, human agents can access the quasi-unknowability of global warming. I begin by surveying Morton's theory of the hyperobject and its valence in critical discourse on contemporary/digital art, and then explore the positioning of AI as hyperobject-like. This discussion is bookended by analysis of a representative artwork, Tega Brain et al's *Asunder* (2019), which, as I argue, addresses global warming issues by incorporating AI as a hyperobject-like technology.

Keywords Artificial intelligence, digital art, hyperobjects, global warming, anthropocene

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1. Introduction

This paper situates artificial intelligence (AI) as a vehicle that can allow human agents to engage with complex issues such as global warming. Drawing on Timothy Morton's conceptualisation of global warming as a 'hyperobject' which, by its very nature, resist knowability on a human scale, I consider the extent to which AI, when it is itself approached as hyperobject-like, can become a useful medium for engaging critically with the issue of global warming. The argument at the centre of this discussion is not that AI can make global warming human-knowable, but rather that through AI, human agents can access the quasi-unknowability of global warming. I begin by surveying Morton's theory of the hyperobject and its valence in critical discourse on contemporary/digital art, and then explore the positioning of AI as hyperobject-like. This discussion is bookended by analysis of a representative artwork – *Asunder* (2019), created by Tega Brain in collaboration with Julian Oliver and Bengt Sjölén – that addresses global warming issues by incorporating AI as a hyperobject-like technology.

Specifically, I want to suggest that in *Asunder*, AI is marked by a poetics of unknowability that allows the technology to make global warming, which itself resists knowability on a human scale, more easily graspable for human audiences. Both AI technology and global warming are characterised by extreme degrees of complexity; nevertheless, AI outputs (such as AI-generated images) can manifest as relatively accessible and relatable for human audiences, even when the underlying algorithmic events are non-human-computable. In *Asunder*, it is through this twist that the complexity of global warming becomes graspable.

As a conceptual framework for this discussion of AI and global warming in relation to one another, I rely on a close engagement with the philosopher of ecology Timothy Morton's concept of the hyperobject (e.g., Morton 2010, Morton 2013, Morton 2018). Hyperobjects, as Morton defines them, are things that are so massively decentred, distributed, and complex that humans cannot perceive and experience them as discrete objects, but only as diffuse, quasi-unknowable phenomena that are virtually impossible to grasp intellectually, and the workings of which cannot be comprehensively pin-pointed in time and space. In describing hyperobjects, one of Morton's main examples is global warming, which is non-human-computable in its totality even though (or precisely because) it now completely saturates and co-determines all domains of human perception and experience. My discussion builds on the suggestion that, more and more, a similar characterisation can also be applied to AI. On this basis, I want to argue that when an artwork such as *Asunder* conjoins AI and global warming, then the former can help to frame the latter on a human-computable scale. Thus, AI, precisely because it shares in some of the confounding characteristics of hyperobjects that also describe global warming, can help in bringing a knowable shape, depth, and dimensionality to at least some aspects of global warming.

After an in initial introduction of Tega Brain et al's *Asunder*, in Section 2 of this paper I consider how (and how well) Morton's concept of the hyperobject can be mapped onto AI. In Section 3, I return to *Asunder* to discuss in more depth how it draws on AI as a hyperobject-like technology to address global warming issues.

2. Mapping Morton's Hyperobject to AI (Art)

As noted, *Asunder* (2019), created by Tega Brain in collaboration with Julian Oliver and Bengt Sjölén, incorporates AI technologies in order to critically address global warming issues. Presented as a three-channel video installation, the project shows the outputs of a purpose-built AI system, which analyses wide-ranging environmental data sources to suggest terraforming interventions designed to keep Earth inhabitable. As such, the suggestions generated by *Asunder's* AI system respond directly to the catastrophic impact human activity has on the planet. However, the AI-generated suggestions are no less extreme, and include things such as the levelling of mountain ranges, the creation of new islands, or the replacement of entire cities by newly planted forests. These suggestions are so impossible to implement that they may be taken to amount to nonsense. But *Asunder* does not frame AI as unthinking, senseless, or idiotic. Instead, the work invokes the notion of non-human (artificial) intelligence as a vehicle through which human audiences can better connect to problems that might otherwise be too complex, too alien, or simply too diffuse for them to grasp. Since *Asunder's* AI system renders images of how its suggestions would alter existing landscapes, the experience of engaging with this artwork very viscerally renders the unthinkability of global warming as graspable (although terrifying and uncanny).

Taking *Asunder* as a point of reference, this section considers the feasibility of mapping Timothy Morton's concept of the hyperobject to AI in general, and to AI art more specifically. Throughout, I will weave global warming into my discussion, both because it is *Asunderis* main focus, and because Morton uses it as an ideal example for explicating their concept.

Morton first discussed the hyperobject in the conclusion of their 2010 monograph *The Ecological Thought*, and has continued to develop it since then, most prominently in *Hyperobjects: Philosophy and Ecology after the End of the World* (2013). The concept has since then been widely embraced by theorists, for example in the philosophical domains of object-oriented ontology (OOO) and posthumanism, but also in research fields including ecology, sociology, and law, as well as by artists.

Most generally, the term hyperobject describes a thing which, due to its extreme complexity, cannot be grasped or experienced as a totality. Morton connects five core characteristics to hyperobjects: viscosity, nonlocality, temporal undulation, phasing, and interobjectivity. A frequently invoked example

that integrates all of these characteristics is that of plutonium radiation: it exists beyond human-computable time-scales (the half-life of the Pu-239 isotope is 24,100 years); it is massively distributed in our environment, to a point where it can reasonably be said that it simultaneously exists everywhere and nowhere at all; it is many-dimensional in its interactions with and impacts on the universe as a whole, without being fully human-addressable; and it manifests in ways (e.g., cancer) that point to the underlying hyperobject without ever entirely representing it. To consider the suitability of these five core characteristics for conceptualising AI as hyperobject-like, I will here offer a brief discussion of each of them in turn.

2.1 Defining the Hyperobject in Relation to Global Warming and AI Viscosity

As the first key characteristics of hyperobjects, Morton lists viscosity. By this, the author means that a hyperobject tends to spread on a massive scale, and in doing so will cling both to materials and to conceptual contexts beyond itself. A hyperobject, in other words, may end up being everywhere at once, and everything will be inextricably entangled with it without necessarily being felt to be so. As Morton writes, "The more I struggle to understand hyperobjects, the more I discover that I am stuck to them. They are all over me. They are me" (2013, 28). Accordingly, global warming expresses itself in highly localised, temporally specific ways (e.g., as a sunburn, or as an out-of-season rainstorm, or as the charred remnants of a tree following a wildfire) that saturate the world so completely that there is no longer any getting away from its symptoms, even though none of them can – individually nor collectively – represent the totality of the underlying hyperobject as such.

In a similar fashion, AI has become so pervasive in contemporary socio-cultural, technological, and political landscapes that it, too, can be understood as having a tendency to attach itself to everything it comes close to. From the perspective of a human agent situated in any networked part of the world, today we are fully surrounded by and saturated with AI, and most everyday actions and interactions enmesh us further with it. AI systems are invading all domains of human activity, from work to play, from psychology to governance. For much-discussed and well-documented examples, we need not look further than the ways in which AI channels, shapes, and directs our social media existences; the ways in which recommendation algorithms can be both based on but also determinative of our consumer behaviours (to say nothing about our political perspectives); the ways in which movement through public space is becoming more and more controlled and prescribed by AI (whether in the form of surveillance regimes, 'smart city' technologies, or self-driving vehicles); and so on. In the profusion of news reporting on how technology colonises more and more domains of human (inter-)activity, AI emerges as a runaway phenomenon not so dissimilar to Morton's viscous hyperobject.

2.1.1 Nonlocality

Nonlocality, the second characteristic in Morton's definition, is borrowed from quantum theory, and refers to the fact that hyperobjects tend towards massive distribution across time and space, to the point where the nonlocal qualities of a hyperobject's entangled existence(s) can outweigh any local manifestations. Regarding global warming, this means, for example, that even though we have developed a vast range of scientific tools and statistical protocols to observe global warming, as hyperobject global warming forever escapes the totalising gaze of the sensorium we have at our disposal, and is, indeed, "not a function of our measuring devices" (Morton 2013, 49). It also means that even though a human agent can have specific experiences in which the effects of climate change 'touch down' in highly specific ways and in a highly localised fashion, one can never quite definitely put one's finger on what it is, where it is, or when it happens in a given ecology.

The simplest way of considering AI in this context is to highlight, again, the pervasiveness and ubiquity of artificially intelligent systems in the diverse landscapes of contemporary networked societies. From the internet of things and cloud computing to interconnected big data analytics protocols spanning across different social media platforms, AI matches the characteristic of nonlocality very well, for example in the way in which it will tend to manifest, from individual agents' points of view, in what Morton calls "subjective impressions" that never represent the hyperobject as a whole. Additionally, quantum computing (especially its tentative implementations in machine learning contexts; e.g., Schuld et al 2015) and advances in ultra-highspeed data transfers (which allow for quasi-simultaneity in data access from different locations) also approximate the nonlocal qualities of quantum coherence on which Morton draws in this context.

2.1.2 Temporal Undulation

Morton's third characteristic is that of temporal undulation, a quality which forces human observers to acknowledge that hyperobjects tend to exist in ways which transcend human-computable time scales, as well as traditional assumption concerning the fixity, continuousness, and linearity of time-space. As Morton writes, hyperobjects such as global warming "are time-stretched to such a vast extent that they become almost impossible to hold in mind" (2013, 58). At the same time, they exist beyond the conception of time as a linear, unidirectional flow, in the sense that they project time in all directions: for example, the presence of carbon compounds in the atmosphere is simultaneously a result of events that occurred over the course of millions of years preceding our individual lives (e.g., the turning of organic matter into oil in the past), an effect of current events (e.g., the burning of fossil fuels), and an irreversible marker of events yet

to come (global warming effects will persist for at least the next 500 years). This does not mean that hyperobjects somehow contradict temporality or exist outside of it; they simply represent "very large finitudes" (Morton 2010, 40) so big as to become human-unthinkable.

The complexity of AI technology stands in close relation to Morton's notion of the temporal undulation of hyperobjects. For example, based on the evaluation of or extrapolation from existing data, AI systems can compute precise predictions of events that lie so far into the past or in the future that they vastly surpass the frame of human-comprehensible timescales. Additionally, the quasi-simultaneous execution of large numbers of calculations of which advanced computational systems are capable also exerts an inversion of what Morton describes as the time-stretchedness of hyperobjects: by simultaneously generating many outputs on the basis of parallel computing methods, AI systems can be said to inhabit time-space in ways that, again, confound the human experience of time.

2.1.3 Phasing

Morton's fourth characteristic, phasing, refers to the trans-dimensional qualities of hyperobjects, meaning that it is "impossible to see [a hyperobject] as a whole on a regular three-dimensional human-scale basis" (Morton 2013, 70). Hyperobjects, in other words, tend to phase in and out of the human perceptual range; even if they are within range, only isolated and limited aspects of it can be perceived by human agents – the 'full picture' remains inaccessible in a higher-dimensional realm. In relation to global warming, Morton here references examples such as the destruction caused by a hurricane or a period of drought, but likewise the feeling of raindrops on one's head. These examples represent isolated instances where the hyperobject global warming intersects with the human experiential plane.

This characteristic resonates strongly with the many-dimensionality of computational spaces within which some AI operations occur. Many aspects of AI now tend to escape the horizon of human perception and understanding. To revisit a phrase I used above, human agents can certainly experience the workings and effects of AI whenever it touches down in highly specific ways – but none of these experiences will encompass a totality of the functions AI now represents, nor the totality of its material implementations, nor the full extent of its capabilities or the implications thereof. In this sense, AI can also be argued to bear similarities to other hyperobjects such as genetic kinship, weather systems, traditional knowledge, or justice (e.g., Bruncevic 2018).

2.1.4 Interobjectivity

Lastly, Morton characterises hyperobjects as interobjective. This means that a hyperobject connects to a multiplicity of other objects and concepts, and will also connect these to one another, to a point where its existence and significance may reveal itself most powerfully in and through these entanglements. The interobjectivity of the hyperobject global warming is thus expressed in a multi-dimensional system with a myriad elements, including, for example, crops that are (or are not) growing in a very specific locality due to raindrops that are falling in one location (rather than in another) in response to weather systems that are themselves responding to global shifts in ocean currents. On many levels, this conceptualisation also gives rise to rethinking notions such as causality or objecthood across and beyond systems of thought that have arranged themselves around the presumed centrality of human agency.

The characteristic of interobjectivity somewhat integrates the already-mentioned aspects of hyperobjects. In relation to this, about AI it can now be said that its operations and instantiations are so massively enmeshed with diverse technologies, places, functions, and purposes, and its actions ripple so pervasively through the world as human agents experience it, that the shared space in and through which human-perceptible meaning flows has come to include many non-human elements. These entanglements include computer chips, circuit boards, sensors, data transfer infrastructure, all kinds of input and output devices, as well as the vast range of informational artefacts that form the algorithmic underpinnings and the outputs of AI systems. In AI contexts, ongoing philosophical questions about non-human sentience, new kinds of machine personhood, computational creativity, and, most fundamentally, the nature of intelligence as such, also figure into this characteristic.

Overall, this brief survey suggests that AI, understood in the totality of its development trajectories, application areas, underlying concepts, rendered experiences, and computational as well as material instantiations, does, indeed, behave somewhat like a Mortonian hyperobject. This is especially true if one takes into account (as AI art generally does) the public imaginaries informing the ways in which AI figures across the cultural, socio-political, technical, commercial, and regulatory landscapes that it also shapes so powerfully.

2.2 Hyperobject-like AI

From the foregoing discussion, it should be clear that a correlation between AI and Morton's concept of the hyperobject will hold up best with certain – but not all – definitions of artificial intelligence. A very wide range of definitions of AI are now circulating in and beyond domains such as computer science, philosophy, law, media theory, and software studies. Depending on context, these definitions cover a spectrum from the highly specific (e.g., precise technical description of AI systems

in terms of underlying algorithmic functions, machine learning models, and data processing protocols) to the highly inclusive (e.g., definitions of AI that draw on philosophical perspectives on cognition, perception, or intentionality). Across this spectrum, it is generally accepted that definitions of AI are context-dependent, dynamic, and subject to frequent shifts and updates, and that there is no coverall definition that can meaningfully apply to all existing and emerging contexts.

Since the present discussion focuses on the expansiveness of AI both as concept and as implemented technology, an inclusive approach is here most useful. Elsewhere, I have defined AI as "any assemblage of technologies, operations, functions, and effects that can be meaningfully perceived as resulting from intelligent (including creative) behavior, or which can be identified in outputs that are the results of such behavior" (Zeilinger 2021a, 38). This definition conveys an open-endedness and inclusivity that may by some be perceived as a shortcoming. I would argue, conversely, that these features help to emphasise both the complexity inherent in discrete AI systems, as well as the emergent diffuseness of the concept of AI in the cultural landscape more generally.

In this view, the complexity and diffuseness of AI derive from interactions between as well as the stacking-up of separate technical elements, ontological planes, and conceptual vectors. In other words, AI here refers both to processes and to outputs that may be impossible to grasp in their totality even when individual elements (e.g., discrete algorithms or computational routines) are relatively straightforward. The complexity of AI thus emerges in a cascading and snowballing fashion from manifold interactions between conceptual and technical constituent elements. For example, it is relatively simple to graps the logic by which a GAN system generates ostensibly 'new' and 'original' outputs based on its access to a dataset of appropriate templates; the same is not true, however, for the many-dimensionality of data compression and data evaluation that occurs in Generative Adversarial Network (GAN) latent space.

There are, certainly, some aspects and characteristics of hyperobjects that do not map perfectly onto AI. For example, as a technology that relies for its functioning on resources whose stability and availability is subject to disruption (i.e., electricity, computer hardware, infrastructure, human operators), AI does not currently correspond well to Morton's description of hyperobjects as the "longest-lasting objects" known to humankind (Morton 2013, 85). However, given the alignments between AI and the characteristics of hyperobjects that I have outlined, in a discussion concerning issues and phenomena that are so vast, of such complexity, and so massively distributed that they generally confound human-knowability, it is nevertheless worth asking what becomes possible when we AI is conceived as hyperobject-like. Several possible answers to this question readily suggest themselves – for example with regard to issues of AI (un-)explainability and AI (un-)knowability.

A common source of criticism levelled against emerging AI technologies

focuses on the lack of explainability that often characterises AI operations. The term generally refers to the ability of a computational system to "provide an explanation for a decision it has made" (Berry 2021, 222). Such an explanation, it goes without saying, must be human-computable, i.e., it must make sense to a human observer/interpreter of the operations and outputs of an AI system. Arya et al (2019), accordingly, count among the "stakeholders" in requests for AI expainability "citizens, government regulators, domain experts, or system developers." Without a doubt, requirements for the implementation of explainability methods aimed at human audiences serve important roles in contexts where unexplainability could be an undesirable bug (such as biased decision-making based on problematic datasets or data-labelling practices) or a potentially malicious feature (such as in data-driven surveillance practices and obfuscatory blackboxing of AI functionality). However, requirements for human-explainable AI may fail to account for the fact that to some degree, AI's ability to compute and signify also arises precisely from the fact that it is not human. An approach that regards AI as hyperobject-like can therefore accommodate unexplainability in some contexts, and it then becomes possible to reconsider, beyond the anthropocentric notion of algorithmic accountability, the question of what is at stake when something is (or is not) explainable.

Is an explanation automatically a solution to a problem? With regard to global warming, it can be argued that efforts at fine-grained explanation can serve to distract from the overall gravity of this ongoing, all-encompassing event. The problem of atmospheric carbon dioxide, for example, is a vast yet easy to grasp aspect of global warming more generally. As such, it frequently serves as a placeholder for the underlying hyperobject, with the result that attention shifts from the bigger (potentially unthinkable) issue to graspable pseudo-solutions, such as carbon credit systems or schemes that allow travellers to offset the carbon footprint of their air travel by paying for the planting of trees. (We should note that in this example, the 'solutions' offered also shift the underlying issue from the domain of planetary-scale ecology to that of capitalist economy.) In the process, the hyperobject global warming loses depth, nuance, and urgency, even if aspects of it now appear to have been shifted to a human-computable dimensionality. In a similar way, strictly enforced human-explainability of AI can vastly diminish the potential of the technology. For example, advanced AI systems may now be able to develop proofs for mathematical problems that remain unsolvable for human mathematicians. But, at the intersection of mathematics and philosophy, there is considerable controversy about whether such proofs are acceptable to the research community (e.g., Tymoczko 1979, du Sautoy 2019). This is because the proofs offered by AI systems may well be of such complexity that they are beyond the capacity of human agents to check and verify them. The somewhat odd question this raises is whether a mathematical theorem that is AI-based and non-hu-

man-explainable can be considered 'real,' even when it is widely considered as correct within specialist communities.

The notion of unknowability can open itself up to similar recalibrations when AI is considered as hyperobject-like. In relation to AI, unknowability is invoked, for example, in discussions that concern speculations about a becoming-sentient, becoming-creative, or becoming-autonomous of AI (Zeilinger 2021a, 68f.). Both science fiction and AI research is full of debates about such a forking-off of AI from its human origins. Ray Kurzweil (2005), in a typically anthropocentric mode, has famously described this as the "singularity," i.e., the moment when technological advances enter a runaway mode, and ultimately becoming unknowable, with unpredictable consequences for humanity. But the term also figures in less dramatic visions for AI. For example, Bringsjord et al (2001), writing about the possibility of non-human creativity, suggest that an element of unknowability is a key requirement if we were ever to recognise AI as truly creative. Oliver Bown has similarly suggested that AI systems may, at some point, no longer function "in particularly human-like ways" (2015, 18).

Morton describes such developments as the "future future" of objects, in which they have entered a "radical unknowability" (e.g., 2013, 67). To accept global warming as hyperobject means that its quality of unknowability cannot be denied. In fact, in many ways it is precisely this unknowability that determines everything we can know about global warming. I would argue that something similar can apply to AI in the contemporary cultural landscape: when AI art projects suggest that computational systems are 'hallucinating,' 'dreaming,' or 'fantasising,' often this is done precisely in order to invoke the unknowable and uncanny, and to apply it to the complex computational systems responsible for producing the artistic outputs under consideration. I have elsewhere (Zeilinger 2021a, 2021b) commented very critically on AI art that operates in this mode. But, against the background of my foregoing discussion, I would concede that a poetics of unknowability conveyed through AI helps to make graspable the hyperobject global warming. Here, to deny AI unknowability would mean to drastically diminish the audience's ability to appreciate the immensity of the hyperobject global warming with which the artwork interfaces.

3. Asunder as a Hyperobject-Like Portal to Global Warming

Over the course of roughly the past decade, Morton's concept of the hyperobject has been embraced not only by researchers and theorists, but also by artists. Thanks to popular proponents such as the curator Hans Ulrich Obrist (see Obrist and Morton 2014), but also in the wake of exhibition projects such as 'Hyperobjects' (2018) at Marfa Ballroom, Morton's philosophical writing and conceptual framework are embraced by artists who invoke the idea of the hyperobject as a modality for creative expression, as a subject of their artmaking,

or as an interpretive framework (e.g., Morton et al. 2018; Morton 2021; see also Part 2 of Bruncevic 2018).

Tega Brain created *Asunder* in collaboration with Julian Oliver and Bengt Sjölén as a commission for the Museum for Applied Arts (MAK) in Vienna, Austria. Premiered as part of the Biennale for Change, the three-channel video installation has been exhibited extensively since then. It presents itself as an AI-driven "environmental manager" that generates recommendations for terraforming interventions on the basis of its evaluation of a wide range of "satellite, climate, topography, geology, biodiversity, population and social media data" (Debatty 2019) gathered in real time. As noted above, many of these recommendations appear surreal or absurd, and many of them are impossible to implement. The system might recommend, for example, to relocate entire cities and replace them with newly planted forests; to redraw coastal lines in aid of flood prevention; or to relocate rare earth mines to high tech factory hubs. In exhibition settings, these recommendations are then rendered visually as AI-generated aerial views of the altered regions.

Because of the magnitude of the suggested changes and the impossibility of implementing them by human means, it can be tempting to consider the AI recommendations as nonsensical. Indeed, it is easy to rationalise the absurdity/impossibility of the AI suggestions by foregrounding AI's non-human-ness as an insurmountable obstacle that prevents the system from recommending meaningful changes. But what is inevitably lost in such a rationalisation is an appreciation of the seemingly beyond-human enormity of the changes that are in fact now required to counteract global warming. In other words, to interpret the artwork's AI system as incompetent or nonsensical from a human, anthropocentric perspective obstructs one's view of the vast, almost unthinkable scale on which human activity now impacts the planet.

At a 2020 Ars Electronica discussion panel specifically devoted to the topic of AI and ecology, Brain suggested that the use of AI systems in artworks dealing with climate change can represent an opportunity for learning to acknowledge non-human agencies with which we co-exist in the ecosystem that we are trying to understand and control, and which we are now trying to keep survivable (Ars Electronica 2020). Put differently: using AI and paying attention to its functioning and limitations can be a way of addressing humanity's involvement in and with the hyperobject of global warming, which may work best if AI itself is situated as hyperobject-like.

In an essay published a year before the release of *Asunder*, Tega Brain elaborated ideas that help clarify the conceptualisation of the project. Invoking the thinking of Katherine Hayles and Jennifer Gabrys, in this text Brain reminds us that computational models are not just ways of analysing, interpreting, and representing data, but also have a "powerful world-making capacity" (Brain 2018, 153). As such, they are capable of much more than merely expediting the

kinds of calculations that end up perpetuating and amplifying anthropocentric knowledge systems. If that were the case, then AI-driven solutions modelled on simplifying, anthropocentric systems thinking, when applied to ecology, may achieve little more than what Donna Haraway has called an "informatics of domination" (cit. in Brain 154). Yet, as the title of Brain's essay notes, "the environment is not a system," and systems thinking may be missing the point when it comes to using AI to explore the realities of and solutions to ecological crises (see Walsh et al 2020 for an approach that may be straddling this line).

As in my example of atmospheric carbon dioxide, where pseudo-solutions such as the carbon credit system flatten the severity of the underlying issue, so the 'smartness' of AI that applies reductive systems thinking to ecology produces "a kind of myopia" (Brain 159). It is then impossible to account for the co-determinative qualities of extremely complex symptoms, causes, and effects of global warming, for the complexity of the "species entanglements" (153) that characterise life under global warming, or also for any insights that could be derived from acknowledging the connections (rather than separation) of humans and environment. What is ignored, in other words, in an anthropocentric, system-oriented AI-driven informatics of domination is the many-dimensionality of global warming, or, to put it with Morton, the hyperobject global warming as such.

The way in which *Asunder* incorporates AI resists such simplification and anthropocentric rationalisation. Through the deceptively simple visuals of impossible terraforming interventions, the work reminds us that the most sophisticated calculations may be worthless when they are conducted in an un-thinking fashion, but also that there are paradigms of the thinkable that go beyond the human-comprehensible. When AI is considered as hyperobject-like, the experience of *Asunder* changes: now, the proposed solutions of the artwork's AI system appear no longer as absurd or nonsensical, but begin to resonate with the unthinkable immensity of the global warming issues addressed in the project.

Asunder makes no attempt to explain global warming, nor to pull it into a realm of knowability or offer viable solutions. Instead, it foregrounds AI outputs that emphasise the technology's hyperobject-like qualities. As I've suggested, this is done not in order to mystify AI, but, rather, so that audience members can more easily grasp, through the quasi-unexplainability of complex AI 'solutions' that are impossible to implement, the hyperobject global warming itself. A question to end on is which other contexts could benefit of a reframing of AI as hyperobject-like, so that AI may open up new and different ways of thinking with and through other hyperobject-like scenarios. Specifically, what Tega Brain and her collaborators have achieved in *Asunder* with regard to global warming could perhaps also open new directions in richly debated areas of AI discourse regarding non-human legal personhood, or questions regarding AI creativity.

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