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Global Catastrophe

The end of the world, Shakespeare's *Lear* tells us, will come when a vengeful nature overwhelms all that is known:

Blow, winds, and crack your cheeks! Rage, blow!
 You cataracts and hurricanoes, spout
 Till you have drench'd our steeples, drowned the cocks!
 You sulphurous and thought-executing fires,
 Vaunt-couriers to oak-cleaving thunderbolts,
 Singe my white head! And thou, all-shaking thunder,
 Strike flat the thick rotundity o' the world,
 Crack Nature's moulds, all germens spill at once
 That make ingrateful man! (3.2.1–9)

At this moment in the play, *Lear* has descended into madness following the catastrophic collapse of both family and kingdom. The bonds of blood and the principle of sovereign authority have been betrayed, and as a result civilization as he understands it has fallen into disarray. 'Blow, winds, and crack your cheeks' is his desperate apostrophe to an enraged nature that is unmoved by the plight of a humanity that struggles with its place in the world, and *Lear* addresses the unruly storm that engulfs him not to seek deliverance or absolution, but to yield to a greater authority. This is a revelatory experience, but not a redemptive one, and the awareness that *Lear* ultimately attains is of the world as a place of unthinkable horror and chaos that surpasses even the sovereign's mighty power.

Often read as a play in which insight and insanity coalesce, *King Lear* is also notable because it refuses to separate environment from culture. 'Read with an eye to contemporary climatology', Todd Borlik writes, '*King Lear* depicts microcosm and macrocosm as mutually fashioning each other'.¹ The notion of humanity's possession of the world, and therefore of its ability to resist and control a nature that is external to it, is denied by *Lear*'s characterization of a wrathful and obdurate force that will devastate human life. Being alive is a contingent

condition, and it depends on forces that will not be reasoned with and cannot be overcome by a heroic determination to survive. If the deluge and ‘all-shaking thunder’ of the wilderness for Lear threaten life, then this threat exists because there is no opportunity for life to extract itself from the nature with which it is intimately connected. In A.C. Bradley’s influential reading of *King Lear*, this play reveals such a bond by emphasizing the perceptual acts through which Lear makes sense of the onslaught that surrounds him. The storm scenes, he writes, are ‘the explosions of Lear’s passion, and the bursts of rain and thunder, are not, what for the senses they must be, two things, but manifestations of one thing. It is the powers of the tormented soul that we hear and see in the “groans of roaring wind and rain” and the “sheets of fire”’.² The magnitude of nature’s turbulent forces are overwhelmingly affective for Lear, but they can only be conveyed in the mode of a relation, as forces made comprehensible by cognitive acts that constantly move between different manifestations of these forces, not in terms of what they are but in terms of how they are experienced and perceived. Indeed, this passage emphasizes the failure of knowledge to stand outside of nature and understand it fully. Singeing Lear’s head and executing his thoughts, this storm – this ‘tempest in my mind’ (3.4.13) – is catastrophic because it devastates life, but also because it reveals the world to be unthinkable for the humanity that claims both knowledge and possession of it.

Bradley’s reading of *King Lear* suggests that Shakespeare anticipates a phenomenological treatment of nature as a force that intrudes on and is encoded by consciousness, and yet cannot be captured by either thought or language. More recently, Robert Markely situates this sense of a disjunctive coalescence of nature and culture in ‘a broadly Latourian understanding of the natural world’ where “Ecology” and “culture” ultimately are never distinct entities.³ For such a conception of nature, ‘climate and culture are mutually constitutive entities’, and Markley finds evidence of the hazards attached to this co-emergence and co-dependence in Lear’s encounter with hurricanes, thunderbolts and downpours:

Lear is not wandering through a metaphoric storm that marks his poetic madness and signals the disruption of the natural order; he is an all-too recognizable figure who registers the complex connections between climatic instability and its potential consequences: the loss of agricultural harvests and the fracturing of ideologies of national unity, patriarchal authority, and socioeconomic stability.⁴

What this play points to, then, is a precarious condition of being with that conjoins nature and humanity, rather than a perceptual encounter with nature

manifesting its sublimely malevolent character. It suggests an ecology that is assembled of interoperating parts.

As well as bearing witness to forces that overpower humanity and obliterate its delusions of world mastery, Lear's cry reveals that this is an ecological disaster that devastates everything. This is the end of the world because the world as an ecology, as Lear understands it, has become systemically unsustainable. Human culture and civilization – 'ingrateful man' – turn against themselves in this play, but this self-destructive impulse becomes magnified by a storm that turns against all life and 'cracks Nature's moulds.' Indeed, this event is so devastating that the idea of world as a planetary space with fixed and determinable dimensions – the world conceived from *Timaeus* to the Blue Marble as spherical and uniform – collapses. 'Strike flat the thick rotundity o' th' world' signals forces that are of such a magnitude that they spark a cosmological shift: no longer conceivable as a global body, the world takes on a different geometric character, and it is for this reason that Lear struggles to comprehend the world as a shifting ground. What follows this frenzied self-annihilation – whatever the world might be after the storm shatters and crushes the world – would not be recognizable according to the concepts of planetary home that had previously held for Lear. This storm is a cataclysmic event that drowns, incinerates, poisons and electrocutes, and this scene generates 'a counter-image of Nature that successfully resists human attempts to construct survivable narratives.'⁵ However, this is not simply a case of the world or 'Nature' continuing after humanity has been successfully eradicated. The foundations for the renewal of Lear's world – the seeds ('germens') from which new life would come – are themselves sacrificed. If Nature or the flat world live on after this apocalypse then they would be devoid of the life that Lear knows. The world that follows such an apocalypse would not, this play tells us, be animated in a way that is recognizable to us. This place is, instead, unimaginable.

King Lear contrasts with how Shakespeare elsewhere figures the geometric regularity of the world. Certainly, it confounds Puck's aspiration in *A Midsummer Night's Dream* to 'put a girdle round about the earth' (2.1.175). The notion of a spherical world that can be encircled by modern travel in *King Lear* becomes an unattainable fantasy: this fantasy must fail because it impertinently construes the world as a finitude that can be encompassed by humanity's sovereign authority. This play also offers an antecedent disclaimer to more recent conceptions of the world as an entity that is being united by new tools and instruments. As the last chapter has shown, contrasting accounts have been offered about precisely which technological devices will bring the world together. What *King Lear* suggests,

however, is that attending to the world's global completion either by computers or by satellites neglects the possibility of the world's annihilation by forces that intrude upon humanity but cannot be managed either by humanity or by the tools that it deploys. Put otherwise, it denies that technicity can successfully subdue the world.

II

Disclosing forces that are both beyond control and exceed comprehension, the storm of Shakespeare's play anticipates a trajectory in recent criticism that seeks to situate climatic catastrophe in a non-anthropocentric conception of the world. As noted above, for Markley *King Lear* aligns with 'a broadly Latourian understanding of the natural world' in which climate and culture are reciprocally constitutive in a disjunctive series of relations that will not produce or yield to a global perspective. Latour proposes a return to 'Gaia' as the name for these relations, although his restoration of this concept involves a reworking of how it has previously figured in thinking about world and climate change. According to mythological narratives, Latour notes, Gaia is a tumultuous and threatening character figure. 'Gaia, Ge, Earth, is not a goddess properly speaking, but a force from a time before the gods,'⁶ he writes in *Facing Gaia: Eight Lectures on the New Climatic Regime*. In *Theogony*, Hesiod's poem on the birth of the gods, she is the first being to exist and the origin of life. And yet, she is neither maternal nor the basis for harmonious relations between the gods or between the world and the divine realm. 'Prolific, dangerous, savvy', for Latour, 'the ancient Gaia emerges in great outpourings of blood, steam, and terror, in the company of Chaos and Eros.'⁷ This foundational narrative of Gaia's character is important because it points to qualities that differ from those that are typically attributed to her in the late twentieth century. Rather than divinely nurturing and protective, she 'plays the role of a terrifying power and an astute advisor.'⁸ Not beneficently tender, she is instead 'a chthonic power' and 'a figure of violence, genesis, and trickery, a figure that is always antecedent and contradictory.'⁹

In the contemporary period, Gaia's role has been established by a tradition of ecological criticism which, taking its inspiration from James Lovelock, describes the earth as a vital organism that cares for us and needs our care. Here, Gaia is conceived as 'a single, unique, coordinating agent',¹⁰ and Latour mentions that Lovelock fuelled this tradition in his description of Gaia as a 'planetary life system' that functions as a balanced equilibrium. Such a description, for Latour, attaches the wrong designations to Gaia: "System", "homeostasis", "regulation", "favorable levels", these are all quite treacherous terms.¹¹ While Lovelock does indeed assign

these qualities to Gaia, elsewhere he is careful to avoid the pitfalls of treating the earth as a totality or possessing agency, and for Latour it is with Lovelock's caution around these notions that we can begin to understand our catastrophic relationship with the earth. Gaia is not reducible to the category of embodied or organic existence: 'We cannot apply to it any technological or religious model. It may have an order, but it has no hierarchy; it is not ordered by levels and it is not disordered either.'¹² Gaia instead needs to be understood as 'the name of the process by which variable and contingent occurrences have made later events more probable.'¹³ Variable and contingent, this name indicates a terrifying rupture in our sense of place in the world. Gaia gives itself to perception as a force that cannot be encompassed within the spherical conceptualization of a planet that contains and protects both itself and its inhabitants. No longer confident in our place in the world – we have dispensed with our conceited presupposition that the world awaits our sovereign regard – we are now conscious of a potency that obliges us to recognize the effects of our actions in the world:

What is coming, Gaia, has to *appear* as a threat, because this is the only way to make us sensitive to mortality, finitude, 'existential negation' – to the simple fact of being of this Earth. This is the only way to make us conscious, tragically conscious, of the New Climate Regime. Only tragedy can allow us to measure up to this event.¹⁴

The threatening appearance of, and inescapable collision with, this figure therefore demands a tragic materialism in which we are grounded in an earthly space that requires more from us.

For Isabelle Stengers too, 'Gaia' is the name for forces that are not subject to willed governance by humanity; indeed, once unleashed, these forces will not be pacified by a humanity that holds tenaciously (though ineffectually) to its sense of primacy in the world. That these forces will be unleashed is not a matter of speculation for Stengers, and in *In Catastrophic Times: Resisting the Coming Barbarism* she describes an imminent disaster that is increasingly regarded as inescapable and irreversible. 'Over the last few years,' she writes, 'one has had to cede to the evidence: what was lived as a rather abstract possibility, the global climatic disorder, has well and truly begun ... the most pessimistic of predictions produced by the simulations become increasingly probable.'¹⁵ This coming disorder for Stengers will result from how we have come to situate ourselves in relation to forces that were once viewed as greater than humanity. Whereas the earth and its climate were once honoured by its human inhabitants, and whereas in the past there has been a perception that humanity should not abuse the

tolerance that has been granted to it, such a deferral to and fear of greater forces no longer hold. The violence that we now bring systematically to bear on the world means that 'a margin of tolerance has been well and truly exceeded';¹⁶ and our newfound ability to regard the planet from orbit is, in part, where evidence of the coming disorder is to be found. Our abuse of the climate is resulting in a world that no longer tolerates us: 'This is what the models are saying more and more precisely, that is what the satellites are observing.'¹⁷

Orbit is therefore producing an undeniable image of what is happening to the world. How we are living on the planet – how we are abusing the climate and consuming the earth's resources – is, we now see, inherently destructive. Despite coming to this awareness, we refuse to think in fundamental terms about how we relate to the planet and, rejecting the imperative to cultivate an alternative ontology that displaces humanity's primacy in the world, we persistently refuse to change our assumptions about our being in the world. This refusal will mean that the current generation will become reviled as the terminal consequences of our intolerable actions are finally grasped. 'I belong to a generation that will perhaps be the most hated in human memory', she writes, 'the generation that "knew" but did nothing or did too little (changing our light bulbs, sorting our rubbish, riding bicycles ...). But it is also a generation that will avoid the worst – we will already be dead.'¹⁸

We will become hated by our own species because of our collective inaction in the face of certain devastation, but Stengers' concern is neither to exculpate our generation from the causes for this devastation nor to promote a praxis that would allow us to avert it. Her concern, instead, is with how we might understand differently the forces that have been set in motion as a result of our species' brutal treatment of the place that previously tolerated us. This place is not a home from which we have become estranged, and with which we should seek to re-establish a connection. We cannot forge a harmonious belonging with an ecology that contains humanity because this would presuppose that we both belong (i.e. are rightfully situated in a world that is proper to itself) and have the power to negotiate our place in this system. Gaia, as it has been conceived following Lovelock's resurrection of this figure, possesses such a character: it is an entity that functions systemically, with the potential for humanity to correct the imbalances that it produces. This is Gaia as a 'good, nurturing mother' whose 'health'¹⁹ needs to be safeguarded. Against the scientific identification and enumeration of the elements of the world ('living things, oceans, the atmosphere, climate, more or less fertile soils') in an inventory of atomized entities and processes, 'Gaia' has become the name for a vital ecology that has developed through the co-evolution of 'entangled' entities and processes.²⁰

Such a conception of Gaia, as a sustaining environment that needs to be protected, no longer holds because it remains attached to the idea that this system can be stabilized. In Stengers' non-naturalistic and non-anthropocentric materialism, 'Gaia' is the name for an assemblage that 'intrudes' and is unmoved by the fate of species that are threatened by this intrusion. We are now forced to confront the climate's responses to our actions – this is Gaia's intrusion – but we mistakenly assume that humanity has the right or power to remedy its aggressive history or is able homeostatically to restore an equilibrium that would ensure its survival. Although our conduct provokes Gaia to react, it is not because this assemblage is endangered: 'It is precisely because she is not threatened that she makes epic versions of human history, in which Man, standing up on his hind legs and learning to decipher the laws of nature, understands that he is the master of his own fate, free of any transcendence, look rather old'.²¹ Stengers' conception of Gaia therefore displaces humanity as a species that possesses a Promethean ability to influence and control the forces of the world.

In Catastrophic Times does not simply challenge 'epic versions of human history'. Just as significant for Stengers is the need to recognize that Gaia denies containment by thought. This assemblage cannot be conceptualized as a knowable environment that yields to thinking, although for her it does demand to be named and for *In Catastrophic Times* it is this demand that provokes us into recognizing that we are subject to forces that we can neither control nor comprehend. Stengers proposes that '*To name is not to say what is true but to confer on what is named the power to make us feel and think in the mode that the name calls for*'.²² 'Gaia' orients thought towards something that arrives irrepressibly as a transcendence that imposes itself upon experience and consciousness, even though content or character cannot be attributed to this eruption in knowledge. 'The intrusion of this type of transcendence, which I am calling Gaia, makes a major unknown, *which is here to stay*, exist at the heart of our lives',²³ Stengers writes. This entity cannot be known, then, but it cannot be ignored as a force that not only responds to human action, but is also indifferent to whether humanity should survive the coming changes.

III

Evidence that such an intrusive unknown can no longer be ignored is provided by the many cultural texts that seek to make sense of climate change and the ecological crisis that now imposes itself on mainstream thinking. Documenting

the intensification of this tradition, Déborah Danowski and Eduardo Viveiros de Castro point to 'a growing proliferation of new and old variations on a theme that we shall call ... "the end of the world"'.²⁴ Across multiple sites of cultural production, this catastrophist tradition confirms the sense of severity that is now attached to the generalized perception of an approaching crisis. The end of the world, they point out, has come to preoccupy

blockbusters of the fantasy genre, History Channel docufictions, scientific popularization books of varying complexity, videogames, art and music pieces, blogs of all shades across the ideological spectrum, academic journals and specialized networks, reports and pronouncements issued by world organizations of all kinds, unerringly frustrating global climate conferences ... theology symposia and papal pronouncements, philosophical tracts, New Age and neo-pagan ceremonies, an exponentially rising number of political manifestoes – in short, texts, contexts, vehicles, speakers, and audiences of all kinds.²⁵

Before and after Latour, at least from *King Lear* until the contemporary proliferation and intensification of disaster narratives, the end of the world is seen to provoke the realization that humanity's extinction is not the end of all things, but that a world will persist despite our species' ruinous actions. Succeeding the Anthropocene, the entity that the term 'world' anxiously seeks to capture will live on, even if its scarred surface bears witness to the reach of human violence or its buried sedimentary layers provide a record of humanity's entrenched cruelty. The designation 'world' cannot be attached to this space because such a name refers to a territory that is made comprehensible by its human inhabitants. The world after humanity is not imaginable as a stable terrestrial uniformity because the eye that produces spherological perception will no longer be fixing its gaze on the world from above or as though from above. The coming crisis provides an intimation of this unimaginable futurity: the discovery that the climate will not bend to our will reveals also that there is something unknown at the centre of our experience and perception of the world. Indeed, the fact that contemporary disaster narratives speculate in discrepant ways about the cause and effect of the coming catastrophe reveals both a shared conviction that such an event will occur and the anxious recognition that we are unable to grasp the form that this event will take.

For Latour and Stengers, it is what humanity is doing on the earth and to the earth that is resulting in Gaia's fatal intrusion, and the emerging canon of contemporary apocalyptic literary and filmic texts similarly situates the coming catastrophe as something that will happen on the ground: *28 Days Later*, *Oryx*

and *Crake*, *The Day After Tomorrow*, *The Flood*, *28 Weeks Later*, *The Road*, *World War Z*, *Station Eleven*, *Mad Max: Fury Road*. In these texts, the end of the world takes the form of an extinction or near-extinction event that is usually attributed to global movements or exchanges and has devastated our capacity to experience the world as a globalized whole. According to Danowski and Viveiros de Castro:

Such a demographic and civilizational disaster is sometimes imagined as the result of a 'global' event, a sudden extinction of all human or terrestrial life resulting from either an 'act of God' (a lethal supervirus, a massive volcanic explosion, a collision with a celestial body, a giant solar storm), the cumulative effect of anthropic interventions on the Earth System ... or finally a good old-style nuclear war. On other occasions, the disaster tends to be ... depicted ... as a process, a deterioration of the conditions that presided over human life during the Holocene, in which droughts follow hurricanes and floods, human and animal pandemics follow colossal crop losses, and genocidal wars take place against the background of extinctions that affect whole genera, families, and even phyla.²⁶

The world ends either because there is no-one left to perceive it or because those who survive forge atomized communities and are unable to connect with others across planetary space. However, focused as it is on contagion, the climate or war, this proliferating tradition neglects what should be essential to any assessment of the deformation and destruction of the world, namely the risks that are associated with the orbital extension of the planet. Danowski and Viveiros de Castro acknowledge that extinction might result from an event that occurs beyond the atmosphere of the planet ('a collision with a celestial body, a giant solar storm'), but their focus remains firmly on earthbound disasters and does not include the consequences of humanity's departure from the planetary ground. 'Intensifying changes in the terrestrial macro-environment' are what contemporary cultural texts register when they imagine a coming ecocatastrophe.

Latour's *Facing Gaia* offers a justification for such a focus on the terrestrial ground. He insists that we need to position ourselves as 'Earthbound' rather than aspiring to become part of a whole that is universal space. Latour again looks to Lovelock when formulating this injunction. While working at NASA, Lovelock contributed to early planning about how life on Mars might be detected. In contrast with engineers who were focused on technical questions about travelling to Mars, Lovelock advised that such an objective would be better served by staying on earth. His report, published in *Nature* in 1965, states that 'it is possible, by accepting a limited phenomenological definition of life, to design simple experiments from the general recognition of life phenomena, including that with which we are familiar'.²⁷ All that is needed,

Lovelock proposes, is an instrument on the Earth that can detect whether the Martian atmosphere is in a state of equilibrium. Latour compares this proposal with Galileo's description of the earth as part of an elaborate, non-geocentric, astrophysical system. Observing shadows on the lunar surface, Galileo deduces that the moon is of the same order as the earth. Both are components of the same system, are made of the same matter and are subject to the same physical laws. This observation triggered a monumental cosmological shift: 'Undifferentiated space could henceforth be extended everywhere', Latour writes:

The Earth was no longer relegated to the lower depths of a sublunary world surrounded by circles of dignity each more elevated than the one before, from the supralunary planet to the spheres of the fixed stars, distant only by a few degrees from God himself. The Earth henceforth had the same importance as all the other celestial bodies, without any hierarchy among them; as for God, he could be encountered anywhere in the vast immensities of the world.²⁸

Unlike Galileo's telescope, which produced the perception of cosmological uniformity, the instrument that Lovelock imagines would project a sense of differentiated space. Detecting atmospheric equilibrium on Mars would allow us to see that it has a different planetary character to the Earth, which exists in a state of atmospheric disequilibrium and therefore requires the presence of a force that keeps it alive. In this moment, for Latour, Lovelock '*diminished* the similarity between the Earth and all the other bodies.'²⁹ This thought experiment provokes in us the recognition that our planetary home is shaped and sustained by a ground or materiality that is greater than the planet itself and which is beyond our apprehension. If we are to understand the relationship between being and this ground then our starting point should not be to look beyond the earth, or to seek to leave it in order to situate ourselves as part of a sublimely universal order. For Latour, we need to begin by recognizing the primacy of the earth and our place in it:

Lovelock brought his reader down to what should be viewed once again as a *sublunary world*. Not that the Earth lacked perfection, quite the contrary; not that it hid the sombre site of Hell in its entrails but because it held – alone? – the privilege of being in disequilibrium, which also meant that it possessed a certain way of being *corruptible* – or ... of being, in one form or another, *animated*.³⁰

Latour appeals for a criticism that shifts its centre of gravity by returning to the planet, not in a pre-Galilean or pre-Copernican positioning of the earth at the centre of cosmotheological order, but in an earthbound understanding of what dwelling means in relation to place. Essential to this criticism is a refutation of the notion that looking from orbit allows us to see the world:

The highly celebrated 'blue planet' has poisoned thought in a lasting way. It is a composite image that blends the ancient cosmology of the Greek gods, the old medieval form given to the Christian God, and NASA's complex network for data acquisition, before being projected within the diffracted panorama of the media. What is certain is that the inhabitants of Gaia are not those who view the blue planet as a Globe.³¹

Perhaps implicit in this reorientation of the world towards a sublunary attention to grounded being is a criticism of the decision to reproduce the Blue Marble image on the cover of Lovelock's 1979 *Gaia: A New Look at Life on Earth*.³² Regardless of whether such a criticism is directed specifically at Lovelock's use of this image, for Latour the ecological and environmental thinking that emerges with the 'Blue Marble' photo is shaped by a confusion of non-terrestriality with transcendence:

We could always spend huge budgets on what used to be called the 'conquest of space', but we would succeed at best only in transporting a half-dozen encapsulated astronauts across inconceivable distances, from a living planet toward some dead ones. The place of the action is here below and right now. Dream no longer, mortals! You won't escape into space. You have no dwelling place but this one, this narrow planet. You can compare the celestial bodies to one another, but not by going to see for yourselves. For you, Earth is the place, what is called in Greek a *hapax*, a name that appears only once, and this name pertains to the members of your species, the Earthbound.³³

If Danowski and Viveiros point to stories in which celestial collisions and astronomical climate change are the cause of human and planetary extinction, then the scant attention that they give to these stories makes sense in the context of Latour's remarks, as does their claim that we need to attend to changes in the macro-environment. This extended place, for them as for Latour, does not reach beyond the atmosphere into the celestial, astral or even orbital domain. It is, rather, the planetary ground that both allows us to exist and threatens our species life. In this modelling of earth and the unruly forces that shape it, narratives of our potential demise are instructive because they provoke us into looking again at how we walk on the earth.

IV

Heidegger, as Chapter 1 has noted, considers the first images of the earth from orbit and early transatlantic satellite transmissions to be the disastrous elevation of a technicity that displaces the creative act of world-forming. This ability to move beyond earth's atmosphere is built on both the destruction of nature

(‘launch pads are being built and the countryside laid waste in unimaginable fashion’³⁴) and an ontological devastation (‘the uprooting of man is already here’³⁵). For Heidegger, this ascent of perception and communication is more ruinous than other systematizing productions of the world as a grounded space; if we are to accept Heidegger’s diagnosis then it would therefore be an error not to situate perceptions of a coming crisis in the context of the rise of the satellite.

For Bernard Stiegler, it is not the satellite but the technicity that it metonymizes that is catastrophic. In the second volume of his *Technics and Time* series, *Disorientation*, Stiegler considers a familiar perception of the satellite’s function. This device, he notes, has effected a specific conjunction of power and knowledge. Collapsing time into the immediacy of a present in which the transmission of data is not restricted by physical or geographical space, it has prompted a profound shift in the status of the nation-state: ‘In overcoming the limitations of earthbound networks, satellite transmission wrests control of transmission systems from all territorial powers, opening a communication space dominated by those with the most efficient technologies beyond all the constraints of national laws.’³⁶ The consequence of this ‘overcoming’ is that ‘the state no longer has any guarantee of being its own master.’³⁷ Essentially a tool for the globalization of information, the satellite in such an account is associated with a reconfiguration of social power and political authority across the world.

Stiegler does not dispute the idea that the satellite operates as an instrument of global authority, although his treatment of this operation needs to be situated in relation to his understanding of technics. In *The Fault of Epimetheus*, volume one of *Technics and Time*, he derives two conclusions from the reading of Herodotus that Maurice Blanchot offers in *The Infinite Conversation*. First, there is Blanchot’s account of the cause of globalization. ‘If, reading Herodotus,’ Blanchot writes,

we have the sentiment of a turning point, do we not have, reading our times, the certainty of an even more considerable change, such that events offering themselves to us would no longer be linked in a way according to what we are used to calling history, but in a way still unknown.³⁸

For Blanchot, we are only now transferring to our time Herodotus’s sense of a turning point that transforms history. We are only now starting to recognize the extent to which technicity dominates us. ‘Modern technology,’ Blanchot writes, ‘includes collective organization on a planetary scale for the purpose of establishing calculated planning, mechanization and automation, and, finally, atomic energy.’³⁹ Stiegler takes up this idea of a globalizing technics:

This world is now common to all humanity, it is 'accomplished', culminated in its movement of planetary extension ... This world whose bearings are now planetary is that of Western science and technics in a new configuration ... that has become the world of technoscience.⁴⁰

Globalization is not the recent establishing of a mutual connectedness across territories and frontiers, or the emergence of unprecedented levels of mobility and exchange. It is, rather, the expansion of a tradition and a thought that would establish the world as a place that is both a known uniformity and known uniformly. It is a 'global Western culmination'.⁴¹ If, in *Disorientation*, Stiegler describes the satellite as an instrument that deterritorializes information (and, as a consequence, has initiated new configurations of power and knowledge) then in *The Fault of Epimetheus* such an instrumentalizing of knowledge is understood both as Western technicity's dissemination throughout the world and as the culmination of its efforts to gain mastery over the world.

Second, Stiegler looks to how, in Blanchot's reading of Herodotus, the human becomes sublimated because of its planetary extension. 'What hitherto the stars could accomplish, mankind does. Mankind has become astral',⁴² Blanchot writes. Modern technics does not represent an evolutionary development of the technical thinking that defined earlier moments in history. Instead, it constitutes an unprecedented moment – a re-initializing of history – because humanity now understands itself to have surpassed the worldly constraints that once inhibited its ability to act. For Stiegler, this monumental shift in humanity's relationship to the world is also, necessarily, a transformation of humanity's ontological character. Whereas being was once conceived anthropocentrically as an independent and self-accomplishing entity, it is now understood as accomplished through its deliberative interactions with tools and technologies. This shift Stiegler describes as a passage from the 'first origin' of the human (exemplified in Jean-Jacques Rousseau's notion of the human as wholly interior and self-sufficient) to the 'second origin' of the human (exemplified by André Leroi-Gourhan's account of the human as an entity that is identified by its external interactions). Humanity in this second moment becomes understood as *homo faber*, a user of technical devices that allow us to think that we make and shape both ourselves and things in the world. The continued intensification of this technicity means that it operates today not as we typically assume, as a force for the re-unification of a formerly dispersed humanity, but as a mode of mastery that subjects the world to the regulative idea of a stable and enduring uniformity.

For Stiegler, this age of the second origin – where external instruments are seen to bestow upon us a sovereign power to determine both ourselves and the world – is not merely a catastrophe as Nancy defines it, as ‘upheaval, reversal, overturning, collapse.’⁴³ It is, rather, a disaster in the sense of a *dis-astrum*: a condition of becoming ill-starred, a separation from the stars. ‘Disaster’, he writes, ‘does not mean catastrophe but disorientation – stars guide. A loss of guides that would have affirmed itself only in its difference, god, regulating idea, eschatology of emancipation.’⁴⁴ Attaching to ourselves celestial authority, by placing ourselves within the sphere of the stars, by launching satellites, we have engendered conditions in which humanity’s essential relation to the stars has been annihilated. The threat to humanity comes not from machines or technologies that will replace us as the governing force on the planet. Rather, we have already sacrificed ourselves to a technicity that forecloses any thinking that would look beyond orbit to a realm that can only ruin our treatment of the world as a comprehensible and docile place.

Echoing this sense orbit as a place of disaster, apocalyptic narratives have started to turn against the tradition in which orbital circumnavigation and observation are associated with the birth of the world as a complete and completely knowable entity. Perhaps the best-known of these narratives, Alfonso Cuarón’s 2013 film *Gravity* provides a cinematic coding of the condition named as the Kessler syndrome, in which debris in orbit collides with other objects to produce a cascading effect that makes orbital space unusable and uninhabitable.⁴⁵ The disaster that unfolds in Cuarón’s film follows Russia’s attempt to launch a missile to destroy a disused satellite; the cloud of remains that proliferates after this act soon destroys other orbiting objects, including the International Space Station (ISS), to produce an even greater field of hazardous orbital waste. Earlier narratives (such as Ken MacLeod’s 1999 novel *The Sky Road*) have focused on the consequences of such an event for the future of space travel: a ring of satellite wreckage would separate the earth from the cosmos and end humanity’s space-going capability. Historical time, understood as the evolutionary advancement of the species across the planet and beyond its earthly roots, would therefore cease. Like Arthur C. Clarke’s 1979 novel *The Fountains of Paradise*, *Gravity* speculates not on the collapse of space travel but on the civilizational disaster that would follow the loss of the satellite network that surrounds the earth. Clarke’s character Vannevar Morgan (named, as Chapter 4 notes, for Vannevar Bush) describes the dire consequences of such a loss from a future in which these instruments have become essential to the functioning of life:

The Space Age is almost two hundred years old. For more than half that time, our civilization has been utterly dependent upon the host of satellites that now orbit Earth. Global communications, weather forecasting and control, land and ocean resources banks, postal and information services – if anything happened to their space-borne systems, we would sink back into a dark age. During the resultant chaos, disease and starvation would destroy much of the human race.⁴⁶

Gravity adjusts the timescale that Clarke's novel imagines: rather than a hundred years, this film confirms that it has taken half that time for the earth to become dependent on satellites. And, rather than voicing anxiety about the potential collapse of this orbiting system, Cuarón's film imagines how such a collapse might unfold for two characters (Shuttle astronauts Ryan Stone and Matt Kowalski) who experience it. Nevertheless, for Cuarón as for Clarke, this collapse would constitute a civilizational disaster. 'Expect a communication blackout at any moment', the astronauts are told, leading Kowalski wryly to remark that 'Half of North America just lost their Facebook'.⁴⁷ *Gravity* therefore indicates that an orbital disaster would deglobalize the world; without satellites' facilitation of planet-wide communication, the world would cease to be in contact with itself. Closing with the only surviving astronaut's (Stone's) successful return to earth, this film does not explore the chaos, disease and starvation that for Vannevar Morgan will inevitably ensue. It does, however, point to humanity's need to reconceptualize itself following the destruction of the globalized world. Emerging from the water in which she lands, and without the devices (even the spacesuit) that allowed her to survive in orbit, Stone – the solitary representative of human life at this point in the film – is born again from the earth's nurturing and protective fluid. As her bare feet make landfall and as she takes her first faltering steps, this character becomes connected to a ground from which orbital life has become essentially estranged. Our species lives through this disaster, then, but only after it has been torn away from its ambitions to transcend the planet. For Latour, 'What no longer makes any sense is to transport oneself in dreams, without obstacles and without attachments, into the great expanse of space' and in Cuarón's film, he writes, 'Dr Ryan Stone summed up the situation nicely for us: when she finally made it back down onto the muddy earth, she confessed: "I hate space!"'.⁴⁸

The association of orbit with catastrophe emerges in an array of other literary and filmic texts, including Michael Crichton's 1969 novel *The Andromeda Strain* (and its film adaptation by Robert Wise in 1971), John Nance's 2006 novel *Orbit*, Oliver Hirschbiegel and James McTeigue's 2007 film *The Invasion*, Neal Stephenson's 2015 novel *Seveneves*, Daniel Espinosa's 2017 film *Life*, Dean

Devlin's 2017 film *Geostorm* and Julius Onah's 2018 film *The Cloverfield Paradox*. In Don DeLillo's short story 'Human Moments in World War III', the catastrophe of being in orbit is a perceptual one. The future war that precedes the events of this story means that the vision of earth as a spherical ecosystem has collapsed. The principal character of this story

no longer describes the earth as a library globe or a map that has come alive, as a cosmic eye staring into deep space ... The war has changed the way he sees the earth. The earth is land and water, the dwelling place of mortal men, in elevated dictionary terms. He doesn't see it any more (storm-spiralled, sea-bright, breathing heat and haze and colour) as an occasion for picturesque language, for easeful play or speculation.⁴⁹

For Buzz Aldrin and John Barnes's 2000 novel *The Return*, it is the elevation of war to orbital space that will be disastrous. Like Cuarón's film, this novel takes an orbital missile strike as the threshold event in a story about the escalation of the fight for economic and political authority. Here, a localized war between India and Pakistan, having taken the familiar form of ground- and air-based conflict, dramatically changes when Pakistan detonates a nuclear bomb in orbit. This effort to destroy India's orbiting military, commercial and social communications infrastructure has unintended consequences, however: instead of being regionally limited, this detonation is of an unanticipated magnitude, with its effects extending across orbital space:

The Pakistani government was loudly proclaiming that they had intended only to destroy satellites in the immediate vicinity of the detonation and to create a cloud that would wipe out satellites passing through low Earth orbit above that part of the world for a few hours ... If that had been their intention, somewhere they had gotten their numbers wrong. They hadn't realized how rapidly the high-energy protons and electrons would accelerate in the Earth's magnetic field, or how long they would remain trapped in the field ... That radiation would remain there for weeks, extending from 80 to 30,000 miles from the Earth's surface. While it lasted, all of the near Earth orbits would be bathed in enough radiation to destroy the electronics on satellites within an hour or two.⁵⁰

As well as destroying remotely operated satellites, this radiation field soon affects the ISS, and much of *The Return* is dedicated to imagining how the crew of this station would be rescued in a context in which NASA (following an attempt by China to sabotage the Shuttle programme) had also ceased to function. In an attempt to ameliorate its treatment of Pakistan as a nation that cannot count, Aldrin and Barnes's novel attributes this country's catastrophic miscalculation

to deceptive manoeuvrings by the Chinese government (which in this story provides technical support with the weapon launched by Pakistan). Alongside the attempt to disable NASA's shuttle programme, this orbital cataclysm, Aldrin and Barnes's characters speculate, was designed to position China as the only supplier of orbital launch vehicles in a moment of high demand.

Following the construction of the ISS, orbit has become associated with the idea of nations working collaboratively to benefit the planet and its populations, but *The Return* offers an alternative image of a realm in which certain nations deceitfully attempt to disrupt the orbital pursuit of a shared internationalism. Indeed, this novel suggests that countries like China will always sabotage efforts to enhance and heighten the ethic of collaborative transnationalism, so the notion of a functional globalization needs to be treated as a naïve and unattainable fantasy. Other narratives locate the world's unification in orbit, but for *The Return* this is a place of territorial conflict; what this conflict demands, it proposes, is the return of the United States as a sovereign power that can restrain unruly nations and preserve the social values that this novel regards as axiomatic. *The Return* begins as a story about the disastrous effects of military incompetence, but at its centre is the proposition that the principle of global polity will inevitably collapse in orbit.

In Tess Gerritsen's 1999 novel *Gravity*, the prospect of a social and civilizational catastrophe combines with the possibility of humanity's extinction. Looking to orbit as the place from which death will descend, this novel envisages a biowarfare experiment on the ISS that the United States conducts without informing either its international partners or the crew members who monitor the results of this experiment. In the scenario that follows, a minor accident triggers the viral transmission of the organism that this experiment produces, rapidly infecting those on the Station and the Shuttle crew that is dispatched to recover the corpse of a dead Station crew member. When this rescue mission returns to the earth, it carries with it the lethal biological agent, transporting this organism from the supposedly secure and secluded environment of an orbiting laboratory to a world that struggles to prevent its dispersal. Human life, Gerritsen's *Gravity* therefore proposes, is fatally threatened because of what might secretly be produced in orbit.

Several aspects of Gerritsen's novel mean that it is more provocative than the genre bio-thriller that such a summary suggests. First, the politics that shape this text are strikingly different to those that inform Aldrin and Barnes's novel. Whereas *The Return* proposes that private corporations will save the United States as a space-faring nation, Gerritsen's *Gravity* associates NASA with an ethic

of publicly funded, socially responsible and non-militarized research. And, in contrast with Aldrin and Barnes's image of the United States as the only nation that can protect the world from unruly and dangerous governments, in this novel it is the United States that threatens. Although this nation is ultimately seen to contain the viral threat that descends from the ISS, Gerritsen's *Gravity* also firmly establishes America as the place from which such a threat is most likely to come. Second, and perhaps more substantially, what this alternative sense of national responsibility and global threat points to is a failure of the ethic of international collaboration and co-operation that has structured the licit and official description of the ISS as the site of a heightened internationalism. If, as Chapter 1 describes, the world was born with the launch of the Station's first module, *Zarya*, then Gerritsen's novel suggests that the narrative of globalization's accomplishment no longer gravitates towards the ISS. Seen for the first time from the *Atlantis* shuttle by one of this novel's characters, 'the ISS looked like a majestic sailing ship soaring through the heavens. Built by sixteen countries ... it had taken five years to assemble her, piece by piece, in orbit'.⁵¹ And yet, when this character is given a tour of the Station, both it and what it promises to the world are seen to be tarnished: 'As they passed through *Zarya* ... she saw smudges on the walls, the occasional scratch and dent ... The station was more than just a maze of gleaming labs; it was also a home for human beings, and the wear and tear of constant occupancy was evident'.⁵² Tired, damaged and reduced to just another place in which people go about their daily lives, *Zarya* here no longer seems conceivable as heralding the dawn of an immaculate and intact world.

V

Against the sense of disaster that is often associated with earth-bound contagion, climate change or war, Cuarón, Aldrin and Barnes, and Gerritsen situate orbital space at the centre of the coming catastrophe. These texts share the anxiety that a coming catastrophe might begin above the atmosphere, but they also appear to share a questionable investment in the possibility of redemption. The figures who populate these fictions are seen to encounter unmanageable crises and an unimaginable chaos, and yet they appear to possess the ingenuity and fortitude that allows them to endure and overcome catastrophic events. When taken as metonyms for humanity more generally, they suggest that our species has the audacity, skill and creativity that will allow it to analyse, comprehend and avert any civilizational or biological extinction event. Human life will continue, these

texts insist, even if our understanding of life in the world has been profoundly altered.

When narratives such as these assume that humanity both can and should survive, they maintain the humanist orthodoxy in which the world and the forces of nature are seen to answer to the will and authority of one species that is produced by, and inhabits, this place. Restaging what Claire Colebrook describes as 'a common motif in science fiction narratives of alien invasion', in these texts 'the judgment of humanity as life-denying and life-unworthy is neither refuted nor answered but set aside as the plot hurtles towards redemption'.⁵³ Stories of orbital catastrophe do consider whether human activity might result in specific instances of disaster. However, dedicated to confirming humanity's active sovereignty in the world and its capacity for self-preservation, narratives such as these not only refuse to consider the severity and full extent of human conduct. They also set aside the question of whether humanity should be judged as unfit to live. For Colebrook, this avoidant attitude has become established as a recurring feature of disaster and post-apocalyptic film and literature 'precisely when our energies ought to be focused on what humans have done to the planet and how they might desist from so doing'.⁵⁴ Because they refuse to consider either planetary destruction or auto-annihilation as immanent to our species' current mode of being, stories of orbital catastrophe share with related narratives the unquestioned assumption that humanity can and should prevail. As a consequence, they fail to consider the possibility that radically adjusting the anthropo-planetary relationship – including a fundamental reconception of species being – might be the only way in which humanity (or, more accurately, a version of it) can survive.

Agamben and Kant provide Colebrook with the conceptual resources for beginning this project of radical conceptual adjustment. Agamben describes modernity as a final moment of hope for humanity because it makes our 'impotentiality' acutely apparent. Rather than something that is able to actualize an inner capacity to become whole and complete, being human has only ever been the pursuit of an unrealizable potential, but in modernity this impossible endeavour is intensified to a critically transformative level. The two defining aspects of this moment for Agamben are totalitarianism ('where humans are reduced to so much manageable and disposable matter or animality') and democratic hedonism ('where we become nothing more than the targeted consumers of dazzling spectacle'⁵⁵); both of these moments, Colebrook writes, demonstrate 'our essential capacity not to actualize' what is distinctively human. Modernity in this manner eradicates the association of being human with the

pursuit of an immanent potential, although at the same time it ignores this operation. What this doubled manoeuvre produces is a sense of humanity's extinction:

It is at this point of exhaustion, when we have become frozen spectators in a world in which images appear as ready-mades, that we can see both that there is no guarantee that we will be human and that it is human to forget oneself.⁵⁶

Rather than realizing a latent essence, all that modernity has produced is the debasement of subjective and social life, either converting us into commodities to be consumed by this social order or placing us in a domain of captivately empty appearances. A defining feature of our historical moment, this heightened degradation should provoke in us the awareness that our deeply held notion of the human is unactualizable; this is the extinction that is at the heart of modernity. Embracing this tragic vision – accepting that humanity cannot survive in the form that it currently takes – is our only chance for some sort of continued life.

To this possibility of a reanimating loss of substance and essence Colebrook adds Kant's association of visual perception with both illusory understanding and the speculative opening of thought. Kant 'drew upon a tradition of philosophical wonder', she writes, 'when he isolated man's capacity to look into the heavens as both a source of delusion that would draw him away from grounded knowledge into enthusiasm, and as the necessary beginning of a power of thinking that would not be tied solely to sensation'.⁵⁷ Standing on the earth's surface, we become distracted from reflecting on our worldly situation when we gaze fancifully to the firmament that extends beyond the perceptual ground. At the same time, for Kant it is only through this kind of distraction that thinking will be renewed and we will be able to break with habitualized perceptions of being in the world. Put otherwise, Colebrook finds in Kant's analysis of looking and observing an account of immanence and transcendence that is centred on a perceptual shift that moves between planetary ground and celestial space.

Colebrook does not mention celebrations of the world's spectacular arrival through orbital photography, although her reading of Kant points to how such a notion of encompassing vision must interrupt itself:

There is something essentially self-destructive about the human theoretical eye: our very openness to the world – the very relation that is our life – is precisely what seduces us into forgetting that before there is an eye that acts as a camera or window there must have been something like an orientation or distance, a relation without relation.⁵⁸

Responses to perception of the world from orbit are typically premised on the idea that this elevated perspective permits an unprecedented vision of completeness. What Kant offers, Colebrook proposes, is a counter-memory that seeks not to remember the world fully but to recall the forgotten act of coming to perception that always precedes comprehension. With regards to orbital photography, this means that before the world is apparently revealed in Gagarin's celestial vision or the Apollo missions' arresting images, it comes to the eye or camera in a manner that demands the work of sense- and image-making. Rather than sanctioning either the idea that the world reveals itself to those who look down from orbit, or the assumption that the world is captured in the arresting images that have been produced beyond the earth's atmosphere, Kantian and post-Kantian thinking calls us back to the orientation that precedes perception.

This recollection of orientation requires us to think again about how we comprehend the world; as a result, it represents a disaster for the tradition in which the eye is associated with the stable accomplishment of knowledge. In the context of ecocatastrophe, this recollection for Colebrook should provoke us not only into a fundamentally different – metaphysically ruinous – approach to perception. It should also make us think differently about whether we should continue to exist. 'Today, we might start to question the appropriate point of view from which we might observe and evaluate the human viewing eye', she writes, 'from our own greater will to survive, *or* would it not be better to start to look at the world and ourselves without assuming our unquestioned right to life?'⁵⁹ Recognizing the eye's function as an organ of constitutive looking is essential to forging an epistemology that refuses the assumption that things reveal themselves when observed. But, as well as looking again at how perception functions, it is necessary for us also to consider the possibility that the human eye may not always be able to look at the world.

The task of imagining a future in which the human species no longer exists generally falls today to work on the Anthropocene, and for Colebrook too the idea that we should speculate on a world in which we remain only as a geological record is a compelling one. The idea that we can imagine a world without our species is, obviously, questionable because 'the positing of the anthropocene era relies on looking at our own world and imagining it as it will be when it has become past.'⁶⁰ Imagining a world without us denies the futurity of the future because it anticipates and determines in advance what this world will look like, but also because it subjects the world to come to the kind of geological reading that is currently applied to strata that were forged in the past. 'Not only do we imagine what *would be readable* for a world without readers', she proposes, 'we also have

to deploy and imagine (from within geology) a different mode of stratigraphic imaging.⁶¹ Put otherwise, speculating on life after the Anthropocene requires a vision that is not rooted in modernity's fantasy that the human eye is the organ of all observation. However, despite this historico-perceptual impasse, the need to think the world beyond human life for Colebrook remains imperative. What matters is not the content that is attached to the vision of life after our species has disappeared but the acknowledgement of the possibility of our disappearance and the recognition that something ('a world') will live on after our demise. Thinking this futural time and place beyond the Anthropocene is motivated by a resistance to the perception of humanity's 'self-willing self-annihilation in which consciousness destroys itself to leave nothing but its own pure non-being'; rather than restaging such an anthropocentric error, with the idea of our extinction 'we can begin to imagine imaging for other inhuman worlds.'⁶²

VI

Both the literature and film that Colebrook discusses and narratives of orbital catastrophe are disinclined to engage in this thought experiment. They fail to entertain the possibility that the world might outlive its human inhabitants, but they also fail to address the ethico-climatological question of whether humanity can justifiably claim a right of survival. What they appear to take as axiomatic is the principle of living on; the task of those who return to earth after the devastation of orbiting instruments and habitations, of those who survive a manufactured-in-orbit species-threatening virus or of those who have to reinvent global society following the destruction of the orbiting communication infrastructure is to figure out what biological and social life is to become. Significantly, Cuarón's *Gravity*, Gerritsen's *Gravity* and Aldrin and Barnes's *The Return* close at the point at which humanity's tenacity is rewarded and its continued existence is guaranteed. They also therefore avert their gaze from even the minimal task of reflecting on how ethical and political modes of being – as well as modes of being in relation to the world – might be reinvented after the threat of extinction.

Narratives of orbital disaster set aside humanity's destructive attitude towards the planet, and they are structured by the presupposition that our species possesses the capacity and sovereign right to survive. But, although it operates as an undeniable principle for these narratives (and for disaster and post-apocalyptic cultural texts more generally), this principle cannot be fully or

unequivocally realized. Stories of orbital catastrophe, like all narrative and social discourses, are ambivalent. However much they affirm the idea of a Promethean humanity that possesses the ability, will and entitlement to survive, these stories are unable to shake off the suspicion that survival is impossible. What troubles these texts is not the suspicion that biological life will end, but the fear that what it means to be human, and what it means to be human in the world, is about to be extinguished. Polarizing the consequences of orbital disaster and ecocatastrophe as merely biological (as either the survival or extinction of our organic life) does not sufficiently convey the fracturing of species-being that must necessarily follow the kinds of events that are depicted in Cuarón's, Gerritsen's, and Aldrin and Barnes's texts. The critical question posed by this literary and cinematic body relates not to biology but to ontology: what will humanity become if our current mode of shared or worldly being can no longer be sustained?

Cuarón's *Gravity* provides an example of how such an anxious sense of extinction persists against the grain of this film's concluding image of the persistence of life. Much of this film is devoted to the spectacle of calamity that unfolds following the destruction of a defunct satellite. Ecstatically documenting the scale of this disaster, Cuarón's film catalogues its effects on the majority of other orbiting instruments and vehicles. And yet, the catastrophe that we witness relates not to satellites, a shuttle or the ISS. Instead, this film dramatizes the loss of our capacity to observe the world from above. Millard points out that 'a calamitous cascade of collision detritus ... could significantly degrade the many services that society now depends upon from satellites – communication, navigation, Earth-observation and so on',⁶³ and Cuarón's *Gravity* stages such a destruction of the place from which the world has been seen spectacularly to appear. The heightened vision that has been associated with being in and looking from orbit will come to an end because of reckless human action, this film proposes. Stone's return to earth needs to be understood in terms of this loss of our heightened perspective: no longer able to define ourselves from orbit, we will, it proposes, need to look again at being in the world.

In this manner, Cuarón's film echoes Colebrook's comments on looking again. For Bergson, she points out, the eye needs to be understood as an organ that immobilizes what it regards in the pursuit of comprehension; in this process, it forsakes 'intensity – the infinitesimally small differences and fluxes that the eye edits out'.⁶⁴ For an alternative to this association of vision with fixity, Colebrook turns to Deleuze and Guattari's idea of perception as repetition: rather than attaining a final and encompassing perception, the eye for them returns to what it sees. This is the eye not as the organ of organic observation but as a synthesizing

instrument that can only produce multiple versions of the same because it can never see completely. 'It is the cutting power of the eye that needs to be thought,' Colebrook writes, 'the eye does not free itself from imposed distinctions to return to the flow of life, but should pursue ever finer cuts and distinctions, beyond its organic thresholds.'⁶⁵ In this repeated visualization and individuation, differences and fluxes are presented to the eye, provoking it constantly to look again.

Beyond Cuarón's film, the literature and cinema of orbital disaster reveal this perceptual catastrophe. Gerritsen's *Gravity* questions the notion of a planetary self-sufficiency revealed from orbit, and it forces us to look again at how planetary observation operates. This novel reminds us that departure and separation from the world cannot take place. Even when moving in the celestial heights of the Space Station, even when vicariously looking down on the earth through the surrogate eye of the satellite, inhabitation and vision remain worldly. Recurring constantly in Gerritsen's novel is a sense of conjunction, of movement between and across spaces that are never out of touch with each other, of a convergence which tethers above to below. As much as the crew on the ISS look down on the earth, people below look up to it in moments of spectatorial co-observance that deny the detachment of one place from the other. Acts of repeated and displaced therefore produce a sense of an uncertain world in Gerritsen's *Gravity*. The conjunction of earth and orbit is a disaster for the idea of a globalized world, and this disaster becomes literalized when this novel imagines a global pandemic that would result from the relationship between these supposedly separate places. Although the virus that is central to this novel is engineered on the Space Station, its origins lie below – not simply on the ground, but at one of the lowest points of the seabed; despite suggesting that the human becomes threatened when it dares to leave the ground in which it has been rooted, Gerritsen's *Gravity* situates the origin and source of contamination, contagion and corruption within the earth. Tracking the aetiology and outbreak of this pathogen, Gerritsen's novel suggests that the terrestrial and the unearthly constantly infect each other in ways that will result in the end of the world.

VII

Other texts share with Gerritsen's *Gravity* such a sense of the end of the world. They too find such a crisis to be inseparable from the world's orbital extension. The principal events in Christian Kiefer's 2012 novel *The Infinite Tides* are

focused on a former ISS crew member whose time on board the Station is curtailed following the death of his daughter. What was once measurable and determinate – place, family, nationality, globality and universality – in this character's state of mourning becomes incalculable and inconceivable; what once grounded this character, even in orbit, begins to float uncontrollably away from sense. Saturating this novel is the unravelling of faith in what might be termed an astronautic *mathesis*, the idea that the world belongs to a quantifiable system. The idea of calculability initially suggests to this character the possibility to perceive cosmological order and a technical circumscription of all that is:

After the fractals there remained within him a source of gravity he had never conceived or comprehended, a force that seemed to pull at him from space, from the chaos itself, from the fractal and crystalline darkness that existed everywhere beyond him, as inexplicable and indomitable and infinitely beautiful as the pull of life and death itself. And yet he remained as practical as he had ever been, perhaps even more so, and he would take that practicality with him to spin at the fringe of whatever mankind did not know, would probably never know, about the whole of the universe outside Earth's orbit, as if the abyss itself could be placed in a frame and such a framing could make it easier to understand.⁶⁶

Extending beyond the ground, the world and its orbital extension in this moment are seen to be delineated and measurable, even if the universe that is subject to perceptual framing remains disorderly and unruly. But the assurance that accompanies this notion of a worldly order – the idea of calculability and of location – catastrophically fails when the world below changes for this character: 'The most fundamental information had been lost: trajectory, velocity, acceleration, indeed the pull of gravity itself. All he knew now was that he was unaware where such variables could be located.'⁶⁷ As much as, for *The Infinite Tides*, orbit is the place in which planetary order is perceived and established, it is also where perception fails and where the world breaks apart.

Vandana Singh's 2004 short story 'Delhi' further traces a similar framing and fracturing of the world. Unlike *The Return*, Cuarón's *Gravity*, Gerritsen's *Gravity* or *The Infinite Tides*, this story reflects on what happens when the satellite's gaze is displaced onto regions of the world that use it to look by proxy at themselves. Aseem, the character around whom this story is organized, experiences his home city Delhi across time (he is haunted by those who lived before and will live after him) and as a disharmonious space – it 'is a place of contradictions – it transcends thesis and anti-thesis',⁶⁸ Singh writes. The satellite is the instrument that provides this character with a sense of how to approach what this story

describes as Delhi's sublime incomprehensibility. First, it allows him to see Delhi not as part of an ordered and harmonious ecology – the world as a unified space or undivided (global) community; this city is, instead, a place that can be seen but not known:

He recalls a picture he saw once in a book when he was a boy: a satellite image of Asia at night. On the dark bulge of the globe there were knots of light; like luminous funghi, he had thought at the time, stretching tentacles into the dark. He wonders whether complexity and vastness are sufficient conditions for a slow awakening, a coming to consciousness.⁶⁹

Such a slow awakening does not occur, however, and Aseem comes to realize that Delhi's constant transformation means it is a place that refuses to be captured within the orbital gaze:

The city's needs are alien, unfathomable. It is an entity in its own right, expanding every day, swallowing the countryside, crossing the Yamuna which was once its boundary, spawning satellite children, infant towns that it will ultimately devour. Now it is burrowing into the earth, and even later it will reach long fingers to the stars.⁷⁰

In Singh's story, the world picture that orbital vision provides reshapes the world as an image made unstable by its reinscription across the world; this picture is never, Singh's text suggests, seen finally, and neither is it consummated by those who put sight machines in orbit. Against the familiar treatment of satellites as instruments which maintain a technologized and global hegemony, in 'Delhi' perception – of location, of urban space, of national and transnational belonging – is reclaimed and displaced by the images that descend from these devices. Rather than confirming the world as a continuous space, and rather than functioning as instruments through which a spectatorial or panoptic authority is effected and remains self-sustaining, satellites in Singh's story instead become tools for the improper – perhaps even impertinent – seizing of sight and sovereignty.

According to Singh's story, as with Cuarón's, Gerritsen's, Aldrin and Barnes's, and Kiefer's texts, there is therefore something catastrophic about orbit. Even if they do not provide the same sense of what catastrophe might be – a global pandemic and biological annihilation, technological destruction and civilizational ruin or the failure of systemic thinking and the collapse of perception – what draws these texts together is the shared recognition that being in orbit is profoundly threatening to how the world is conceived as a complete and uniform place. If being human is now defined as a condition of planetary connectedness, and if this condition is seen paradoxically to emerge from our

recently acquired ability to leave the earth, then destruction of orbital being must also result in the destruction of our ability to see the world as a globalized whole. This is the catastrophic event that these texts anticipate, even if such an anticipation is masked by a manifest endorsement of the humanist presumption of our capacity and right to succeed in the face of species-threatening crises.

These texts therefore confirm Nancy's claim that we are turning away from the idea of a world that is complete and completely knowable. In 'The End of the World', he declares that 'there is no longer any world: no longer a *mundus*, a *cosmos*, a composed and complete order (from) within which one might find a dwelling'.⁷¹ No longer is it possible, Nancy writes, to conceive of a 'down here' that can be framed and differentiated from 'a beyond or outside of this world'.⁷² This is not an apocalyptic vision of a species or planetary death. We are witnessing an end according to Nancy, although it is the realm of 'signifying sense', within which humanity and the world are conceived, is reaching its culmination:

Adversaries of the thought of the 'end' are incorrect in that they do not see that the words with which one designates that which is coming to an end (history, philosophy, politics, art, world ...) are not the names of subsistent realities in themselves, but the names of concepts or ideas, entirely determined within a regime of *sense* that is coming full circle and completing itself before our (thereby blinded) eyes.⁷³

Any regime of sense which assumes completeness and closure carries within itself its own ruinous ending, Nancy proposes here, and this observation certainly applies to how sense is assigned to the concept of 'world'. When understood as an entity that is finally seen and known, the world is conceptualized not as a rich ground for many ways of being or multiple perceptions of humanity's home. It becomes a fixed space in which meaning has come to an end. Or, as he writes in *After Fukushima: The Equivalence of Catastrophes*, 'The present has its end in itself in both senses of the word *end*: its goal and its cessation'.⁷⁴ We no longer need to think about what the world is because it is now finally and fully revealed to us: the 'end' of 'the end of the world' on the one hand therefore needs to be understood as the *telos* that technical thinking treats as attainable.

On the other hand, Nancy's reading of this teleology does not conclude with the idea that conceiving the world as complete represents an end to thinking. By arriving at such a determination, the system of technical thinking must also come to an end. This does not mean that we are moving from one moment in world history to another, or that the concept of world is being modified to fit changing modes of perception or thinking. It means that any regime of

sense cannot see beyond itself and consequently cannot envisage whatever will succeed it. ‘World’ as a concept has underpinned thinking about a planetary home that is composed and complete; if such a perception of an integrated finitude does not hold (partly because of how being in and looking from orbit now appear to us to be catastrophic) then it is necessary to recognize that this perceptual system has failed, but also that it is no longer possible to assume the presence of a world that will endure and be visible to a different perception. This for Nancy is the end of an Occidental concept of world that has ‘extended this determination across the entire *world*’⁷⁵ and seeks to encompass all that is external to it.

The literature and cinema of orbital catastrophe expose this terminal condition. Singh’s ‘Delhi’ challenges the Occidentalist assumption of a worldly perspective and global power by displacing both the satellite’s panopticism and the notion that the earth moves uniformly within its own space. Cuarón’s *Gravity* points to orbital space as devastatingly unmanageable, and other narratives of orbital threats to bodies and consciousness similarly point to how the concept of ‘world’ cannot be sustained as a designation for the site of being. Revealing that the effort to encompass the world – and to interiorize all that is external – is an impossible undertaking, these and other narratives of orbital catastrophe confirm Nancy’s observation that sense can function only in relation to an externality: ‘There is no sense except in relation to some “outside” or “elsewhere” *in the relation to which sense consists*’.⁷⁶ Forged in relation to an outside that is set aside in its conception, ‘world’ at once designates an entity in itself from which thought seeks not to stray and an entity that cannot be situated wholly within its own space.

VIII

Haruki Murakami’s 1999 novel *Sputnik Sweetheart* contrasts with the literature and cinema of orbital catastrophe because it is not a story about the destruction of either the technological network that has sustained perceptions of a connected world or the assumption that the world is revealed in orbit. This novel does however explore the loss of the sense of the world that Nancy describes. *Sputnik Sweetheart* is a novel for which orbit is the place from which global catastrophe unfolds, and for it the satellite allows us to make sense of this loss. In the early pages of this novel, one of the main characters, Sumire, complains about her inability to write:

‘My head is like some ridiculous barn packed full of stuff I want to write about,’ she said. ‘Images, scenes, snatches of words ... in my mind they’re all glowing, all alive. Write! They shout at me. A great new story is about to be born I can feel it. It’ll transport me to some brand-new place. Problem is, once I sit at my desk and put them all down on paper, I realize something vital is missing. It doesn’t crystallize – no crystals, just pebbles. And I’m not transported anywhere.’

With a frown, Sumire picked up her 250th stone and tossed it into the pond.

Maybe I’m lacking something. Something you absolutely must have to be a novelist.⁷⁷

Murakami’s narrator, K, replies by making an analogy, and by recounting a practice that he says took place in China a long time ago:

A long time ago in China there were cities with high walls around them, with huge, magnificent gates. The gates weren’t just doors for letting people in or out, they had greater significance. People believed the city’s soul resided in the gates. Or at least that it should reside there. It’s like in Europe in the Middle Ages when people felt a city’s heart lay in its cathedral and central square. Which is why even today in China there are lots of wonderful gates still standing. Do you know how the Chinese built these gates?

‘I have no idea,’ Sumire answered.

People would take carts out to old battlefields and gather the bleached bones that were buried there or lay scattered about. China’s a pretty ancient country – lots of old battlegrounds – so they never had to search far. At the entrance to the city they’d construct a huge gate and seal the bones up inside. They hoped that by commemorating the dead soldiers in this way they would continue to guard their town. There’s more. When the gate was finished they’d bring several dogs over to it, slit their throats, and sprinkle their blood on the gate. Only by mixing fresh blood with the dried-out bones would the ancient souls of the dead magically revive. At least that was the idea.

Sumire waited in silence for me to go on.

Writing novels is much the same. You gather up bones and make your gate, but no matter how wonderful the gate might be, that alone doesn’t make it a living, breathing novel. A story is not something of this world. A real story requires a kind of magical baptism to link the world on this side with the world on the other side.⁷⁸

The story that K recounts here provides us with a lesson in writing: novels need to be invested with meaning by some mystical or supernatural process; writers gather up something that is dead and they reactivate it, bringing life to what is otherwise inert matter or material; the dead live again through an act of literary

enchantment. According to this narrative, a sacrifice is needed to complete this process, though not an actual letting of blood, he is keen to point out: 'It's a metaphor ... You don't have to actually kill anything.'⁷⁹ Here, Murakami's novel is concerned with how we are to understand what a novel can do, describing writing as a process of infusing life into dead bones. The literary and the literary critical merge here, then, and what this passage suggests is that we need to tell stories about the making of stories if we are to understand the place of meaning in literature.

K's story about the bones and blood of literature is also, however, about globalization. His remark that 'a story is not something of this world' is easy to read in relation to the idea of writing as a 'magical baptism', as an enchantment that confers life on the dead. Such a reading would be a mistake; instead we should take K's remark as a comment on whether writing can reveal the world. Writing is not merely about the materiality of the world, as the bones of K's story, or the lifeless pebbles that signify Sumire's despair over her abilities as a writer, suggest. A story according to this passage is about something that is not reducible to the world that we inhabit or experience. What literature reveals is something that cannot be revealed, something on the other side of writing that intrudes upon the idea of a knowable world. The world that we think we know is a space divided, rather than brought together through the social and cultural practices that are associated with globalization.

The figure of the satellite in *Sputnik Sweetheart* confirms this challenge to the idea that we inhabit a world that has been successfully contained within thought. Murakami prefaces the novel with a brief passage that provides some indication about its title:

Sputnik

On 4 October 1957, the Soviet Union launched the world's first man-made satellite, *Sputnik I*, from the Baikanor Space Centre in the Republic of Kazakhstan. *Sputnik* was 58 cm in diameter, weighed 83.6 kilograms, and orbited the Earth in 96 minutes and 12 seconds.

On 3 November of the same year, *Sputnik II* was successfully launched, with the dog Laika on board. Laika became the first living being to leave the atmosphere, but the satellite was never recovered, and Laika ended up sacrificed for the sake of biological research in space.

from *The Complete Chronicle of World History*⁸⁰

As this novel begins, then, the circumnavigation of the planet is associated with death. Orbit, Murakami's preface reminds us, is hostile to life, and it suggests

that our ascent to this place will, like writing, require sacrifices. When *Sputnik* returns early in the novel, it is not as an instrument that provides reliable vision or knowledge. Instead, it is the source of confusion for Sumire's companion, Miu:

Miu had heard of Jack Kerouac and had a vague sense that he was a novelist of some kind. What kind of novelist, though, she couldn't recall. 'Kerouac ... hmm ... Wasn't he a Sputnik?'

Sumire couldn't figure out what she meant ... 'Sputnik? You mean the first satellite the Soviets sent up, in the fifties? Jack Kerouac was an American novelist. I guess they do overlap in terms of generation ... '

...

Finally it dawned on Sumire. '*Beatnik!*'⁸¹

The dawn of the satellite age is here seen to converge with the literary, and for Murakami, literature is not of this world. *Sputnik*, this novel suggests, is not to be associated with a globalized world, but is an instrument that catastrophically takes us elsewhere.

Notes

- 1 Todd A. Borlik, *Ecocriticism and Early Modern English Literature: Green Pastures* (London: Routledge, 2011), 128.
- 2 A.C. Bradley, *Shakespearean Tragedy: Lectures on Hamlet, Othello, King Lear, Macbeth* (London: Macmillan, 1905), 270.
- 3 Robert Markley, 'Summer's Lease: Shakespeare and the Little Ice Age', in *Early Modern Ecostudies: From the Florentine Codex to Shakespeare*, ed. Thomas Hallock, Ivo Kamps, and Karen L. Raber (Basingstoke: Palgrave Macmillan, 2008), 137.
- 4 Markley, 'Summer's Lease', 137.
- 5 Steve Mentz, 'Tongues in the Storm: Shakespeare, Ecological Crisis, and the Resources of Genre', in *Ecocritical Shakespeare*, ed. Lynne Bruckner and Dan Brayton (London: Routledge, 2016), 164.
- 6 Bruno Latour, *Facing Gaia: Eight Lectures on the New Climatic Regime*, trans. Catherine Porter (Cambridge: Polity, 2017), 81.
- 7 Latour, *Facing Gaia*, 81.
- 8 Latour, *Facing Gaia*, 82.
- 9 Latour, *Facing Gaia*, 83.
- 10 Latour, *Facing Gaia*, 94.
- 11 Latour, *Facing Gaia*, 94.
- 12 Latour, *Facing Gaia*, 107.
- 13 Latour, *Facing Gaia*, 106.

- 14 Latour, *Facing Gaia*, 244.
- 15 Isabelle Stengers, *In Catastrophic Times: Resisting the Coming Barbarism*, trans. Andrew Goffey (Ann Arbor MI: Open Humanities Press/Meson Press, 2015), 20.
- 16 Stengers, *In Catastrophic Times*, 45.
- 17 Stengers, *In Catastrophic Times*, 45–6.
- 18 Stengers, *In Catastrophic Times*, 10.
- 19 Stengers, *In Catastrophic Times*, 45.
- 20 Stengers, *In Catastrophic Times*, 44.
- 21 Stengers, *In Catastrophic Times*, 47.
- 22 Stengers, *In Catastrophic Times*, 43. Emphasis in the original.
- 23 Stengers, *In Catastrophic Times*, 47.
- 24 Déborah Danowski and Eduardo Viveiros De Castro, *The Ends of the World*, trans. Rodrigo Nunes (Cambridge: Polity, 2017), 1.
- 25 Danowski and Viveiros de Castro, *The Ends of the World*, 1–2.
- 26 Danowski and Viveiros de Castro, *The Ends of the World*, 2–3.
- 27 J.E. Lovelock, ‘A Physical Basis for Life Detection Experiments’, *Nature* 4997 (1965): 568.
- 28 Latour, *Facing Gaia*, 76–7.
- 29 Latour, *Facing Gaia*, 78.
- 30 Latour, *Facing Gaia*, 78.
- 31 Latour, *Facing Gaia*, 136.
- 32 According to Columba Peoples, the use of the Blue Marble image on the cover of Lovelock’s *Gaia: A New Look at Life on Earth* ‘indelibly linked [this image] to Lovelock’s thesis of Earth as a unitary system or biosphere’. Columba Peoples, ‘Envisioning “Global Security?” The Earth Viewed from Outer Space as a Motif in Security Discourses’, in *The Politics of Globality since 1945*, ed. Rens Van Munster and Casper Sylvest (London: Routledge, 2016), 169
- 33 Latour, *Facing Gaia*, 80–1.
- 34 Heidegger, “‘Only a God Can Save Us’”, 56.
- 35 Heidegger, “‘Only a God Can Save Us’”, 56.
- 36 Bernard Stiegler, *Technics and Time, 2: Disorientation*, trans. Stephen Barker (Stanford, CA: Stanford University Press, 2009), 106–7.
- 37 Stiegler, *Disorientation*, 107.
- 38 Maurice Blanchot, *The Infinite Conversation*, trans. Susan Hanson (Minneapolis: University of Minnesota Press, 1993), 266, cited in Bernard Stiegler, *Technics and Time, 1: The Fault of Epimetheus*, trans. Richard Beardsworth and George Collins (Stanford, CA: Stanford University Press, 1998), 89.
- 39 Blanchot, *The Infinite Conversation*, 266.
- 40 Stiegler, *The Fault of Epimetheus*, 90.
- 41 Stiegler, *The Fault of Epimetheus*, 90.

- 42 Blanchot, *The Infinite Conversation*, cited in Stiegler, *The Fault of Epimetheus*, 89.
- 43 Jean-Luc Nancy, *After Fukushima: The Equivalence of Catastrophes*, trans. Charlotte Mandell (New York: Fordham University Press, 2015), 7.
- 44 Stiegler, *The Fault of Epimetheus*, 92. Callum Watt points out that Stiegler does not hold to this separation of disaster from catastrophe: 'By writing that the disaster is not a catastrophe, Stiegler here wants to indicate the specialized usage of Blanchot; this is somewhat confusing given that in the first volume "catastrophe" is used only in proximity to Blanchot and is apparently synonymous with the disaster. Stiegler's quotation therefore activates a context that looks both backwards and forwards, such that "Disaster" cannot be simply delimited as referring to disorientation'. Callum Watt, 'The Uses of Maurice Blanchot in Bernard Stiegler's *Technics and Time*', *Paragraph* 39, no. 3 (2016): 310.
- 45 Compelling visual and sonic responses to 'the troubling, beautiful, dangerous, and fascinating world of space junk' are provided by Cath Le Couteur and Nick Ryan's project *Adrift*. Available online: <http://www.projectadrift.co.uk/> (accessed 10 April 2018).
- 46 Clarke, *The Fountains of Paradise*, 54
- 47 Alfonso Cuarón, dir., *Gravity*, film (Burbank, CA: Warner Bros. Pictures, 2013).
- 48 Latour, *Facing Gaia*, 80.
- 49 Don DeLillo, 'Human Moments in World War III', *Granta* (1 March 1984). Available online: <https://granta.com/human-moments-in-world-war-iii/> (accessed 21 February 2018).
- 50 Buzz Aldrin and John Barnes, *The Return: A Novel of the Human Adventure* (New York: Tom Doherty Associates, 2000), 164–5.
- 51 Tess Gerritsen, *Gravity* (London: Harper, 2004), 90.
- 52 Gerritsen, *Gravity*, 94.
- 53 Claire Colebrook, *Death of the Posthuman: Essays on Extinction*, vol. 1 (Ann Arbor: Michigan Publishing/Open Humanities Press, 2014), 199.
- 54 Colebrook, *Death of the Posthuman*, 197.
- 55 Colebrook, *Death of the Posthuman*, 13.
- 56 Colebrook, *Death of the Posthuman*, 13.
- 57 Colebrook, *Death of the Posthuman*, 13.
- 58 Colebrook, *Death of the Posthuman*, 13–14.
- 59 Colebrook, *Death of the Posthuman*, 22.
- 60 Colebrook, *Death of the Posthuman*, 24.
- 61 Colebrook, *Death of the Posthuman*, 24.
- 62 Colebrook, *Death of the Posthuman*, 27–8.
- 63 Millard, *Satellite*, 157.
- 64 Colebrook, *Death of the Posthuman*, 16.
- 65 Colebrook, *Death of the Posthuman*, 23.

- 66 Christian Kiefer, *The Infinite Tides* (London: Bloomsbury Circus, 2012), 240.
- 67 Kiefer, *Infinite Tides*, 46.
- 68 Vandana Singh, 'Delhi', in *The Woman Who Thought She Was a Planet and Other Stories* (New Delhi: Zubaan/Penguin, 2008), 30.
- 69 Singh, 'Delhi', 37–8.
- 70 Singh, 'Delhi', 38.
- 71 Jean-Luc Nancy, 'The End of the World', in *The Sense of the World*, trans. Jeffrey S. Librett (Minneapolis: University of Minnesota Press, 1997), 4.
- 72 Nancy, 'The End of the World', 4.
- 73 Nancy, 'The End of the World', 4.
- 74 Nancy, *After Fukushima*, 37.
- 75 Nancy, 'The End of the World', 6.
- 76 Nancy, 'The End of the World', 7.
- 77 Haruki Murakami, *Sputnik Sweetheart*, trans. Philip Gabriel (London: Vintage, 2002), 16.
- 78 Murakami, *Sputnik Sweetheart*, 17.
- 79 Murakami, *Sputnik Sweetheart*, 18.
- 80 Murakami, *Sputnik Sweetheart*, 2.
- 81 Murakami, *Sputnik Sweetheart*, 7–8.