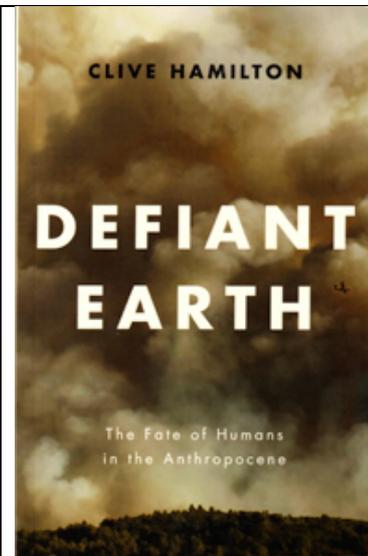


Defiant Earth

Extended Review

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It was several years ago that I first came across the shocking idea that humans were moving more physical stuff around the planet than the natural processes of volcanos and earthquakes, rivers and tides. In the last few years, the idea of the Anthropocene has engaged both scientists and civil society: human activities have been sufficiently extensive to have moved Earth out of the Holocene, the epoch of the last 10,000 years, into a new epoch in which human actions have fundamentally impacted planetary dynamics. In (2106) I reviewed Gaia Vince's award winning book *Adventures in the Anthropocene* for EarthLines Magazine, and found myself troubled by the lack of fundamental thinking through the



the implications of statements such as 'We must choose the kind of nature we want'. I was also troubled by what I saw as the arrogance of the 'ecomodernist' gloss, the notion that humans can create a 'good' or even 'great' Anthropocene—a perspective that seemed to imply we could get ourselves out of the ecological mess we have created through 'more of the same', which offended against my understanding of systems dynamic.

So I was pleased to have the opportunity to hear Clive Hamilton speak at the University of Bristol in the spring of 2017. Hamilton, an Australian 'public intellectual', Professor of Public Ethics at Charles Stuart University in Canberra, has been central to the debate about the nature, meaning and implications of the Anthropocene, writing a series of books that have both stimulated and infuriated readers. He describes this latest book as 'groping toward understanding what it means... to have arrived at this point in history'.

The following bullet points summarize the book; my detailed review (rather long) follows

- The Anthropocene is not a new labelling of existing environmental concerns but points to a very recent rupture in the processes of a newly identified entity Hamilton calls the Earth System. The emergence of the Earth System has 'ontological significance' for human identity
- The dynamic of the Earth System is fundamentally and permanently altered and will not bounce back to the quiet period of the Holocene. Human history and Earth history are now entangled as never before, so the future of Earth depends on decisions made by humans.

- A powerful humankind now stands in relation to a profoundly disturbed and recalcitrant planet: Defiant Earth
- Since the future of the entire planet and many forms of life is now contingent on the choices and actions humans make, we must accept that humans are exceptional and embrace a 'new anthropocentrism'. This is different from the 'monstrous anthropocentrism' and 'the wanton use of our freedom and technological power' that have led us to the brink of ruin. We face a nature that 'refuses to be tamed and is increasingly unsympathetic to our interests'. While we must confront this human arrogance, now is *not* the time to 'cut humans down to size'. Since the future of the entire planet and many forms of life is now contingent on the choices and actions humans make, 'denying the uniqueness and power of humans becomes perverse'.
- Hamilton is critical of ecomodernism and of the 'post-human' perspective that humans are just another species; also of the 'cosmic utopianism' he (incorrectly in my view) attributes to Thomas Berry and his colleagues

Later chapters in the book explore human identity on Earth. He writes of a 'new universal anthropos' an imperfect creature in the process of creation, entering the world in an 'underdeveloped intellectual and moral state'. Only through our own moral efforts may we 'evolve into beings able to exercise full moral autonomy'. But this being and its creative freedom is itself an emergent property of the Earth System. This helps explain the contradictory way in which human identity is both separate from nature while remaining unshakably dependent on it. Can we become 'beings guided by a new cosmological sense rooted in the profound significance of humankind in the arc of the Earth'.

This is a brave, important and at the same time infuriating book. Brave because Hamilton is not afraid to take a stance and open up the discourse; important, because of his emphasis on the Earth System and the need for a new understanding of anthropos; infuriating, because Hamilton, in his arguments for a new anthropocentrism, reaches too soon for a new resolution of the relationship of human subjects to the new 'Earth System object'.

Review

Chapter One sets out three ideas clearly. First is that the Anthropocene names a very recent rupture in the processes of Earth. There have been various proposals as to when the new epoch started: some argue that humans have always been 'world-making' species, certainly since the invention of agriculture; others point to its origins in the carbon-based economy of the Industrial Revolution. Hamilton dates the 'turning point in the sweep of Earth's history' (p.4) to the 'great acceleration' that followed the Second World War, when resource use and waste volumes took

a sharp upturn. This rupture is therefore recent in human history and far more so in planetary history. And it is *permanent*: human actions—not least the massive redistribution of carbon into the atmosphere—will impact on the planet for millennia to come. It is unlikely that Earth will ever return to an epoch as benign for the development of civilization as the Holocene.

This leads to the second big idea, that the Anthropocene brings together human history with Earth history for the first time, so that the future of Earth depends not just on ‘natural’ processes, but on decisions that are volitional, made by humankind aware of its action and their consequences. Earth and human history are entangled as never before, and the future course of the Anthropocene depends in part on human impacts on the Earth system that have not yet occurred (p.7)

The third big idea is that the transition we must grasp is that the Anthropocene is not just a re-naming of ecological concerns that have troubled at least some since the publication of Rachel Carson’s *Silent Spring*, but rather a rupture in the process of a entity newly discovered by scientific research which he terms the *Earth System*—a concept envisioned to capture the qualitative leap from disturbances in ecosystems to disruption in the whole planet (13) and the co-evolution of its ‘spheres’—the atmosphere, the hydrosphere, the cryosphere, the biosphere and the lithosphere. It was not even possible to think in such terms before the arrival of a ‘new scientific paradigm’ which has its roots in the systems modeling of the Meadows and his colleagues in *The Limits to Growth*; in the Gaia hypothesis proposed by James Lovelock and Lyn Margulis; and more recently on the Intergovernmental Panel on Climate Change; emerging fully at the turn of this century as the ‘integrative meta-science of the whole planet understood as a unified, complex, evolving system beyond the sum of its parts’ (pp.11-12).

The Earth System is thus a ‘new object’ (p.11); its study supersedes, Hamilton claims, ‘ecological thinking’ as a biological science of relationships; it transcends earlier objects of study such as ‘landscape’ and ‘ecosystem’. The emergence of this new object has *ontological meaning*. ‘It invites us to think about the Earth in a new way’ (p.21). This ‘new way’ offers the vision of ‘an Earth in which it is possible for humankind to participate directly in its evolution by influencing the changing processes that constitute it.

Hamilton is critical what he sees as the ‘misreadings, misconceptions, and ideological co-optations’ (p.9) of the idea of the Anthropocene. Both scientists and social scientists have put forward interpretations informed by their own disciplinary perspectives that have *deflated* the significance of the new epoch and diminished its qualities as a threatening rupture. (pp.14-21) The term ‘Earth System’ is systematically derived from a body of scientific evidence; so ‘The invention willy-nilly of substitute terms is itself an epistemological mistake because it treats scientific analysis as if it were the same as social analysis’ (p.92).

In the later pages of chapter one, Hamilton turns to two major issues that arise from this definition of the Anthropocene. First, he takes to task with ecomodern gloss that asserts that humans now have the capacity to control climate and regulate Earth as a whole; we can therefore have a 'good' or a 'great' Anthropocene. Hamilton points out that, even if this were morally and practical possible, this perspective is based on a false understanding of the nature of the rupture that has occurred. We are no longer in the Holocene epoch; the dynamic between humans and the Earth System has been 'fundamentally altered' (p.25). Maybe the conditions prevalent during the Holocene were a platform for a 'good Anthropocene', but the systems dynamics are now irrevocably disruptive. We are no longer on a resilient planet in which ecosystems can 'bounce back' but, as he develops later, on an Earth that is responding with metaphorical defiance to human meddling.

Chapter Two begins by emphasizing the profound nature of the rupture we are facing: the 'monstrous anthropocentrism' and 'the wanton use of our freedom and technological power' have led us to the brink of ruin. We face a nature that 'refuses to be tamed and is increasingly unsympathetic to our interests'. While we must confront this human arrogance, now is *not* the time to 'cut humans down to size' (p.40). Since the future of the entire planet and many forms of life is now contingent on the choices and actions humans make, 'denying the uniqueness and power of humans becomes perverse'. He insists we consider 'the vast scale of human achievement (p.40) in all its cultural and scientific dimensions. At the same time, it is clear that humans cannot and will never 'master' nature, for its power is too great. Hamilton calls for a 'new anthropocentrism': it is too late for us to abandon an anthropocentric standpoint; we must face up to the 'profound importance of humans, ontologically and now practically, to Earth and its future'.

On the one hand, humans have never been more potent; and on the other, 'Gaia has been outraged' and awakened by human action, now more unpredictable, dangerous and less subject to human control. We can no more design the nature we wish to have as ecomodernists claim, nor retreat to allow Mother Earth to return to balance, as some forms of ecological philosophy would argue. Now a powerful humanity faces an active and fractious Earth System. This new reality places 'human beings at the centre of the Earth System's evolution' (p.51). Humans are necessarily 'embedded' in the Earth System, 'the possessor of autonomy, more powerful than ever, but always constrained by the processes that govern the Earth System, not just locally but at the level of the whole'. The new anthropocentrism insists that on an active and fractious Earth humans are not free to do whatever they want but must 'restrain ourselves and

restrict what we do'; it 'emphasizes the unique responsibility humans have to protect the Earth and, above all, the avoid dangerous disruption of the Earth System'.

One of the criticisms of the idea of the Anthropocene holds that it is untenable to think about the responsibility of humanity as a species. There is nothing about the Anthropocene that can be attributed to 'mankind in general'; we cannot speak coherently of an abstract humanity; it is in the divisions in humanity rather than its homogeneity that we must look for the origins of the Anthropocene. In this view the Anthropocene originates primarily and originally in the choices made by nations of the global north since the Industrial Revolution. Better, some say, to call it a Capitalocene. Hamilton's response is that, while not minimizing the responsibility of the Global North for the mess that has been created, China and India will soon surpass the carbon emissions of the North if they have not already done so. But more important, the Earth System, conceived as a whole, can make no distinction between races, cultures, or nations; and if all societies have not contributed to the rupture, all will experience its impact. 'If the Anthropocene is a rupture in the history of Earth as a whole, then it is also a rupture in the history of humans as a whole'. (p.34)

Further, Hamilton argues that we must 'locate the rise of industrial capitalism within the broader arc of the history of the species and its disconcerting entanglement with geology'. Humans didn't just stumble into the new techno-industrialism; it was part of our trajectory, not just as species like any other, but as a *humankind* with a '*world-making capacity*'. (p.62) Humans become humans within worlds of social and material practices, worlds of lived experience embedded in a material environment. The Anthropocene has disclosed a new object, the Earth System; in doing so it also incites us to 'think of humans afresh' and our material-technological capabilities as a 'planet altering force' (p.63). It reveals a 'new kind of human'. Traditional ways of exploring the subject-object dualism are needed. No longer can we think of ourselves as separate from nature, nor simply another part of it. Humans must be seen as subjects struggling to operate within a world that is both of their own making and radically Other at the same time (p.64). The world-making creature has become an agent of geological change: 'if the subject is always embedded, the world in which it is embedded is an Anthropocene world'.

This position contrast to that of ecomodernists, who see a 'humanized Earth' as inevitable and desirable. For while ecomodernists see humans as essentially benign, the new anthropocentrism sees them as 'capable of enormous creative renewal but equally capable of catastrophic hubris and overreach' (p.66): the 'humanized Earth' of the Anthropocene is what we have always had to fear, 'one made by the misuse of our own powers'. Hamilton traces the roots of ecomodernists to the theology of theodicy, which holds that evil acts are necessary for the functioning of the larger whole that is in the ultimate analysis benevolent. In contrast, he

reaches for a more complex position, quoting Goethe that human creativity is a 'divine gift', but one that tests our character. Hamilton celebrates human creativity while warning against our tendency to hubris.

Where does this argument for a 'new anthropocentrism' get us? I think it helps to see humanity as both independently creative and embedded in a more recalcitrant planet. This offers a novel, if uncomfortable resolution of the subject-object dualism—except it is not a resolution, only and uncomfortable and temporary, even frightening, toehold. It implies that humans in their world-making capacities must always tread, not just lightly but cautiously and tentatively; there is no clear place to stand. Hamilton's arguments against ecomodernism are convincing, although the ecomodern point of view is so firmly embedded in western conservatism that I doubt his arguments will hold much sway with adherents.

But given this, I wonder if Hamilton wants to too strongly to find a resolution. He begins Chapter Two telling us that we must doubt everything; that all the ways we have thought about the human place in the world need to be upended. And yet he does he not return to something very familiar with his embrace of a 'new anthropocentrism'? Surely humans are independent actors embedded in dynamic Earth System; surely we are world-making creatures; AND we are embedded, evolved out of and part of that same Earth System. It seems to me that what is called for is not a re-centering of the human, but a new centering and a continual re-centering of the question of the human-Earth relationship.

As I read on, I am increasingly uncomfortable about the way Hamilton's arguments slip into either/or, more/less reasoning. The proposal that a humanity that has wantonly exercised its capabilities in such a way to have disturbed and awakened later forces in the Earth System is reduced to questions of who has more or less power. And there is something about the nature of his dismissal of other points of view that I find awkward and unpersuasive.

Hamilton is never quite able to articulate a deep sense of humans with their particular gifts and capacities as full participants in life on Earth, both 'plain members of the biotic community' (to borrow Aldo Leopold's phrase that I am sure Hamilton would hate) with particular and peculiar capabilities for 'world-making'. His arguments often tend toward either/or choices for example in 'We can no more design the nature we wish to have' as ecomodernists claim, nor retreat to allow Mother Earth to return to balance, as some forms of ecological philosophy would argue'; or when he argues that humans possess an 'autonomy, more powerful than ever, but always constrained by the processes that govern the Earth System, not just locally but at the level of the whole'. In the end, his new anthropocentrism '*elevates* humans to a previously unimagined power over nature' and that this marks us out as '*the* unique creature'.

But one of the important lessons from Gaia theory, as articulated for example by Stephan Harding in *Animate Earth*, is that the close systemic coupling of living and non-living has created an Earth System ever more biologically productive and ever more. As Tim Flannery puts it in *Life on Earth*, life spends the vast energy budget derived from photosynthesis on increasing diversity and modifying the planet to make it more habitable.

The arrival of the Anthropocene is indeed brutally challenging to the human, and in particular Western, view of itself. Clearly we cannot go on before, and clearly both the ecomodernist dream of a humanized Earth and the naïve ecological dream on a return to the balance of the Holocene are untenable. Humankind can neither advance into nor retreat from the mess it has made. But I suggest that what is needed is not a 'new anthropocentrism' that sets a creative humankind up against and recalcitrant Earth—for surely, there can be no validity in a worldview even that even hints we stand *against* the Earth out of which we evolved and remain a part. Rather we must search for a sense of deep participation in the process of the planet. As Flannery puts it, the human superorganism might redeem itself, take part in and even enhance Gaian self-regulation.

Surely the emphasis must be on a continual process of cultural and intercultural inquiry. Earth System science must be integrated with the human science in a new systems holism. We need to discover and create, not just how to resolve the practical problems that confront us in energy use and generation, in farming, in conservation, in manufacture; but also a new sense of humankind on Earth. Hamilton reaches for this, a sense of an emerging global *anthropos*, in the later stages of his book, but his attachment to a new anthropocentrism continually throws him back into unnecessary oppositional arguments. In the new and challenging dispensation of the Anthropocene, nothing can be central for long, certainly not *anthropos*.

This is particular evident in Chapter Three where Hamilton explores Friends and Adversaries, placing his perspective in the context of other thinkers. He starts by reflecting that 'grand narratives that order and explain human experience are out of fashion' and reflects on Leotard's phrase that a metanarrative was an 'apparatus of legitimation'. The Anthropocene, he reflects, is a totalizing narrative par excellence, of 'life lived and ordered under the shadow of a new geological epoch'. But it is not, he argues, a narrative that legitimizes the current dispensation or promises a happy ending. Its legitimacy lies rather in its truth-telling function: it is a narrative of fiasco, of being too late; but it is also a narrative that holds out that the worst can still be avoided. No appeal to cultural perspectives can get us round the blunt truth of the Earth System: 'If the postmodern moves in a world of knowledge, language and text, the Anthropocene brings us back to Earth with a thud'. This has a curious resonance with the old

story of Samuel Johnson: when asked how he would refute Bishop Berkeley's proof of the non-existence of matter, he answered by 'striking his foot with mighty force against a large stone, till he rebounded from it—"I refute it *thus*"'. Postmodernists and social constructions will question Hamilton's emphasis on the truth-telling qualities of science; the reality of the Earth System is a new object remains central through the book. He argues that the extended difficulties of negotiating a climate change agreement have led humanity toward the shared question, 'How can we live together on this Earth?' Totalizing forces are also evident in the globalization of economics and culture. Thus the Anthropocene arrives as a grand narrative that all humanity is obliged to live under: an unexpected and unwelcome unification of humankind.

Hamilton then turns to explore the intellectual trends that this new epoch challenges. He has no truck with denialism and has already disposed of ecomodernism, which posits increased human power against a quietist Earth. He seeks to contrast his vision of an Anthropocene in which an increased human power confronts an activation of the dormant forces of the Earth System with what he 'posthumanism' or 'ontological pluralism' that he sees as dominating ecological thought. These theorists breakdown the modernist assumption that there is something special about humankind over against Earth and other species; they argue for humans as another species, for agency as residing in networks of material things. Moving away from a view of a passive nature open to human domination, he contends that by giving more power to nature, posthumanists take it away from humans in a manner that is untenable.

His critique of the posthumanists includes Donna Haraway, Anna Tsing, Jane Bennett and Timothy Morten. He argues that they have extended the trend in the social sciences of deconstructing hierarchies of power beyond social relations to focus on anthropocentrism itself. He states that although this looks like the continuation of radical social criticism, the extension from social critique to a critique of humanity's relation to the natural world is an 'unwarranted epistemological leap that drains the approach of its legitimacy' (p.87), although he doesn't elaborate this contention. Hamilton contends that posthumanism—the position that 'human beings remain embedded, entangled affiliated and networked into the natural world' (p.89)—fails to acknowledge that fact that Hamilton regards as central to the Anthropocene, which is that they are at the same time a force in nature. The posthumanist position is untenable because, with the arrival of the Anthropocene, while our deep connections with natural processes are inescapable, 'humans do occupy a position separate from nature and from there now stand against it'. Hamilton wants us to accept the unique and extraordinary power of humans to influence the future course of the Earth rather than emphasise our embeddedness in natural processes.

This emphasis troubling and limits the power of his arguments. Hamilton wants to come down on one side of the dualism rather than embrace the paradox of embeddedness and separateness that his analysis points to. His arguments are inconsistent. On the one hand he wants us to 'engage with and pass beyond posthumanism' (p.89) but soon afterward states that human impact on the functioning of the Earth System 'elevates humans to a previously unimagined power over nature' and that this marks us out as 'the unique creature' (p.90). In retort to Donna Haraway's assertion that she want to 'get in the way of man making himself the greatest story ever told', Hamilton counters 'the blunt truth of the Anthropocene is that, in the book of life, 'man is the greatest story ever told' (p.91), pointing to the vast achievements of the human project.

There is something over determined about this argument. Over two pages (pp.90-91) he italicizes five words emphasizing his position. He accuses Donna Haraway, of 'terminological incontinence' and of inventing terms 'willy-nilly'. He writes that to dissolve the boundaries between the human and non-human and distribute agency within material networks is 'anthropomorphism by stealth'. (p.95) He pays lip service to their contribution to decentering the human of modernism while reaching for a new certainty, a sense of power over. He has no truck with Tim Morten, who he as quotes, articulates the paradox by pointing out that 'nonhumans are entangled with us in all kinds of strange ways'. That 'strange entanglement' seems to me to be closer to the heart of matter than Hamilton's assertion of the unique power of humans.

One way of thinking about this might be to see the 'posthumanists' and deep ecologists as emphasizing the embedded side of the dialectic. Haraway, for example, appeals for a greater sense of kinship—and not just kinship between humans. Hamilton has a point is saying they over-emphasize this. But, for all his talk of a new anthropos, creative and agentic, that is constrained by a material world, he can equally be seen as over-emphasizing the separated side. We need a new sense of participatory reality that honours both separateness and embeddedness.

As I read what seems to be a rather intemperate critique, I find myself wondering how carefully Hamilton has studied those he criticizes. This suspicion is supported by his treatment of one writer with whose work I am particularly familiar, Thomas Berry. In my view, Hamilton simply gets him wrong. Early in the book (p.59) he associates Berry with the 'mystical' and 'transcendent holism' of Teilhard de Chardin, which 'exalts humans to a unique place but detaches us from the actual world'. While Berry draws on Teilhard's articulation of the universe as an evolutionary whole, and indeed argues in *The Great Work* that as intelligent beings the

human 'activate one of the deepest dimensions of the universe' (p.25) his concern is for the human as a member of Earth community. He devotes a whole chapter of *Evening Thoughts* to a critique of transcendent thinking as a source of the present predicament; and he is quite clear that the human has evolved as part of the Earth process: 'Earth is primary and humanity is derivative' (p.19). Hamilton claims, not unreasonably, that the 'story of the universe' articulated by Berry with Brian Swimme and Mary Evelyn Tucker places the human as 'the mind and heart of the vast evolving universe'; but his argument that they focus on the 'marvelous ability of the human species to transcend any obstacle and continue into inexorable rise to a golden future' (p.59) is a straightforward distortion. I read no sense of an 'inexorable rise' in Berry's writing. He articulates the tragedy of our present predicament in his earlier book *The Dream of the Earth*. On the first page of *Evening Thoughts* he writes of the task of creating a viable future for ourselves and the entire Earth community. In *The Great Work* he elaborates the need for a 'transition from a period of human devastation of the Earth to a period when humans would be present to the planet in a mutually beneficial manner' which holds no sense of the inevitability of such a transition.

Berry grounds his arguments, as does Hamilton, in the very recent discoveries of the nature of the universe and Earth as a self-creating, evolutionary system, although of course he was writing before the concept of the Anthropocene was mooted. Where he differs from Hamilton is in his broadly panpsychic understanding of the universe as a 'communion of subjects, not a collection of objects', in which the whole and each of its individual components 'has an intangible inner as well as tangible physical structure' (*Evening Thoughts* p.38). Every aspect of the universe expresses a psychic/spiritual as well as material dimension, so 'It seems best to consider mind and matter as two dimensions of a single reality that comes into being in an immense diversity of expression through the universe by some self-organizing process'. Berry is more likely to write of Earth as an emerging subject than as a 'new object'.

Berry places humans as both members of the community of subjects on Earth, and as having particular gifts and aptitudes that are our responsibility to use at this moment of danger and transition. We need, he argues, 'to move from a human centered to and earth-centered norm and reality. And the last words of Brian Swimme, in the video of the story of the universe, are hopeful but by no means point to and inevitable outcome: 'Maybe wonder will save us'. There is no sense in Berry's writing that 'God or the Universe has a higher plan', as Hamilton maintains (p.114).

If Hamilton misreads so badly a writer with whom I am so deeply familiar so badly, what misreadings are hidden among those with whose writing I am less familiar?

Despite his identification of Earth System as the significant 'new object' for our times, Hamilton's thinking is not always very systemic. When he writes that 'humans now rival the great forces of nature in our impact on the Earth System then this fact *elevates* humans to a previously unimagined level of power over nature' (p.90), albeit tempered by an embeddedness in the material world, he misconstrues the nature of power in a systemic context. As Gregory Bateson pointed out many years ago, a system's integrity rests in ecological circuits that temper the tendency of any part to exponential growth. Any part of the system that attempts to have power over such circuits is likely to set off unintentional runaway growth, often in a part of the system that appears completely unrelated. 'Power over' is conceptual nonsense within a systemic context.

Toward the end of the chapter he reaches for a new integration, arguing that 'humans are indeed embedded in nature and in recent decades in the Earth System itself, but the embedding is not destructive of agency.' He goes on to argue that 'We need an ontology founded on human-distinctiveness-within-networks' (p.99). His statement, 'No other force, living or dead, is capable of influencing the course of the Earth System *and* has the capacity to decide to do otherwise' seems to be both more tempered and more radical than claims of power over; but he immediately tips over an edge by claiming humans to be 'super-agents, powerful even beyond the imaginings of Moderns'. He ends the chapter with a plea that 'we accept the greatness of the human project and the extreme danger that goes with it', a position close to that articulated by Thomas Berry. Hamilton is frustratingly inconsistent in his use of language; this inconsistency points out just how challenging it will be to find the new ontology he points toward.

In Chapter Four, Hamilton turns to making sense of planetary history. Do humans have significance after Nietzsche's death of God and now science has shown we are but a speck on a small planet? Hamilton makes the contentious statement that it is humans that give the Earth meaning and mark it out as a unique planet in the cosmos. He pushes against belittlements of the human project, which he now articulates as 'learning how to live wisely, cooperatively, and well within the limits of the planet' (p.114) which seems to me to imply that it is the planet as a whole that retains meaning. Hamilton argues that with the arrival of the Anthropocene we witness the birth of a 'new universal anthropos' (p.118) and the emergency of planetary history as a 'narrative of human-Earth history' (p.119). This anthropos, he argues, drawing on arguments that have origins in theodicy, is an imperfect creature, in the process of creation, entering the world in an 'underdeveloped intellectual and moral state'. Only through our own

moral efforts may we 'evolve into beings able to exercise full moral autonomy' and through this discover how humankind can fulfill its potential in a manner that is not at odds with the processes of the Earth System. Humans have freedom. But 'Freedom is not the greatest thing; how we decide to use our freedom is the greatest thing'.

In this chapter Hamilton returns to the power of his earlier arguments. He challenges us to think more deeply about the place of humans and the meaning of human life. He wants us to go beyond a traditional religious view and beyond nihilism, not afraid to use words like freedom, responsibility, destiny. It is significant that in doing so he has quite explicitly drawn on the theological thinking of theodocity, developing a more secular articulation of anthropocentricity: the human is both glorious and tragic; the meaning we bring to our lives depends entirely on the moral choices our freedom offers us.

Whence comes this freedom? Hamilton addresses this question in his final chapter *The Rise and Fall of the Super-agent*. Freedom arises, not as Kant argued as a 'spontaneous outbreak of intellectual courage on the part of a handful of free thinkers' (p.136) but rather belongs to nature-as-a-whole, woven into the fabric of nature (p.137). This idea has its origins in Schelling, but makes more modern sense when we understand the Earth System as a 'self-organizing dynamic system characterized by *emergent properties*'. Freedom, in this view, is an emergent property of the whole system, and explains the contradictory way in which human identity is both separate from nature while remaining unshakably dependent on it. Human subjectivity 'can never wrench itself free from its material roots'. (p.138)

With this analysis, the Kantian categories of subject and object collapse. Freedom and spontaneity are no longer exclusively in the domain of the subject and necessity no longer owned by the object or nature. (p.139) We are no longer isolated subjects acting within and against an objective reality, but inhabiting an 'world animated, unruly, and irritable' (p.139). This view of freedom is both more and less anthropocentric: is less so because it is 'forever folded into nature'; it is more so because knowing freedom's source within nature as a whole comes with a heavy responsibility to live within limits as we make new worlds. Humankind is no longer of freak, but becomes the 'key to nature-as-a-whole'. (p.141)

I find myself persuaded and excited by Hamilton's articulation of human freedom as an emergent property of a dynamic Earth System. But in asserting that the human is the key to nature-as-a whole he loses me. If the possibility of freedom is built into nature, and the world itself is animated, there is no reason why freedom of some kind is not manifest in the more than human world, in chimpanzees and dolphins, as posthumanists would argue, or even more

widely in local ecosystems and in the Earth System as a whole living being. Humankind maybe a significant and powerful key to nature, but not necessarily the key.

But this objection does not negate the thrust of Hamilton's argument. Responsibility lies in our embeddedness in the Earth System, not in abstract rules. It is not our split from nature that must be overcome, but our violence against it, which arises from our sense that the experienced split is a total severance. What kind of creature, he asks, 'when in full knowledge of the damage done to Earth System continues on the same path'? Human creativity can be used to enhance the life-enriching capabilities of the Earth System, and 'beyond all purely human-oriented aspirations must be our cultivation of the planet to the enduring benefit of both' (p.145). 'Duty of care for the earth becomes and meaningful goal as well as a prudent one.'

Hamilton gives short shift to those who would avoid this duty of care through geoengineering or fantasies of life on other planets. These fantasies, he argues, compound the guilt at humanity's wanton neglect of the Earth, both 'reckless and self-indulgent' (p.151). We are beyond abstract intellectual ethics, rather searching for a 'different kind or orientation to Earth, one in which we deeply understand our extraordinary power and unique responsibility. Can we become 'beings guided by a new cosmological sense rooted in the profound significance of humankind in the arc of the Earth'. In these later chapters Hamilton's arguments feel much more nuanced. Gone are the assertions of power over and the dismissal of other perspectives. In the last pages he seeks both to explain the experienced split between humankind and Earth and to seek a new integration for the emerging imperfect anthropos.

This is a brave, important and at the same time infuriating book. Brave because Hamilton is not afraid to take a stance and open up the discourse. Important, because of his emphasis on the Earth System and the need for a new understanding of anthropos. Infuriating, because Hamilton, in his arguments for a new anthropocentrism, reaches too soon for a new resolution of the relationship of human subjects to the new 'Earth System object'; there is an ambiguity here that Tim Morten's sense of the strangeness of hyperobjects expresses more fully.

Gregory Bateson long ago told us the most important task was to learn to think in new ways. 'The arrival of the Anthropocene contradicts all narratives' writes Hamilton in his final pages. We are living beyond the possibilities of any utopia, either those promised here on Earth or in a transcendent realm. There is no story of the ultimate triumph of humanity. Maybe, in some distant future, another humanity will emerge, 'contrite and wiser'. But this second civilization is too far off to be relevant to our times. But it seems impossible to imagine that 'this beautiful

shining planet should flower with a form of life endowed with the ability to render the universe knowable, only to see it withdraw into the darkness of unconsciousness'. For Hamilton, this is where hope lies.