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An Unsustainable Modernity: democracy, the global climate emergency and environmental ethics

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Abstract

The paper opens with a series of observations on the unsustainability of modernity, its distinctive features and environmental consequences, which are global in scale and scope. Consideration is given to the global climate emergency and decline in biodiversity and ecosystems and the scientific research that has been accumulating from the nineteenth century, research which has demonstrated the increasingly damaging environmental consequences of business-as-usual under modern capitalist conditions of production and consumption. Scientific evidence confirms that we are in a climate emergency; engaging critically with social and political analyses, this paper therefore focuses on questions subsequently raised about the limits and limitations of the nation state and democratic forms of political governance to deliver what is required to meet the challenge of the global climate emergency. The paper argues for a radical rethinking of the collective and the commons, to encompass all species; it concludes with a call for a Levinasian environmental ethics as the basis for any possibility, remote as that might currently seem, of achieving a sustainable ecologically just form of life not diminished by, or subservient to, anthropocentric assumptions.

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Introduction: an unsustainable modernity — what *needs* to, and what *can* be done?

We live in deeply troubled and very uncertain late modern times. We face global problems with complex interconnected genealogies, the most significant of which is the detrimental impact of modern lifestyles on the planet, on human communities, and on the habitats and lives of a multitude of other species (Kolbert, 2014). These problems stem in significant part from the differentiation of human culture from a constituted 'natural world', the identification of development with economic growth and the unsustainable exploitation of what are assumed to be limitless 'natural resources' for human production and consumption, and forms of democratic governance limited in scale and scope to the interests of human communities configured as nation-states and thereby rendered relatively ineffective to date in respect of the climate crisis affecting a multi-species world.

There is now a substantial volume of scientific evidence and a near complete consensus among active climate and environmental scientists about the climate emergency, increasing global heating and the decline in biodiversity and ecosystems. There have been a series of responses to the changes and potential future risks identified with the climate emergency, ranging from 'denial of the problem, to indifference, nonchalant resignation or blind confidence in technical solutions' (Francis, 2015: 14). Denial has been cultivated in large part by the 'merchants of doubt' and generously funded, right wing, free-market advocating think tanks (Oreskes and Conway, 2010; Klein, 2015); faith has been expressed in possible geo-engineered 'solutions'; and there have been overly-modest national policy initiatives; and too complacent international climate conferences and conventions setting future emission reduction targets.[1]

A number of organisations have emerged to stimulate public awareness about the climate emergency, the unsustainability of modern life styles, and the forms of environmental injustice produced. Campaigns have been conducted to counter the complacency of governments in what Naomi Klein (2015: 360) has described, in recognition of both the sluggish character of governmental responses and the oil, gas, and mining industries close relationships with the state, as 'fossilized democracies'. Three relevant contemporary examples are provided by 350.org, Extinction Rebellion, and YouthStrike4Climate. 350.org is active in 188 countries and claims to be 'building the global grassroots climate movement that can hold our leaders accountable to science and justice' (https://350.org/about/). Extinction Rebellion began in the UK in 2018 and is now active in 35 countries and engaging in forms of direct action in response to the ineffectiveness of current policies to combat global heating and biodiversity loss (Watts, 2018a). And YouthStrike4Climate is taking 'direct action where older generations have failed', including organising a global climate strike in 2019 across more than 130 countries (Monbiot, 2019; UK Student Climate Network).

The relative ineffectiveness to date of governmental responses to the scale, scope, depth, and complexity of the accumulating difficulties and dilemmas identified with the global

[1] These include the 'World Climate Conference' of the World Meteorological Organization held in Geneva February 1979; the 'World Conference on the Changing Atmosphere: Implications for Global Security' held in Toronto June 1988, which placed emphasis on the issue of greenhouse gas emissions and climate change and called for a 20% reduction below 1988 levels in global carbon dioxide emissions by 2005 (Klein, 2015: 55); United Nations Conference on Environment and Development (UNCED), also known as the 'Rio Summit', held in Rio de Janeiro June 1992, at which an international environmental treaty the United Nations Framework Convention on Climate Change (UNFCC) was signed, with the objective of stabilising concentrations of greenhouse gas in the atmosphere at a level that would 'prevent dangerous anthropogenic interference with the climate system' (United Nations, 1992 : 9); in 1997, the UNFCC was extended through an international treaty the Kyoto Protocol in which countries committed in a first period (2008-2012) to attempt to achieve differentiated targeted levels of emission of six greenhouse gases (https://unfccc.int/process-and-meetings/the-kyoto-protocol: accessed 1/3/19) followed in December 2012 by the Doha Amendment to the Kyoto Protocol which initiated commitment in a second period (2012-2020) to new emission reduction targets (https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment: accessed 1/3/19); and then in Paris in 2015, a new agreement was achieved setting out nationally determined contributions to come into force in November 2016 to keep 'global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius' (https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement: accessed 1/3/19).

climate emergency calls into question the appropriateness and readiness of existing forms of political governance. What precisely in our existing unsustainable circumstances might 'sustainability' involve? What is the meaning of environmental justice in a multi-species world in which there is an accelerating loss of biodiversity and a disregard for so many significant others? As Ingolfur Blühdorn has noted, notwithstanding the interventions of activist movements, Green political parties, environmental researchers, and other agencies, 'the developmental trajectory of advanced modern societies… precludes… the transition of these societies towards sustainability' (2013: 16-17).

The complex configuration of problematic issues, risks, and threats that we now face is recognised, in significant part, to be a consequence of the globalisation of modernity, and in particular the globalisation of modern industrial capitalist modes of production and consumption. Particularly problematic is the cultivation of a seemingly endlessly expansive culture of consumerism that, as Thorstein Veblen anticipated, has made the purchase and possession of material goods seem 'indefinitely extensible… an integral part of one's scheme of life… [and] hard to give up' (1994 [1899]: 102). Modern institutions, in particular industrial capitalist production and its culture of consumerism, may have developed first in the West but, as Anthony Giddens (1990) observed, they are now global in scope, as are the high consequence economic, ecological, political and associated risks their globalisation has brought in its wake.[2] Modernity now 'looks unsustainable' (Giddens, 2011: 8). As the head of the Roman Catholic Church Pope Francis remarked in an address to popular social and ecological movements:

'An economic system centred on the god of money needs to plunder nature to sustain the frenetic rhythm of consumption that is inherent to it. Climate change, the loss of biodiversity and deforestation, are already showing their devastating effects in the great cataclysms we witness' (Francis, 2014).

It is in recognition of the enormity of such late modern difficulties that Zygmunt Bauman (2017: 159) identified 'a yawning gap between what needs to, and what can be done… between the size of the problems humanity faces and the reach and capacity of the tools available to manage them'. As we try to determine how we might deal with the scale and scope of the urgent problems we now face, democratic forms of government, sustainability initiatives and policies, and ideas about and associated movements campaigning for environmental justice may be amongst the most significant and perhaps best tools potentially available to us. However, are the 'tools' fit for purpose? Can democracies respond effectively to the threat of environmental catastrophe? Scientific evidence indicates that we are on the verge of a climate catastrophe and that dramatic measures are now required to stave off the worst consequences, raising questions about the capacity of liberal democracies in particular to deliver what is required (Gardner and Wordley, 2019; UNEP 2018; Bendell, 2018; Shearman and Smith, 2007).

Science, human activity and the environment

Science has been providing evidence of the detrimental impact of particular forms of human activity on the environment for over a century. In *Capital* (1976[1867]: 638), Karl Marx made reference to the way in which capitalist transformation of the process of production not only alienates and impoverishes workers but also how, in the case of capitalist agriculture, 'all progress in increasing fertility of the soil for a given time is a progress towards ruining the more long-lasting sources of that fertility'. Marx's (1976: 637) critical concerns about capitalist production hindering 'the operation of the eternal natural condition for the lasting fertility of the soil' were reiterated in a series of comments in 2014 by Maria Helena Semedo, FAO Deputy Director-General, on the causes of soil degradation and erosion, which include chemical-intensive farming

[2] A range of terms have been employed to conceptualise contemporary conditions including late, radical, reflexive and liquid modernity, as well as various 'posts' as in postmodernity and postmodern society. In respect of the matters I am addressing in this paper, whose genealogy can be traced back to institutions and forms of life developing from the eighteenth century, powerfully shaped by the growth and global diffusion of industrial capitalism and an increasingly expansive culture of consumerism, 'modernity' constitutes the most appropriate designation.

techniques, deforestation, climate change and global warming. Semedo stated that 'the current escalating rate of soil degradation threatens the capacity of future generations to meet their needs' (FAO 2014). Given current trends 'all of the world's top soil could be gone in 60 years' (Arsenault 2014). The IPCC (2019a) report *Climate Change and Land* confirmed the scale and extent of land degradation under current unsustainable land management practices and the contribution better land management might make to both improved food security and tackling climate change.

In the course of the nineteenth century, natural scientists argued that increased levels of carbon dioxide (carbonic acid gas) in the atmosphere would be likely to increase the temperature of the Earth's surface (Joseph Fourier 1827; Eunice Newton Foote 1856; John Tyndall 1872). An increasing accumulation of scientific evidence subsequently documented the respects in which 'the carbon dioxide and water vapor of the atmosphere have remarkable power of absorbing and temporarily retaining heat rays… It follows that the effect of the carbon dioxide and water vapor is to blanket the earth with a thermally absorbent envelope' (Chamberlin, 1899: 551).

In 1961 American scientist Charles David Keeling demonstrated that atmospheric carbon dioxide levels were rising steadily as a result of human induced emissions and in 1965 the President's Science Advisory Committee requested Roger Revelle to produce a report on the 'potential impacts of carbon dioxide-induced warming' (Oreskes and Conway, 2010: 170). The report estimated that by the end of the century there would be 25% more carbon dioxide in the atmosphere and that 'marked changes in climate… could occur' (Orsekes and Conway, 2010: 170). In the 1970s a series of scientific publications documented the increasing influence of human activity and use of fossil fuels on the climate. This research provided further evidence on the greenhouse effect or impact of carbon dioxide in the atmosphere (Sawyer, 1972; World Meteorological Organization 1979; Report of an Ad Hoc Study Group on Carbon Dioxide and Climate, to the Climate Research Board, Assembly of Mathematical and Physical Sciences, National Research Council, 1979). In this period a number of other reports, prepared by the US National Research Council and the Energy Research and Development Administration, warned that continuing fossil fuel use would lead to 'intolerable and irreversible disasters' (Rich, 2019: 41) and a paper on climatic change and global warming by Wallace Broecker, a professor of geochemistry, specifically warned that:

"the exponential rise in atmospheric carbon dioxide content will… by early in the next century… have driven the mean planetary temperature beyond the limits experienced during the last 1000 years' (1975: 460).

In the course of the twentieth century, critical social researchers argued that modern industrial modes of production and consumption, and the fossil-fuelled growth imperative integral to capitalist economies in particular, were detrimental to the environment (Penty, 1922; Veblen, 2006[1923]; Polanyi, 2001[1944]; Carson, 1962; Mandel, 1978; Gorz, 1983[1975]; Bahro, 1984; Jackson, 2009; Giddens, 2011; Smart, 2010; Clammer, 2016). Social and economic analysts might not have made explicit reference to the 'unsustainability' of prevailing practices, but they made clear that 'it is simply impossible for civilisation to continue on the road it is travelling' (Penty, 1922: 123). As André Gorz stated, 'our present mode of life is without future… our world is ending;… if we go on as before, the oceans and the rivers will be sterile, the soil infertile, the air unbreathable in the cities' (1983[1975]: 12).

In the 1970s Margaret Mead became interested in 'the interactions between the world society and its planetary environment' and was particularly concerned about the lack of 'public awareness of the growing problems and few efforts to develop long-term national and international solutions' (Leavitt, 1980: xv). In 1975 Mead wrote a position paper, 'Society and the atmospheric environment', for a National Institute of Environmental Health Sciences conference held in North Carolina. Mead recognised that climate change political policy decision making had to be transformed in both scale and scope and that greater public awareness of the long-term consequences of their actions was required:

'We are facing a period when society must make decisions on a planetary scale… Today's natural catastrophes and environmental interventions affect the whole of human society – interconnected as it is in reality though not yet politically capable of acting in concert… Unless the peoples of the world can begin to understand the immense and long-term consequences of what appear to be small immediate choices… the whole planet may become endangered' (1980[1975]: xvii).

Mead believed that democratic governments and policy makers were beginning to appreciate the gravity of the developing global climate change threat. However, she recognised that they were 'trapped in immediacy', confronted by the difficulty of needing to make significant and unpopular decisions in the present to forestall potentially catastrophic future consequences. Such decisions, if made and generally they were not, would be likely to provoke clashes 'between those concerned with immediate problems and those who concern themselves with long-term consequences such as… the next 25 to 50 years for possible climatic change' (Mead, 1980: xvii-xviii). The critical issue identified by Mead continues to impede policy development and action, namely the generally dilatory response of political policy decision-makers to scientific research evidence and warnings. Interests, political and economic, continue to intrude and impede, and indeed call into question scientific evidence and advice that may discredit and, if implemented in policy, prevent fossil-fuelled business-as-usual (Mead, 1980: xix). As a Republican member of the House Science Committee remarked in 1980 in response to the difficulties encountered in attempting to control increasing atmospheric carbon-dioxide levels:

'Do we have a problem? We do… It is the political problem of the inertia of the economic and political system and the time it takes to get decisions put into effect' (Anthony Scoville quoted in Rich, 2019: 56).

The nation-state and global climate change

While acknowledging the relative effectiveness of the nation-state in exercising territorially bounded 'concerted collective action', Bauman (2017: 159) observes that it is 'demonstrating daily its singular unfitness to act effectively under the present condition of planet-wide interdependence of humans'. This lack of fitness is exemplified by the all-encompassing global problems of human induced or anthropogenic climate change and biodiversity decline, which are confirming the limitations of the nation-state system (IPCC, 2019b: 2015; IPBES, 2019; Beck, 2016).

The current and projected consequences of anthropogenic climate change and decline in biodiversity indicate the unsustainable nature of prevailing globally extensive modern forms of life and call into question the capability, indeed the willingness, of nation states, including liberal democracies, to reconfigure late modern ways of living. In short, 'the post-war international "system" of nations is entirely unfitted to the kind of broad-ranging international cooperation now required' (Manne, 2013). Given accumulating evidence of the unsustainability of modernity, what is required is nothing less than a major process of economic, cultural, and political transformation. As John Clammer (2016: 150) has cautioned:

''fixing' things on an ad hoc basis is no longer adequate to the tasks that confront the global community, tinkering with the machine is not enough – it needs replacing, and not with another, bigger machine, but with an organic conception of society and its constituent parts and its relationship to nature.'

There are growing reservations about the capacity of liberal democracies to persuade citizens to 'act in accordance with what science says the long-term global public good requires' and introduce measures necessary to reduce greenhouse gas emissions 'as a political priority' (Burnell, 2012: 833). In response to the indecisiveness of the democratic response to the climate crisis Naomi Klein suggests there is a need to rethink and rebuild 'the very idea of the collective, the commons, the civil, and the civic' (Klein, 2015: 460). Fixing things will require an end to both the unsustainable growth imperative of global capitalism and the favouring of corporate and consumer interests, and, in turn, the practice of a form of government that is able to implement

policy initiatives that prioritise the commons, inclusive of all species and ecosystems (Shearman and Smith, 2007; Hamilton, 2010). Given the accumulating knowledge we have of the consequences of anthropocentric climate change, global heating, and other aspects of human activity on multiple species, as well as our belated awareness that the fate of humankind is bound up with biodiversity and 'ecosystems that depend upon the multitude of species to function' (Magdoff and Foster, 2010: 3), a radical rethinking of the collective and the commons to encompass all species is long overdue. What has been termed a `whole-of-community' approach is required, one that recognises the co-constitutive and complex multiple-networked articulation of the social and the natural, and 'views community as a shared resource with a goal of benefitting all [species as] community members' (Marshman, Lay-Palmer, and Landman, 2019: 2: 3).

Global warming, or more appropriately 'global heating' (Watts, 2018b) or 'hothouse Earth' (Schellnhuber et al, 2018), is the most urgent challenge confronting all nation-states. There are significant implications for the practice of democratic forms of government, as well as for what might be constituted as environmental justice in the current epoch designated the Anthropocene (Crutzen, 2006). Documented scientific evidence of anthropogenic climate change includes global temperature increases, rising sea levels, the melting of ice caps and glaciers, ocean acidification, and an increase in extreme weather events, as well as forms of environmental injustice and damage inflicted not only on human communities but also other species (Shaftel, 2019). However, to date effective wide-ranging initiatives to limit global warming have been lacking, leading the Intergovernmental Panel on Climate Change, which has a reputation for 'significantly underestimating the pace of [climate] change' (Bendell, 2018: 6), to warn that time is running out if we are to 'limit global warming to no more than a 1.5°C rise above pre-industrial levels', an aspiration that depends upon nation states very quickly committing to challenging greenhouse gas 'emission reductions' (Allen et al, 2018: 54: 56). What is now required is of an unrivalled order in scale, scope, and magnitude and necessitates social, economic and technological transformations informed by 'global and regional sustainable development pathways' (Allen et al, 2018: 56).

What needs to be done is well-enough known, namely substantially reduce greenhouse gas emission levels now and achieve net zero emissions well before 2050 (Shabecoff, 1988; Hamilton, 2010; United Nations, 2019). However, given the complex respects in which uses of fossil fuels are so deeply embedded in and articulated with democratic politics, modern ways of living, powerful corporate interests, and the future assumed as 'a limitless horizon of growth' (Mitchell, 2009: 422), how to initiate and implement the necessary processes of transformative change is proving to be 'a uniquely challenging historical predicament' (Hamilton, 2010: 225). The task is made more difficult by resistance to the very notion of anthropogenic global warming, an industry of climate science denial that there is even a problem to be overcome, and associated heavily funded campaigns to promote the idea that scientific evidence on the subject remains contentious (Oreskes and Conway, 2010).[3]

The Montreal Protocol of 1992 contributed to a reduction in the problem of the hole in the ozone layer in the atmosphere. Subsequent global environmental assemblies designed to bind governments of advanced economies to greenhouse gas emission targets, Kyoto, 1997, Copenhagen 2009, and Paris 2015, have proven much less effective. Calculations of national and corporate interests, albeit short-term in character and in environmental terms short-sighted too, have prevailed and prevented the development of effective forms of cooperation. As Robert Kuttner (2018: 255) has argued, the ozone agreement was approved 'relatively early in the current era of environmental concern, before the massive

[3] For an analysis of the financial resources and organizations engaged in climate science denial in the United States of America, see Brulle (2014). Drawing on data sourced from annual IRS returns Greenpeace calculated that in the period 1997-2017 'Koch Family Foundations … spent $127,006,756 directly financing 92 groups that… attacked climate change science and policy solutions' (Koch industries: secretly funding the climate denial machine - https://www.greenpeace.org/usa/global-warming/climate-deniers/koch-industries/ (accessed13/5/1)

corporate backlash set in'. While the United Nations is an important international forum for discussion and production of reports, as well as a significant agent of exhortation — exemplified by the call to the Climate Summit 2019 and the identification of 'prioritized… action portfolios … having high potential to curb greenhouse gas emissions and increase global action on adaptation and resilience' (United Nations, 2019) — it is relatively limited in what it can achieve in the face of nation states wielding their sovereignty as both weapon and shield as they engage in international competition and prioritize narrow national interest over global cooperation and the wellbeing of all countries and citizens around the world. United Nations and UNESCO reports have demonstrated convincingly that the climate crisis is articulated not only with the economic development policies of nation states but also the ways in which we live and engage with other species and ecosystems. Evidence of the increasingly detrimental climate impacts on natural and cultural World Heritage sites across the world indicates that the need to respond is urgent but to date such matters of pressing concern are not being adequately addressed (UNEP and UNESCO, 2016; UNESCO, 2007: 2008).

The first United Nations Conference on Climate Change (COP 1) was held in Berlin in 1995 and COP conferences have been held annually ever since, but not once in the USA, China, Russia, Iran, South Korea or Saudi Arabia, six of the ten countries with the highest levels of carbon dioxide emission levels in 2015 (Union of Concerned Scientists, 2018). Since the Berlin conference global carbon dioxide atmospheric concentration levels have increased from 360.82 ppm in 1995 to 406.55 ppm in 2017 (Ritchie and Roser, 2017) and in the course of a briefing about COP 25, the 2019 Climate Summit, Maria Espinosa, United Nations General Assembly President, stated that '2019 is a critical year, the "last chance" for the international community to take action on climate change' (UN News, 2019). Unfortunately, COP 25 offered little more than an admission that carbon emission targets are too weak and that the international community had 'lost an important opportunity to show increased ambition on mitigation, adaptation & finance to tackle the climate crisis' (UNFCCC, 2019).

How many more "last chances" do we have? Back in 2012 Brad Werner delivered a talk at the American Geophysical Union conference with the title 'Is earth f**cked?' and later in response to a journalist's request for a brief non-technical answer to the question he responded 'More or less' (Klein 2015: 459), a view categorically endorsed by Jem Bendell (2018: 12) who argues that 'we are set for disruptive and uncontrollable levels of climate change'. In *This Changes Everything* (2014) Naomi Klein conjures up modest hope, suggesting that there is 'just enough time', providing something can be done about the inability of 'our political class' to implement appropriate policies, wedded as it is to 'free-market ideology' (2015: 459-460). As the IPCC (2019b: 20) has warned:

'Estimates of the global emissions outcome of current nationally stated mitigation ambitions as submitted under the Paris Agreement… would not limit global warming to 1.5°C, even if supplemented by very challenging increases in the scale and ambition of emissions reductions after 2030 (high confidence). *Avoiding overshoot and reliance on future large-scale deployment of carbon dioxide removal (CDR) can only be achieved if global CO2 emissions start to decline well before 2030* (high confidence) (emphasis added).

The signs currently are far from promising, there is significant continuing extraction and use of fossil fuels, deforestation, agricultural, industrial, and consumer practices producing rising levels of greenhouse gas emissions (Klein, 2019) and, in addition, in defence of existing industrial practices, investments, and short-term interests, opposition and resistance to the very idea of policies designed to cut back on the burning of fossil fuels to reduce emission of greenhouse gases (Hamilton, 2010; Kitcher, 2010). As Magdoff and Foster state:

'The problem is that very powerful forces are strongly opposed to these measures. Hence, such reforms remain at best limited, allowed a marginal existence only insofar as they do not interfere with the basic accumulation drive of the system' (2010: 14).

Everyone in the growing global consumer class is to varying degrees culpable, adding to rising global greenhouse gas emission levels by continuing to participate in increasing consumption of fossil-fuelled manufactured commodities and services. As Klein observes, '[f]aced with a crisis that threatens our survival as a species, our entire culture is continuing to do the very thing that caused the crisis' (2015: 2). Moreover, the European Commission's forecast on the anticipated growth in consumerism suggests the problem of reducing emission levels is likely to increase further:

'By 2030, the middle class is expected to reach 5.6 billion people. This means an additional more than 2 billion people with increased purchasing power than today. Most of this growth will be in Asia. By 2030, China and India together will represent 66% of the global middle-class population and 59% of middle-class consumption... changes in consumer behaviour and consumption patterns are expected to increase demand for food, water and energy by approximately 35%, 40% and 50% respectively by 2030' (European Commission, 2018).

Other things being equal such growth in consumption will lead to significant further increases in carbon dioxide emissions per head of population, exacerbating the problem of climate change (Jackson, Quéré, Andrew, Canadell, Korsbakken, Liu, Peters, and Zheng, 2018).

Deliberations on democracy and climate change

Liberal democratic forms of government, with their competing political parties and short-term electoral cycles, confront particularly challenging dilemmas in respect of the policy initiatives that are necessary to respond effectively to the climate emergency and biodiversity and ecosystem decline. David Runciman (2018: 141: 104-5) describes liberal democracy and the modern state as slow and often 'too unwieldy for the twenty-first century' and takes the view that democracies 'cannot control existential risk'. Democracies find acting decisively difficult in the absence of demonstrable present cause, 'are too easily distracted', and any advantage they may have had over other forms of government in dealing with 'contamination of the environment' has passed (Runciman, 2018: 126: 89). In sum, democracies are now looking 'increasingly erratic when it comes to maintaining a fit space for human habitation' and the multitude of other species, that Runciman (2018: 90) neglects to consider, and with whose existence the human species is so closely articulated.

In liberal democracies, there is a lack of long term thinking necessary to respond effectively to the need to limit climate change and develop adaptive strategies to navigate the disruptive consequences of 'the heating and instability already locked into the climate' (Bendell, 2018: 10). Electoral time frames of 3, 4, or 5 years tend to lead to a preoccupation with the immediate and short term as parties compete for votes and defer potentially unpopular medium and longer-term policy initiatives. The global issues that warrant attention may not resonate at all with particular national communities and their electorates, for whom there may not appear to be any urgency, indeed any perceived current problem at all (Beck, 2016). The increasingly global matters that need to be addressed, particularly the climate emergency, overflow the territorial boundaries of nation states and demand global responses and, in turn, the practice of forms of ethical global citizenship, caring for others, wherever and whoever the others may be, including 'spatiotemporally distant people (i.e., the global poor and future generations) and genetically distant (non-human) nature' (Di Paolo and Jamieson, 2018: 403).

We are so preoccupied with ourselves and our interests and priorities that 'we fail to notice that we are destroying the habitat on which our future [and that of future generations and occluded other species] depends' (Runciman, 2018: 87). Liberal democratic governments tend to prioritise the short-term over longer-term more complex policies required to mitigate and adapt to climate change, respond to the unsustainability of modernity, and address environmental injustices, because 'it is hard to persuade people to focus on the risk of things that haven't happened yet' or are not happening to them, as yet (Runciman, 2018: 105). Liberal democracies are also vulnerable to the 'corporate behemoths', the

lobbying of powerful business interests and, particularly in relation to the climate emergency, those corporations with significant investments in fossil fuel industries, for whom emission reduction policies are a terminal threat to 'business as usual' (Runciman, 2018; Povitkina, 2018; Oreskes and Conway, 2010). The concern for vulnerable business interests is that climate science research will lead to a significant increase in governmental intervention, regulation, and taxation to fight climate change, which is why the science has been disputed by fossil fuel corporations and conservative and libertarian public policy organizations, including The Heartland Institute and The Heritage Foundation.[4]

Ulrich Beck (2016: 10) argues that the fundamentally different 'cosmopolitized world' of the twenty-first century is emerging not by design but through metamorphosis, that 'the frame of action is no longer national and integrated but global and disintegrated' and this is especially the case in respect of climate change which presents a fundamental challenge to democracy. In providing conceptual clarification of metamorphosis Beck makes reference to the caterpillar being metamorphosed into a butterfly, only to proceed arbitrarily to limit the notion as follows: 'metamorphosis is not social change… it is a *mode of changing human existence*. It signifies the age of side effects. It challenges our way of being in the world, thinking about the world, and imagining and doing politics' (Beck, 2016: 20 emphases added). We know it is not only the world of *human* existence that is changed by the processes of metamorphosis Beck (2016: 42) identifies, the worlds of 'other than human persons' have been transformed dramatically by human-induced 'side effects' and 'normalized damage', indeed the habitats and lives of nonhuman animals are increasingly being degraded and destroyed (Davy, 2007: 40). Moreover, the unacknowledged human-induced changes in the worlds of multiple other species, explored by Jacob von Uexküll (2010), are having a significant range of detrimental impacts on human existence. As Sir Robert Watson, Chair of the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES), noted of such significant 'side effects': '[t]he loss of species, ecosystems and genetic diversity is already a global and generational threat to human well-being' (IPBES, 2019).

Climate change has been framed in two ways according to Beck (2016: 36), namely (i) normatively and politically – 'What can we do against climate change?' and (ii) sociologically and analytically – 'What does climate change do to us, and how does it alter the order of society and politics?' The suggestion is that the second question 'allows us to think beyond apocalypses or the salvation of the world and focus on its metamorphosis'. However, the 'us' that climate change is considered to affect largely occludes the multiplicity of nonhuman animals exposed and vulnerable to humanly induced environmental changes. There are merely cursory references to the 'existential threat to polar bears' (2016: 20) posed by climate change and the melting of the glaciers; an oblique undeveloped reference to 'new forms of understanding and caring for nature', potentially emerging from recognition of climate change as a 'global risk to all civilization' (2016: 46); a brief reference to 'declining fisheries… [and] species extinction' (2016: 67); and a passing reference to the 'metamorphosis of nature into a civilizational threat' (2016: 106-7) in the course of a discussion of radiological contamination and environmental risk.

Beck claims to be rethinking the fundamental concepts into which current discourses on climate change are contained. However, the rethinking does not extend in any meaningfully effective way beyond the world of humanity. Where there is a consideration of the notion of the Anthropocene

[4] For three decades a number of the leading global fossil fuel companies, including 'Chevron, ConocoPhillips, ExxonMobil, and Peabody Energy' have sought to promote their political objectives and maintain profits by engaging in disinformation practices designed to distort climate science findings, deceive the public, and block policies designed to hasten… transition to a clean energy economy. Their tactics have included collusion, the use of front groups to hide companies' influence and avoid accountability, and the secret funding of purportedly independent scientists (Mulvey, Shulman, Anderson, Cole, Piepenburg, and Sideris, 2015). See also InfluenceMap Report (2019) 'Big oil's real agenda on climate change: how the oil majors have spent $1 billion since Paris on narrative capture and lobbying on climate' (https://influencemap.org/report/How-Big-Oil-Continues-to-Oppose-the-Paris-Agreement-38212275958aa21196dae3b76220bddc (accessed 13/5/19)

discussion is confined to social class inequalities in experiences of global risks, which is an important matter, but inequalities and injustices arising from the Anthropocene are not limited to one species. To the contrary, the fates of multiple, if not all, species are now closely articulated as is inadvertently illustrated by Beck's (2016: 97) consideration of perspectives on radiation risk in a chapter with the ironic subtitle 'politics of invisibility'. In his discussion of radiological contamination in the period since the nuclear accident in 1986 in Chernobyl, Beck discusses the various unequally distributed risk positions people occupy as a consequence of lack of awareness, different perspectives on radiation risk, and living with 'invisible unknown risks'. But there is no consideration of the 'Anthropocene positions' and risks imposed upon other species, merely the comment that there has been a 'metamorphosis of nature into a civilizational threat' and related observations on cows grazing on contaminated pastures leading to the production of radionuclides in milk and dairy products (2016: 105: 106).

The metamorphosis of the multiplicity of nonhuman worlds that are inextricably articulated with the world of 'humanity' and suffer extensively from the consequences and injustices it delivers, including destruction and degradation of habitats and extinction of species through exploitation, pollution, and reduction of survival and reproduction rates, is not addressed in Beck's analysis (Ceballos, Ehrlich, and Dirzo, 2017; Peggs, 2012). The lack of significance accorded to the impact of humanity on biodiversity and ecosystems is exemplified by the brief dismissal of 'sustainability' as an 'umbrella' term and as 'a new meta-discourse of urban planning embedding all sorts of value conflicts' (Beck, 2016: 180).

Questions Beck (2016: 181) poses towards the conclusion of his text consider the challenge climate change represents to democracy:

'How much climate change can democracy endure? How much democracy does climate protection require? How is democracy possible in a time of climate change?'

The unpacking of the questions leads to an interesting proposal, a reinvention of democracy rooted in the polis, a (re)turn to the city, specifically to global cities as potential sites for the generation of 'alternative communities of shared risk', but despite references to cities as sites of 'experimentation' and 'new forms of climate citizenship' (Beck, 2016: 182) there is no recognition of the multiplicity of nonhuman communities exposed to and sharing involuntarily in the risks of climate change. Throughout Beck's analysis is vulnerable to the charge that it is one-species-dimensional, an exemplification of anthropocentrism. The disconnection of humans from nature, the division between human and non-human, and the elevation of human self-interest and consumerist values, as Clive Hamilton (2010: 152: 226) has argued, makes it much more difficult to meet 'our obligations to our fellow humans and the wider natural world' and impedes an effective response to the climate emergency. Beck's (2007) contention that the politics of climate change necessarily has to be 'inclusive and global' is correct but inclusivity has to go beyond humanity to encompass other species and the ecosystems on which we all depend.

The political economy of unsustainability and environmental injustice

To date international agencies and national governments, including liberal democratic systems of government, have not proven to be effective in tackling climate change, to the contrary greenhouse gas emissions have accelerated (Triffitt and Mcleod, 2015; Di Paolo and Jamieson, 2018). The overriding priority for national governments has been, and continues to be, the short-term wellbeing of their economies — economic growth, capital accumulation, the profitability of businesses, and increasing consumption — in effect, business as usual, which is detrimental to, and in so many ways destructive of multiple species, biodiversity, ecosystems and the environment (Magdoff and Foster, 2010: 11). Management of the conditions conducive to the prevailing economic growth interests and necessities of globalized capital is a longstanding feature of liberal democratic governments, a significant source of their legitimacy, but also a powerful impediment to the introduction and implementation of the radical environmental

policies now urgently required (Rancière, 1998: 113; Kuttner, 2018; Klein, 2019).

In respect of the climate emergency, extending democratic procedures and mechanisms into the economy will not generate the changes required. As far as the environment is concerned, capitalism is *the* determining global reality, in the final instance it is the routine operation of a now globalised capitalist economy that has precipitated the environmental difficulties and risks now encountered, threatening 'the survival of life on Earth as we know it' (Park, 2015: 202). Growth is an intrinsic and necessary constituent of capitalism, it is in its DNA, and perpetual growth is, as Serge Latouche (2009: 3) confirms, 'incompatible with a finite world'. Latouche sums up our predicament concisely: 'A generalized capitalism cannot but destroy the planet' (2010: 91), a proposition for which a wealth of evidence already exists and more is rapidly accumulating (Shearman and Smith, 2007; Hamilton, 2010; Klein, 2015; Park, 2015; Wright and Nyberg, 2015; Rich, 2019).

Moreover, in so far as the state operates to facilitate the reproduction and accumulation of capital, it is difficult to see how the radical changes that are necessary can be delivered through the democratic mechanisms that are a part of the state apparatus (Mitchell 2009). As Zizek has suggested, the idea that democratic mechanisms constitute 'the only framework for all possible change … prevents any radical transformation of capitalist relations' (2010: 450). As the slow and generally ineffective policy responses to the scientific evidence on climate change and biodiversity decline illustrate, it is the interests of capital that state political elites generally tend to favour, protect, and promote, and they seem 'unable and/or unwilling to control and regulate capital even when the very survival of the human race is ultimately at stake' (Zizek, 2010: 334). Reflecting on the impasse in which we find ourselves, Frederic Jameson's comment on the stark consequences of the commercial transformation of the globe seems particularly apposite: 'Someone once said that it is easier to imagine the end of the world than to imagine the end of capitalism' (2003: 76).

This is the terrain that Blühdorn designates as the politics of unsustainability, not a new politics that is 'post-democratic', but rather a form of politics that is inextricably bound up with the interests of capital, pursuit of economic growth and cultivation of a culture of consumerism. The emergence of the global climate emergency and biodiversity loss as matters of increasing concern have exposed the limitations of liberal systems of democratic governance to engage with the unsustainability of modernity and the environmental injustices inflicted on human and nonhuman animal communities. On the one hand in late modern capitalist societies there is the pivotal position occupied by consumer needs, desires, and expectations, the association of quality of life and wellbeing with material goods, services, and experiences and 'ways must be found to meet them', but on the other hand there is the growing sense that a radical cultural and 'structural transformation of modern capitalist consumer society' is necessary to avert the prospect of ecological catastrophe (Blühdorn, 2013: 20).

Notwithstanding the compelling scientific evidence and images of a climate emergency, biodiversity decline, and environmental injustices affecting human and nonhuman animal communities, the socio-economic structures of late modern capitalism and associated consumer lifestyles not only endure but are proliferating and by so doing impede further the prospect of initiating policies and programmes of action that are vitally necessary to limit the impact of anthropogenic climate change. As the *Financial Times* (2019: 22) warned in its critical consideration of continuing increases in global carbon emissions 'Leaders have yet to grasp enormity of climate task'.

Liberal democratic political systems, with their emphasis on freedom, individualism, choice, and negotiation in respect of present and short-term future matters, are ill-prepared and ill-equipped to address what Blühdorn (2013: 23) terms non-negotiable 'categorical environmental imperatives' and unable to 'represent future generations, non-human species and everything else that has no political voice'. Sustaining, if not enhancing and expanding, current consumer

lifestyles, which is the default setting of liberal democratic political systems, is possible, as Blühdorn (2013: 30) contends, 'only at the cost of increasing social injustice and accelerated environmental exploitation'. The interest group politics at the heart of liberal democratic systems of governance is not compatible with the environmental imperatives required to address the climate emergency and biodiversity loss. Liberal democracy, prioritising individual self-interest, unfettered consumer choice, and personal ownership, and the ecologically unsustainable global capitalist economic system it has serviced and depends upon, is where the problem resides (Shearman and Smith, 2007).

Environmental justice and Levinasian ethics

Key features of capitalism, notably perpetual pursuit of economic growth, an overly expansive consumer culture, and increasing appropriation of finite natural resources, have led to long-term, unintended, seemingly irreversible, detrimental processes of transformation affecting the Earth's climate, biodiversity, and ecosystems. In addition, the globalisation of capitalism has led to increasing disparities in wealth, income, and ownership of productive resources, concentrated in fewer and fewer hands. In respect of wealth one estimate suggests

'the bottom half of the global population own less than 1 percent of total wealth. In sharp contrast, the richest 10 percent hold 88 percent of the world's wealth, and the top 1 percent alone account for 50 percent of global assets' (Donald and Martens, 2018: 41-2).

In their response to such consequences Magdoff and Foster argue that to allow for poorer countries to grow their economies and increase their wealth overall global economic expansion needs to be reduced, if not curtailed. Replacing the current unsustainable form of modernity, driven by global capitalism's pursuit of endless accumulation, by an alternative sustainable form of development will mean replacing the pursuit of seemingly limitless material and experiential consumption for a growing global consumer class by a far more materially modest and simpler way of life where there is '*enough* for everyone and no more' (Magdoff and Foster, 2010: 15; Schor, 2011). To begin to move towards this alternative the logic of capitalism, the organisation of productive activity in terms of private ownership, capital accumulation and market forces, has to be more openly challenged, its detrimental social and environmental consequences made explicit, and the prevailing mode of production and consumption replaced. In turn, a basic presupposition of liberal democracy, notably that benefits are promised and/or accrue to current generations of citizens, needs to be challenged and overturned in preference to 'those who do not vote because they do not yet exist (or live in different countries or are not human)' (Di Paolo and Jamieson, 2018: 420). This will be very difficult to achieve and will necessitate 'new forms of democracy… with emphasis on our [ethical and environmental] responsibilities to each other, to one's own community as well as to communities around the world' (Magdoff and Foster, 2010: 16), including other-than-human communities with whose fate our human existence is inextricably articulated.

The action that needs to be taken is revolutionary in form, in scale and scope, a radical reappraisal of longstanding and deeply embedded assumptions and practices in respect of modern forms of life, of economic production and consumption, and a recognition of the frequently occluded and/or insufficiently regarded complex relationships and essential interdependencies between species and ecosystems (McKie, 2019). What is required is an overturning of the priority accorded to current conceptions, expressions and enactments of national and individual self-interest in preference for environmental ethics, an ethical care, concern and responsibility for and towards *all* others, the constitution of an ethical foundation to a global-political re-ordering of life that is inclusive of not only 'human others… but also other than human persons such as other animals, plants, rocks, and other entities' (Davy, 2007: 39) because, as we know, our fates are inextricably interconnected. Consider as one pertinent example the growing concern over the global decline of biodiversity, including 'the decline in health, and in numbers, of pollinating insects', a taken for granted 'labour force', which is inextricably associated with food crop production, with anthropogenic 'business as-

usual' (Marshman, Blay-Palmer, and Landman, 2019: 1; see also FAO, 2019; IPBES, 2019; Hallman, et al 2017).

In this context, Barbara Davy has proposed developing Emmanuel Levinas's notion of the primacy of an 'ethical responsibility towards the other' (Levinas and Kearney, 1986: 29) beyond the proximity of face-to-face relations between humans, 'beyond the interhuman toward a Levinasian environmental ethic' (Davy, 2007: 40). In outlining the possibility of extending the ethical reach of Levinas's work to nonhuman and other entities Davy argues that what is required for 'interspecies ethics is not a transcendence of animality or nature, but a transcendence of anthropocentrism' (2007: 46). What is proposed is an ethical-political governing of life that encompasses species relations and the environment and in that sense 'is already a question of justice' (Davy, 2007: 45). It is environmental ethics as 'first philosophy' or 'ethics for a more than human world' (Davy, 2007: 48) that is implied, the need to be actively engaged and vigilant in respect of ecological concerns such as climate change and biodiversity, exercising responsibility as 'an incessant watching over of the other' (Levinas and Kearney, 1986: 30), where the other encompasses human and nonhuman animals, insects, plant life and the environment we all share and depend upon.

What is being invoked here is the need to move away from the differentiation or separation of human culture from a constituted 'nature', away from a reduction of the Other to the status of possession, resource or commodity for human exploitation and use, to a recognition of our (human animal) responsibilities and ethical obligations towards the Other. Humans are called to responsibility by nonhuman others, as Davy has noted:

'Is it not our possession of the world in a very literal sense that is called into question by nonhuman others? Our possession, control, pollution and usurpation of the whole planet is called into question by the expressions of nonhuman others' (2007: 59).

Levinas's thought provides an appropriate foundation for 'critical environmental reflection' necessary for the generation of a policy discourse and practice of environmental or ecological justice that is not diminished by or subservient to anthropocentric assumptions prioritising human rights and entitlements above those of other species (Nelson, 2012: 131; see also Kopnina, 2014: 7).

Concluding remarks: listening to the science, speaking for the cosmos

In his discussion of the positive possibilities that might as 'side effects', through processes of metamorphosis, emerge from the potentially catastrophic character of the global climate risks of industrial capitalist modernity, Ulrich Beck (2016: 37) provides an opening, a clearing, 'to rethink fundamental questions', but the rethink needs to be more expansive and inclusive. Beck's (2016: 35) observation that 'Living in suicidal modernity (capitalism), the black box of fundamental political questions is reopening' reflects how many critical analysts view the current situation. However, his response to the question 'Who speaks for 'the cosmos'? (2016: 35) ultimately falls short of a rethinking of the fundamentals and does not generate an understanding of the cosmos as worldly life inclusive of all species, living beings and matter. More than humanity needs to be represented. It is not enough to speak for one's own kind. Speaking for the cosmos means giving voice to human and nonhuman animal species, plants, rocks and other entities (Davy 2007). As Donna Haraway (2018: 102) has recognised, 'There can be no environmental justice or ecological reworlding without multispecies environmental justice and that means nurturing and inventing enduring multispecies — human and nonhuman — kindreds'.

Given the failure to date of national and international political institutions to respond effectively to scientific expertise on the climate emergency and loss of biodiversity and ecosystems, the prospect of what Timothy Mitchell (2009) calls 'carbon' democracies making the necessary multilateral, cooperative, long-term commitments to radically reform and regulate social and economic life to contain climate change and make possible a sustainable future is, at best,

in the balance. Scientific evidence and cautions about the environmental consequences of fossil fuel use and rising levels of CO2 emissions have been accumulating for many decades. The twenty warmest years have occurred in the past twenty-two years, Arctic sea-ice and the Greenland ice-sheet are melting faster than anticipated, oceans are warming, and sea levels rising, yet global fossil fuel extraction, economic production, and consumption are continuing to increase, as are CO2 emissions, to a record high in 2018 (Ritchie and Roser, 2019; UNEP 2018). As Charlie Gardner and Claire Wordley caution, the warnings scientists have provided on the climate and ecosystem crises have not led to effective forms of political action and continuing along 'current business-as-usual pathways [will mean] global heating will cause a temperature increase of 2.0-4.9C by 2100' (2019: 1271).

We have the scientific evidence. Images of the transformation of the planet associated with global warming proliferate in news media and online. We see increases in the melting of ice and glaciers in the Arctic and Greenland; droughts across Southern Africa, the Sahel region of Africa, southern Asia, the Mediterranean, and the U.S. Southwest; wildfires in Western US, Europe, Bolivia, Brazil, Australia and Siberia; extreme weather events, coastal and river flooding around the world; and increasing signs of the damaging impact on human and nonhuman animals, biodiversity, and ecosystem services. What is required is global agreement on concerted courses of action to promote the possibility of containing climate change, in particular 'a massive global mobilisation of resources… in the coming decade to build a zero-emissions industrial system' (Spratt and Dunlop, 2019: 10), along with mitigation measures, adaptation of infrastructure, and importantly remedial action to deal with the consequences of our carbon legacy. We are already locked into significant increases in global temperature with consequences for all species, for human and nonhuman animal communities. The impact of our past and present fossil-fuelled modern lifestyles, our CO2 footprint, will continue to affect climate conditions and surviving human and nonhuman animals, insects, plant life and their shared environment and ecosystem services long into the future. As David Archer (2009: 1:11) acknowledges:

'The climatic impacts of releasing fossil fuel CO2 to the atmosphere will last longer than Stonehenge, longer than time capsules, longer than nuclear waste, far longer than the age of human civilization so far… The lifetime of fossil fuel CO2 in the atmosphere is a few centuries, plus 25 percent that lasts essentially forever.'

In geological time scales we are effectively at the beginning of anthropogenic climate change which will continue for as long as CO2 and other greenhouse gases are released into the atmosphere, with the heating effect from emissions lasting 'effectively forever' (Inman 2008: 158). Democratic political decisions are generally conceived, planned, and implemented to comply with and be effective in relation to electoral time cycles and the interests of existing electorates. However, in respect of the consequences of climate change the temporal frame of reference and interests considered have to be significantly extended in duration and scope to encompass the wellbeing of generations of people yet to be born, as well as citizens from other countries, and multiple species of nonhumans and ecosystem services. Can democratic political institutions summon the political will to respond urgently and effectively to the climate emergency by implementing policies to reduce carbon emissions to net zero well before 2050? To do so it will be necessary to radically transform the fossil-fuelled growth dependent global economy, curb consumerism, and implement ethical environmental policies promoting environmental justice for all species.

Given the gravity and urgency of the global climate emergency, the ponderous performance and at times counterproductive pattern of governmental and corporate responses, mitigation of and adaptation to runaway climate change rather than a future restoration of some level of ecological sustainability may be the best that can be achieved. The public has already responded to the global climate emergency, biodiversity and ecosystem crises with marches, strikes, and acts of civil disobedience and nonviolent resistance. The scale and scope of the

transformations necessary to reduce emissions to zero, promote environmental justice, and increase the possibility of sustainability, require rapid radical political and economic changes that will only be achievable by involving the public in climate emergency policy responses via citizen assemblies, educational institutions, local councils and communities, and relevant campaign organisations.

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