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A legal paradigm shift towards climate justice in the Anthropocene

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Abstract

Business as usual is widely acknowledged as the main driver of ecological collapse and climate breakdown, but less attention is paid to the role of law as usual as an impediment to climate justice. This article analyses how domestic and international environmental law facilitate injustices against living entities and nature. It calls for a paradigm shift in legal theory, practice and teaching to reflect the scale and urgency of the unfolding ecological catastrophe. Section 2 outlines the links between climatic harms and climate injustices. This is followed by discussions of unsustainable law and economic development in sections 3 and 4. Section 5 examines the potential contribution of new materialist legal theory in bringing about a legal paradigm shift that reflects the jurisgenerative role of nature in promoting climate justice.

Key words

Anthropocene; global heating; climate emergency; climate justice; climatic harms; paradigm shift; new materialism

Resumen

El statu quo empresarial está ampliamente considerado como el actor principal del colapso ecológico y el desastre climático, pero se presta menos atención al papel del statu quo jurídico como obstáculo a la justicia climática. Este artículo analiza cómo el derecho ambiental nacional e internacional facilita que se produzcan injusticias contra los seres vivos y la naturaleza. Pide un cambio de paradigma en la teoría, la práctica y la enseñanza del derecho, para reflejar la escala y la urgencia de la catástrofe ecológica que se está desarrollando. La sección 2 dibuja las relaciones entre el daño climático y la injusticia climática. A esto le sigue una argumentación sobre el desarrollo jurídico y económico insostenible, en las secciones 3 y 4. La sección 5 examina la contribución potencial de la nueva teoría jurídica materialista en el sentido de provocar un cambio de

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paradigma jurídico que refleje el rol jurisgenerativo de la naturaleza para promover la justicia climática.

Palabras clave

Antropoceno; calentamiento global; emergencia climática; justicia climática; daño climático; cambio de paradigma; nuevo materialismo

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1. Introduction

The Greek word *krisis* refers to a decisive turning point arising from dysfunctional social, political, economic and legal relations that facilitate and perpetuate injustices and impede fundamental systemic transformation.[1] In Antonio Gramsci's words, the "crisis consists precisely in the fact that the old is dying and the new is yet to be born. And in the interregnum, a great variety of morbid symptoms appear" (Gramsci 1971, 276). Intensifying climatic harms, persistent poverty and growing inequality are amongst the morbid systems of the unfolding climate and ecological catastrophe.[2] Nine planetary boundaries have been breached or are under threat (Rockström *et al*. 2009, Hickel 2019).[3]

The limitations of international environmental law (IEL) and the climate regime increase the difficulty of finding solutions to climate breakdown. This is reflected in the gap between ecological sustainability and the hortatory and voluntarist provisions of the Paris Agreement and the Sustainable Development Goals.[4] With global heating locked in, we have entered climate triage, in which we are confronted with agonising decisions about who treat with the limited resources available. Despite its limitations, law can play an important role in ameliorating climatic harms, protecting human rights, and seeking distributive, reparative and climate justice for the poor and vulnerable in current and future generations who are least responsible for but most at risk in the climate emergency.

The progressive contribution that law can make is enhanced to the extent that it is aligned with Earth System science and the lessons of the Anthropocene: the rupture to the Earth System caused by human activity (Hamilton 2016, 94).[5] In 2002, Nobel chemistry laureate Paul Crutzen argued that "[i]t seems appropriate to assign the term 'Anthropocene' to the present, in many ways human-dominated, geological epoch" (Crutzen 2002, 23-23).[6] Anthropogenic ecological destruction intensified during the Great Acceleration:

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[1] Isabelle Stengers (2015b, p. 47) distinguishes catastrophe from crisis in that the former designates a crisis from which there is no recovery. As she argues, in the Anthropocene there is no future in which nature can return to being merely the environment.

[2] These symptoms and their implications are identified in the warnings of the Intergovernmental Panel on Climate Change (IPCC) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (IPCC 2018, Brondizio *et al*. 2019).

[3] Four boundaries have now been crossed: climate change, loss of biosphere integrity, land-system change, altered biogeochemical cycles (phosphorus and nitrogen). The remainder are under threat: stratospheric ozone depletion, ocean acidification; freshwater use, atmospheric aerosol loading, introduction of novel entities (e.g. radioactive materials and microplastics). See Potsdam Institute for Climate Impact Research 2015.

[4] Current Nationally Determined Contributions pledges by parties to the Paris agreement are likely to lead to a global temperature rise of about 3.2 °C by the end of the century. To prevent an increase of more than 1.5 °C by 2030, emissions must fall by 7.6 per cent every year (United Nations Environment Programme – UNEP – 2019).

[5] Hamilton describes Earth System as an "integrative meta-science of the whole planet as a unified, complex, evolving system beyond the sum of its parts."

[6] In 2000, Crutzen and Eugene Stoermer had introduced the concept in the newsletter for the International Geosphere-Biosphere Programme in which they described the ways in which mankind had become a "significant geological, morphological force" (Crutzen and Stoerner 2000, 17-18). "Capitalocene" is a more appropriate term that highlights the central role of capital accumulation, especially growth, as the main

> The second half of the twentieth century is unique in the entire history of human existence on Earth. Many human activities reached take-off points sometime in the twentieth century and have accelerated sharply towards the end of the century. The last 50 years have without doubt seen the most rapid transformation of the human relationship with the natural world in the history of humankind. (Steffen *et al.* 2005, 131; see also Steffen *et al.* 2015, 81-98)

The resulting conflation of human and geological history has been legally disruptive (Fisher *et al.* 2017) and poses fundamental challenges to liberal law and theories of justice. Ecological modernisers evangelise about a "good Anthropocene" in which global climate is engineered to enable them to pursue endless growth and profit (Shellenberger and Nordhaus 2015) through some version of the oxymoronic delusion of sustainable development (Adelman 2018).[7] Growth fetishism and extractivism are so deeply hardwired into contemporary models of development that it is difficult to envisage how ecological sustainability can be achieved under capitalism (Bonneuil and Fressoz 2016). In nature, uncontrolled growth is cancerous, yet credit, debt, interest and rent – all predicated upon continuous expansion of capital – are hardwired into legal systems. It is not necessary to resort to crude reductionism to identify the ways in which law as usual promotes business as usual (Pistor 2019) and thereby creates impediments to ecological sustainability and climate justice. As Jameson (2003, 76) observes, it is easier to imagine the end of the world than the end of capitalism.

2. Climatic harms and climate injustice

A theory of climate justice must provide criteria for determining who owes what to whom and why, and how these obligations should be discharged. It must encompass and extend existing strands of environmental, distributive, gender, global, procedural and reparative justice. Three criteria for climate justice are commonly advanced in various combinations: historical responsibility, benefit, and ability to pay. All are problematic to varying degrees because justice is complicated (Moellendorf 2012, Moss 2015), but they provide a coherent basis for giving effect to the principle of common but differentiated responsibility and respective capabilities (CBDR-RC), which has been the most contentious and divisive issue in the UNFCCC (Atapattu 2016) because ascribing responsibility for climate breakdown and the national obligations that ensue go to the heart of climate justice. It is a basic tenet of justice that those who harm others have a duty to correct or repair the harm – to the extent that this is possible under global heating. Large historical emitters have proportionately greater obligations to assist poorer countries despite the fast-growing emissions of rapidly industrialising countries. This is justifiable because there is a close correlation between historical emissions, the benefits derived from carbon-based industrialisation, and the wealth and ability to provide financial and other resources to less developed countries for adaptation, mitigation and climatic loss and damage.

Countries with the greatest historical responsibility are likely to have derived benefits that are tangible and intangible, including sophisticated infrastructure, high standards of living, intellectual property and state of the art technologies, and relatively strong

driver of ecological destruction. I use "the Anthropocene" because it is a concept now widely used in academic and public discourse.

[7] On the bizarreness of a good Anthropocene, see Hamilton 2015.

adaptive capacities. In turn, the beneficiary principle underpins the ability to pay principle. The wealth accrued through carbon-based industrialisation obliges developed countries to transfer financial and other resources to less developed countries require for adaptation, mitigation and loss and damage from climatic harms. Assistance in kind includes a right to relocation and resettlement for citizens of small island developing states threatened by rising sea levels and other victims of slow and rapid onset climatic harms.

2. Unsustainable law

If business as usual is the main driver of environmental collapse and the spread of zoonotic viruses, law as usual is its able abettor.[8] By protecting property (both private and sovereign) and polluters more than the planet, legal systems have historically legitimised and naturalised ecological destruction (Adelman forthcoming 2021). IEL is too often hortatory, voluntarist and unenforceable. As a consequence, the link between law and climate justice is often tenuous or non-existent, especially when law is antithetical to a safe, healthy, ecologically sustainable environment that is a precondition for all forms of justice.

Law's content – its rules and doctrine – and its form create substantial obstacles to sustainability (Grear 2015). This has generated a growing wave of critiques of IEL's ineffectiveness, lack of normative ambition and misalignment with Earth System science (French and Kotzé 2019, Kotzé 2019). Critical scholars and innovative practitioners are seeking ways of overcoming impediments that are deeply entrenched in the law.[9] Law is a central part of the problem but also potentially part of the solution if we are able to exploit its many contradictions to close the gap between what it promises and delivers. This requires more than effective legislation and enforcement; it requires a paradigm shift in ways we think about, teach and practice law.

Signatories to multilateral environmental agreements could take a meaningful step towards climate justice by giving effect to the precautionary, polluter pays and other core principles of IEL, not least giving substance to common but differentiated responsibilities and respective capabilities (CBDR-RC) so that states with the greatest historical responsibility for greenhouse gas emissions discharge their ecological debts to the global South. The Paris Agreement is binding but unenforceable in relation to emissions and climate finance, and the SDGs lack both resources and means of enforcement. Taking IEL seriously requires the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts to become a channel for compensation and reparative justice rather than a technocratic, depoliticised neoliberal, insurance-based mechanism. In short, a precondition for climate justice is closing the gap between exhortation and effectiveness so that polluters pay and precaution trumps profit.

Law's default position is the defence of private property owners and sovereigns; it is therefore generally inimical to ecologically sustainable forms of governance such as

[8] On growth fetishism, see Hamilton 2003 and Fioramonti 2013. On zoonotic transmission of viruses, see Kaplan 2020.

[9] In relation to climate litigation these include causation, jurisdiction, standing, and the costs and length of litigation (International Bar Association – IBA – 2020, ch. III).

commons (Grear 2012). Company law limits corporate liability, prioritises the interests of shareholders over other stakeholders including the wider public, and promotes profit and short-termism over sustainability and climate justice. Generations of law students have been inculcated with the belief that ecological destruction is an inevitable by-product of law's logic and Hayekian catallaxy rather than human choice (Hayek 1978). Grear (2014) argues that the Anthropocene is both an ecological crisis and a crisis of hierarchy signified by the existential divide between those with access to law and climate justice and the majority with none.

To close this divide, law must address the axiological, onto-epistemological and ethical challenges of the Anthropocene that flow from climatic material harms. Modern Western law is replete with Cartesian dualisms, hierarchies, and the bordered, exclusionary tropes of Eurocentric rationality (Grear 2014).[10] To this end, law must overcome the deep anthropocentrism that scars it without lapsing into an equally sterile form of ecocentrism in order to reflect the co-dependence of humans, ecosystems and other species. As Voigt observes:

> There have been attempts to extend the liberal theory of justice to humans' relationship with the inanimate world, even to the biosphere as such. But justice in this sense is generally not concerned about responsibility for – let alone the direct rights and interests of – the planet. Rather, the preservation of the earth in a healthy state is seen as primarily and instrumentally essential for the future life of humans. A duty towards the planet as such is, in this context, an indirect one; the direct duty being towards future people. (Voigt 2005, pp. 123-124)

Paradoxically, law must therefore decentre humanity at the same time even as it acknowledges their hyper-agency and telluric power by imposing new forms of responsibilisation and response-ability.[11]

Law is depicted as neutral, objective and impartial, but scratching its carapace exposes its foundational myths and the vices of formalism, positivism and mechanistic jurisprudence (Capra and Mattei 2015). Combining Baconian and Cartesian elements, law treats nature as set of objects to be tamed in the pursuit of growth and profit through epistemologies and technologies of mastery (Code 2006, Adelman 2015). The nature-society dualism is antithetical to climate justice, which is contingent upon a healthy biosphere. It is reductionist in that it reduces ecological destruction to discrete environmental harms susceptible to technocratic, depoliticised "solutions" rather than interconnected parts of a common biosphere. It is hierarchical and exclusionary because it subordinates and others nature. It promotes an instrumentalist and mechanistic view of nature that deeply penetrates the law. Law's complicity in the death of nature produced by Western science produces (Merchant 1998) accounts for the difficulty of incorporating Earth System science into IEL. Throughout modernity, law has treated nature as inert rather than the location of the interactions of multiple agents with varying

[10] Timothy Morton (2013) describes global heating as a hyperobject, a human-nonhuman assemblage so massively distributed in time and space that it transcends spatiotemporal specificity and whose local manifestations cannot reveal its totality.

[11] For Donna Haraway (2008), response-ability is the ability of humans and animals to interact and respond to each other in bodily, physical ways. It is fundamental to animal-human relationality and notions of what is just and unjust.

degrees of consciousness whose agency perpetually inflects the law. Law elides nature's agency.

The danger implicit in the Anthropocene is that highlighting the consequences of human hyper-agency perversely strengthens tropes of Promethean human exceptionalism increasingly powerless in the face of nature that was presumed to have been tamed. Human beings remain at the centre of environments from which they are radically separated, reinforcing the Cartesian divide between nature and society that must be bridged as a precondition for sustainability and climate justice. Anthropos is thus portrayed as an increasingly disempowered hyper-agent. This paradox arises from mechanistic Baconian conceptions of nature and epistemologies of master and domination deeply rooted in law (Adelman 2015).

Discourses of closure, silencing and exclusion were foundational to modern Western law. In this it reflects the construction of European identity as the inverse of the excluded Other (Fitzpatrick 2002, Santos 2002). Those deemed to lack the rationality of autonomous Kantian subjects were excluded from full legal personhood, and nature's supposed inertness and lack of agency relegated it to the bottom of an anthropocentric hierarchy, below blacks, slaves and women. As numerous ecofeminists have argued, disembodiment is a core aspect of liberal legalism symbolised by abstract legal personhood apotheosised in the corporate form. Anna Grear (2018, p. 132) argues that ecologically destructive activities, especially those of corporations, are underpinned by "a philosophy (and a politics) of *disembodiment* intrinsically connected to reason and its privileged subject". Val Plumwood and Lorrain Code emphasise the significance of embeddedness, situatedness, re-embodying the self, and the importance of reconnecting law to corporeal beings.[12] Amongst law's contradictions is its facility of endowing disembodied actors such as corporations with agency and rights while them to living entities – the victims on the other side of the Anthropocene-Capitalocene abyss who have rights they cannot use. Grear writes that "the entire history of the modern subject is precisely that of a knowing, separative agent who *acts upon* 'nature' (now reduced to 'the environment') as a passive backdrop to *the only real action that counts* – the exercise of 'human' (rational) agency" (Grear 2017b, p. 7; emphases in original). The abstract legal person is a decontextualized subject largely ignorant of the extent to which his agency is contingent upon that of non-human actants. This leads Davies to contend that law must be "rehabilitated from the sphere of abstract rationality to a spatial, material, and embodied existence" (Davies 2017, p. 106). It seems clear that the climate is not merely an object of negotiation and techno-scientific management in the UNFCCC but the central actant.

How should we understand the legal agency of a nature inextricably entangled with human activities in geohistory? A nature comprised of hundreds of thousands of "sub-agents" such as rising sea levels, tropical storms and biota? A necessary precondition is to eschew the nature-culture dualism in favour of the concept of natureculture. Bruno Latour maintains that the conception of nature that emerges from the Cartesian binary

[12] Diana Coole and Samantha Frost (2010, p. 1) rhetorically ask how can we be anything other than materialists in light of the "massive materiality" that comprises our embodied condition as human animals embedded in assemblages of dependencies and relations with other species and forms of matter? See also Plumwood (1993) and Code (2006).

is so contrived that "*political ecology has nothing to do with nature*" (Latour 2004, p. 5; emphasis in original). It underpins the Modernist Constitution that based upon an ontological split between society and nature which is refuted by the real history of Western societies – the interaction of purification and hybridisation (Wood 2018, p. 99). Purification involves the separation of the human world from the world of things and the construction of nature as a separate entity. Nature is then treated as a domain of mechanistic or biological causality whereas culture/society is an autonomous domain of linguistic or social constructivism free from nature's determinism. Nature is turned into the environment, the place "over there" that surrounds us but does not determine our destiny. Since nature and society cannot be severed, the West has never been "modern" (Latour 1993) and the social world has never been pure because it is ineluctably a realm of hybridisation and networks in which non-human matter is an actant (Latour 2009).[13]

The scale of the problem is demonstrated by the history modern Western law, which was constructed upon Cartesian division of nature and society. The progenitors of international law rationalised colonial appropriation and expropriation through the myth of *terrae nullius* and generated a system of rules designed to legitimise unequal ecological exchange (Anghie 2007, Adelman 2017b, Linarelli *et al*. 2018).[14] IEL has always been more concerned with regulating accumulation than achieving sustainability: polluters rarely pay the full social costs of their harms, countries regularly violate the no-harm rule, the precautionary principle appears to be inapplicable to greenhouse gas emissions; and sustainable development has been sustainably unfriendly to the environment (Adelman 2018). At the very least, taking IEL seriously requires states and courts to make its rules, norms and principles effective and enforceable – a Sisyphean task made more difficult by the sovereign exceptionalism that characterises the dysfunctionality of contemporary global governance. IEL has never come close to resolving the contradiction between territorially bounded Westphalian rationality and the transboundary nature of global capital and global heating. In the hands of Bolsonaro and Trump, the right to permanent sovereignty over natural resources provides immunity and impunity (Hope 2019) as law is deployed as weapon of mass environmental destruction.

We are thus confronted with the paradox of having too much law that achieves too little but requiring it when it does not exist – a problem highlighted by the proliferation of human rights.[15] Law appears to be indispensable despite or, perhaps more accurately, precisely because of its inadequacies. We thus find ourselves in a Catch-22 predicament in which both the presence and absence of law is inimical to ecological sustainability and to climate justice. The millions who will be displaced by global heating currently have little protection under international law refugee law and international human rights law

[13] In Latour's Actor Network Theory (ANT), agency may be attributed to any object or "actant" constituted in an assemblage or web of materially heterogenous relations. Latour (2009) praises James Lovelock's understanding of the interrelationships between human and other that living beings in his conception of Gaia. See also Stengers 2015a.

[14] On unequal ecological exchange see Roberts and Parks 2009, Hornborg 2011 and Gonzalez 2021 (in this issue).

[15] Giorgio Agamben (1998, 2005) demonstrated the legalisation of lawlessness in states of exception through the inclusion of individuals in law in order to exclude them from it. Climate breakdown is a global state of exception in which the law applies in its inapplicability.

(McAdam 2010, 2011) and there is little prospect of that a dedicated international instrument.[16] The Paris Agreement is a distillation of these contradictions. It is binding but voluntary; human rights are included but confined to the preamble; article 5 addresses deforestation without stopping it; and article 8 recognises loss and damage but provides no right to compensation or to relocation and resettlement – a necessity for small island developing states threatened by rising sea levels.[17] The Agreement is not a charter for climate justice – as Walter Benjamin (1968, p. 258) observed, "[t]here is no document of civilization which is not at the same time a document of barbarism".[18]

Climate justice depends upon law designed to hold states and corporations accountable for pollution and rights violations and its enforcement by courts willing to acknowledge public alarm about global heating. A wide range of law is being deployed in climate litigation, including include multilateral environmental agreements, constitutional and human rights law, tort and public trust doctrine (Setzer and Byrnes 2019, Setzer and Vanhala 2019). Landmark decisions such as *Ashgar Leghari* (2015) *Urgenda* (2019) and the Heathrow runway case (*R v Secretary of State and others*, 2019) suggest that courts can be swayed by rights-based arguments and to give efficacy to the Paris Agreement. The 2017 Advisory Opinion of Inter-American Court of Human Rights demonstrated a willingness to extend the scope of IEL. *Urgenda* and the Heathrow case indicate that the Paris Agreement may be more enforceable than its voluntarist structure suggests.

In *Urgenda*, the Netherlands Supreme Court held that the no harm rule imposes a duty on states to prevent climatic harms. It decided that reducing emissions is a common but differentiated responsibility that cannot be evaded by pointing to the failure of other countries. Since "partial causation justifies partial responsibility" even small reductions in national emissions should not be regarded as negligible.[19] In the Heathrow case, the High Court decided that environmental impact assessments must encompass to climate change obligations under the Paris Agreement.[20] These cases may be positive portends for climate justice through a willingness to take IEL seriously, but *Urgenda* took seven years to decide and we are running out of time. According to the IPCC we have less than a decade to prevent global temperature from increasing by more than 1.5 °C above preindustrial levels (IPCC 2018).

As our climate breaks down, there will be more significant decisions that narrow the mismatch between what IEL promises and what it delivers, between sustainable development and ecological sustainability. Climate justice will not be achieved on a

[16] A potentially positive development is contained in the finding by the UN Human Rights Committee that countries cannot deport people who seek asylum due to climate-related threats (UN Human Rights Committee 2020).

[17] Paragraph 52 of the Paris Decision enacting the Paris Agreement explicitly excludes liability and compensation for loss and damage at the behest of developed countries seeking to closing routes to reparative justice in domestic courts.

[18] The preamble, in language verging upon the contemptuous, notes "the importance *for some* of the concept of 'climate justice', when taking action to address climate change" (emphasis added).

[19] It is possible that this decision may form the basis for proportional liability and compensation by the Netherlands for climatic harms such as loss and damage even though the case concerned injunctive relief rather than damages (Nollkaemper and Burgers 2020).

[20] See also the Thabametsi case in South Africa: *Earthlife Africa Johannesburg v Minister of Environmental Affairs & Others* (2017).

piecemeal basis but only through a thoroughgoing onto-epistemological paradigm shift that reflects the scale and urgency of the Anthropocene-Capitalocene.

3. Un-Sustainable development

Sustainable development became a core component of IEL with the Brundtland Commission's report to the World Conference on Environment and Development in 1987 (WCED 1987). *Our Common Future* argued that endless economic growth in pursuit of social justice is compatible with a healthy environment, the so-called triple bottom line. The Brundtland definition – "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987, p. 43) – is the predominant concept of development despite sustained critique by postdevelopment scholars (Sachs 1992, Escobar 2011). The problem is that mainstream models of development – "one of the oldest and most powerful of all Western ideas" (Hettne 1995, p. 29) – have always been predicated upon extractive economic growth that is intrinsically destructive of the environment. Eduardo Gudynas (2011) argues that the development has repeatedly been declared dead but staggers on in zombie forms. Neoliberal globalisation has trade and primary engine of growth and development, whereas climate justice requires a *Grundnorm* of ecological sustainability as the yardstick by which economic activity is measured.

The likelihood that the Sustainable Development Goals (SDGs) will be achieved during the next decade is small, not least because the unenforceable and under-resourced.[21] As Hamilton (2003, p. 184) writes, "[t]he development mentality is the daily manifestation of growth fetishism". Law may not be a direct driver of unsustainability but does little to impede it.

If development is the problem it is inconceivable how alternative forms *of* development can offer a solution. This is the central insight offered by proponents of alternatives *to* development such varieties of *buen vivir* (living well) based upon Andean cosmovisions that promote modes of living not defined by Eurocentric notions of growth and progress – pluralistic onto-epistemologies which reject the instrumentalisation and commodification of social life and nature (Gudynas 2016, pp. 727-728), and accept the agency of non-human entities and the co-dependence of humans and nature. They promote a communitarian ethos based upon harmony with nature and respect for *Pachamama* (Mother Earth) as the source of life (Acosta 2010, Acosta and Gudynas 2011) because the wellbeing of humans, other species and nature is indivisible. *Buen vivir* "calls for a 'biocentric' understanding of life in which Nature has rights of its own and an intrinsic significance regardless of its value for human life" (Ramírez 2010, p. 24); as such, it is intrinsically oriented towards climate justice for all species and the planet. *Buen vivir* and the rights of nature have been incorporated into the constitutions of Ecuador (2008) and Bolivia (2009),[22] albeit with contradictory results. *Buen vivir* is not a simple, ready-

[21] The IPCC (2018, p. 44) drily observes that sustainable development "will be exceedingly difficult, if not imposible" without "societal transformation and rapid implementation of ambitious greenhouse gas reduction measures".

[22] The Ecuadorian Constitution (2008) guarantees the rights of *buen vivir* (articles 12–34) and grants rights to nature (articles 71–74). In Bolivia, *buen vivir* informs the 2009 Constitution, which does not grant rights to nature. However, *Pachamama* is protected under the Law of the Rights of Mother Earth (Law 071 of the Plurinational State) passed by the Plurinational Legislative Assembly on 21 December 2010 (Nuñez 2019).

made alternative to Western forms of development (Ramírez–Cendrero 2017); rather, it offers alternative ways of being, seeing and knowing – epistemologies of humility – that treat nature as a partner rather than a threat, as a living entity rather than the mere surround for human exceptionalism implied by Eurocentric notions of environment.[23]

4. Towards a paradigm shift

Andreas Philippopoulos-Mihalopoulos calls for a critical environmental law that "exerts a radical critique of traditional legal and ecological foundations, while proposing in their stead a new, mobile, material and acentric environmental legal approach" in an open ecology that "combines the natural, the human, the artificial, the legal, the scientific, the political, the economic and so on, on a plane of contingency and fluid boundaries" (Philippopoulos-Mihalopoulos 2015, p. 57). He calls for a:

> *radical theoretical reconfiguration of environmental law*, one that will no longer rely on the old semantics of environment as resource, of the human as centre, of the logocentric idolisation of public participation, of illusionary discursive consensus, of causality proven and best means measured. Only a radical rethinking that will distance itself from the above and live up to the challenge of environmental degradation will bring the kind of environmental action that is required, targeting the root rather than the symptom and assisting environmental law in its crystallisation as a truly radical legal discipline. (Philippopoulos-Mihalopoulos 2011b, p. 25; emphasis in original)

Earth jurisprudence (also known as Wild Law) aspires to such a radical reconfiguration. It correctly identifies private property as a fundamental impediment to ecological sustainability and aims to supplant anthropocentrism with a radical ecocentrism (Cullinan 2011, Burdon 2015, Howe 2017).[24] Cormac Cullinan argues that all beings have fundamental rights, including "the right to exist, to a habitat or a place to be and to participate in the evolution of the Earth community" (Cullinan 2011, p. 13). Earth jurisprudence argues that all living entities are entitled to rights and respect (Magallanes 2015, Kaufmann and Martin 2017, Cano Pecharroman 2018). Nearly fifty years after Christopher Stone asked why trees should not have rights (Stone 1972), countries as disparate as Colombia and New Zealand have demonstrated that there is no doctrinal impediment to legal protection for rivers (Krämer 2020).

To state the obvious, nature has always shaped the form and content of law, particularly through the commodification of nature as private and sovereign property. International law originated in rules designed to legitimate the appropriation of natural resources and unequal ecological exchange. But nature has been treated as a backdrop rather than an actor – as environment. Paradoxically, nature's influence increases when its agency is denied. Global heating increasingly shapes the US legal system through its absence; no other government is so obsessed about a problem whose existence it denies.

The rupture to the Earth system in the Anthropocene is law's defining feature. It disrupts all bodies of law from property, company, tort and criminal law to environmental law. Climate breakdown exposes the gap between Earth system governance and neoliberal

[23] I have chosen to focus on Andean cosmovisions but there is a growing literature on other approaches such as degrowth (see the contributions to *Capitalism Nature Socialism* 30(2), (Engel-Di Mauro 2019), steady state economics and the Green New Deal (Pettifor 2019).

[24] This risks creating an inverted nature-society dualism that I address below.

globalisation and between liberal legality and the holistic, systemic thinking needed to deal with the crisis. Actants (Latour 2009) and assemblages (Deleuze and Guattari 1988) such as rising temperatures and sea levels, warming oceans, tropical storms, wildfires and zoonotically transmitted coronaviruses possess greater agential, jurisgenerative power than legal theorists are generally willing to acknowledge.[25] As Coole and Frost (2010, p. 9) argue, "materiality is always something more than 'mere' matter: an excess, force, vitality, relationality, or difference that renders matter active, self-creative, productive, unpredictable". The facticity of inter-relational, entangled corporeality has always shaped law but rarely been acknowledge.

A central paradox of the Anthropocene is the growing powerlessness of human hyper-agents in the face of nature's agency. For some, the solution is to extend this hyper-agency through new technologies designed fix the problems caused by humanity's experiment with the climate (Hamilton 2017) such as geoengineering (Adelman 2017a). Indigenous people have always understood that violence perpetrated against nature would provoke consequences beyond human control.

Arguing that the Anthropocene compels us to abandon the sovereign-centric mental cartographies of the global and the local, Bruno Latour identifies the Terrestrial as both a new condition and the site of law and politics in the New Climatic Regime.[26] The "Terrestrial is bound to the earth and to land, but it is also *a way of worlding*, in that it aligns with no borders, transcends all identities" (Latour 2018, p. 54; emphasis in original). It is less a framework for human action than a new political actor with effects on law and justice that cannot be ignored (*Ibid.*, p. 42). The Terrestrial indicates the need for fundamentally new ways of understanding the human condition as inextricably linked to the fate of the biosphere and biodiversity; it "is literally drawing another world, as different from "nature" as from what used to be called the 'human world' or 'society'" (Latour 2018, p. 80).

Latour argues that the only way to reconnect the social and the ecological is through a system of engendering that:

> brings into confrontation agents, actors, animate beings that all have distinct capacities for reacting. It does not proceed from the same conception of materiality as the system of production, it does not lead to the same epistemology, and it does not lead to the same form of politics. It is not interested in producing goods, for humans, on the basis of resources, *but in engendering terrestrials* – not just humans but all terrestrials. (Latour 2018, pp. 82-83; emphasis in original)

The New Climatic Regime requires us to focus on the *geo-social* impacts of human activity and the social agency of nature and entails a paradigm shift from understanding "nature-as-universe" to "nature-as-process". This paradigm shift must extend to law and reflect new materialist approaches to post-anthropocentric, posthuman agency and subjectivity in the Anthropocene.

[25] Jurisgenerative refers to "the law's capacity to create a normative universe of meaning which can often escape the 'provenance of formal lawmaking'" (Benhabib 2011, p. 125).

[26] Latour contends that we must reject both the Global, the end point of the discredited project of modernity, and the Local, the fall-back position of critics of globalism. Those "who continue to flee toward the Global and those who continue to take refuge in the Local" fail to comprehend the scale of change in the geo-human history of the Anthropocene (Latour 2018, p. 51).

4.1. New materialism

In Connolly's (2011, p. 31) view, "the biggest mistake by theories of exclusive human agency is to constitute the rest of the world as if it were a set of mere objects". Materiality is not merely the matter that surrounds human activity, it has agentic capacities and effectivity (Bennett 2010, p. ix). As Coole and Frost (2010, pp. 3-4) argue, what is therefore at stake in new materialism is:

> nothing less than a challenge to some of the most basic assumptions that have underpinned the modern world, including its normative sense of the human and its beliefs about human agency, [and] (…) its material practices such as the ways we labour on, exploit and interact with nature.

New materialism thinking reveals the ways in which climate justice is linked to ontological knowledge derived from human corporeality, situated experience, and our interrelations with other living entities. Vulnerability theorists such as Martha Fineman argue that justice should be grounded in an understanding of the vulnerability of individuals embedded in nature rather than the invulnerable, fictitious Kantian subject of liberal legality (Fineman 2013).[27] New materialist approaches seek to overturn the anthropocentrism-ecocentrism binary by problematizing nature in an immersive entanglement within "incalculable, interconnected material agencies that erode even our most sophisticated modes of understanding" (Alaimo 2010, p. 124).

New materialism challenges a foundational myth of positive law, the notion that humans are the sole source of law because it disturbs "the conventional sense that agents are exclusively humans who possess cognitive abilities, intentionality and freedom to make autonomous decisions and the corollary presumption that humans have the right or ability to master nature" (Coole and Frost 2010, p. 10). As a consequence, the role of nature as a legal actor is rarely acknowledged despite the reality that biota, whether conscious or not, are continuously altering, becoming, shifting, striving (Bennett 2010) and interacting with human beings in ways that generate or modify law.[28]

New materialist thinkers such as Bennett (2004, 2010), Braidotti (2006) and Barad (2007, 2008) advance posthumanist, hybrid models in which humans share agency in relational assemblages (De Lucia 2013). Barad maintains that "*phenomena are produced through complex intra-actions of multiple material-discursive apparatuses of bodily production*" (Barad 2001, 87; emphasis in original). Material entities not as ontologically discrete but constituted in contingent relations of entanglement.

> Matter is not immutable or passive. It does not require the mark of an external force like culture or history to complete it. Matter is always already an ongoing historicity (…) matter does not refer to a fixed substance; rather, matter is substance in its intra-active becoming - not a thing, but a doing, a congealing of agency. Matter is a stabilizing and destabilizing process of iterative intra-activity. (Barad 2003, p. 822)

Thus, for Barad (2003, p. 826), "agency is cut loose from its traditional humanist orbit (…) [not] aligned with human intentionality or subjectivity" because other animate

[27] This is consistent with the intrinsic postanthropocentric tendency in environmental studies to mutate into "neomaterialist variations" (Braidotti 2017, p. 84).

[28] Bonneuil and Fressoz (2016, p. 198) argue that the Anthropocene can equally be understood as the Agnotocene, the age of wilful ignorance.

organisms; material things; spaces and places and their surrounding natural and built environments; and material forces including gravity and time have agential capacities as well as human beings and the elements from which are comprised (Fox and Alldred 2018). There is a similar spread of ontological types with agentic capacity or thing power in Bennett's vital materialism (Bennett 2004), in which "[e]dibles, commodities, storms, and metals act as quasi agents, with their own trajectories, potentialities and tendencies" (Watson 2013, p. 147).[29] It follows that "there are not organisms on one side and an environment on the other, but a coproduction by both. *Agencies* are redistributed" (Latour 2018, p. 76; emphasis in original).

The onto-epistemological challenge is to conceive ourselves as critters open to new forms of hybridisation in human-non-human networks rather than as an exceptional, solipsistic species (Haraway 2016), and thereby to overturn the anthropocentricity of Eurocentric law and rationality.[30]

Margaret Davies (2017) describes the corporeal impacts of climatic harms on humans embedded in natureculture,[31] which produces the focus of new materialism:

> on situating the human, including human meaning and human subjectivity, in a material world where all matter, living and non-living, is related, where objects have their own vitality and resistance, and where agency emerges in relation rather than as an existing quality. (Davies 2017, p. 66)

Materialist legal theory that takes the "living planet and its ecological characteristics seriously" in ways that IEL has failed to do because:

> Materialism foregrounds the undivided space of natureculture in which everything subsists – as with the material–discursive distinction with which it is related, nature–culture collapses as a distinction when we see that existence is constituted by a highly mobile relationality between humans and the entire non-human world. (Davies 2017, p. 72)

Critiques of new materialism range from pointing out its contradictions to outrage at its claims. Amongst the former is Arias-Maldonado (2015), who asks whether it is possible to reconcile the agential capacity of non-human actants with the primacy given to human beings in the Anthropocene? Do human cognition and consciousness place them at the apex of a hierarchy of agency despite their growing powerlessness? Amongst the latter, Malm (2018) furiously derides constructivist views about the death of nature. In Malm's view, only conscious actors have agency (which is not certain for non-human actors) because acting in the absence of reasons is not real agency. Condemning Vogel's (2015) literalist construction of nature as empirically false and Latour's hybridism as another form of Cartesianism, Malm approvingly cites Soper's realist definition of nature as "those material structures and processes that are *independent* of human activity (in the sense they are not a humanly created product) and whose forces and causal powers are

[29] Vogel (2015) describes the intrinsic wildness of buildings that continually change in ways that escape human control.

[30] Philippopoulos-Mihalopoulos (2011a) challenges the idea of the environment as a surrounding context with humans at its centre because there is no centre that can be occupied. Anthropocentric attempts to place humans at the centre are unsustainable in all senses of the word.

[31] The concept of natureculture is borrowed from Haraway (1997). It underpins an epistemology based upon the demolition of boundaries between animal and human, and the technological and the organic.

the necessary conditions of every human practice, and determine the possible forms it can take" (Soper 1995, pp. 132-3; emphasis added). The problem that Malm does not adequately address it that is difficult to identify any natural structures and processes unaffected by human activity or, in many cases, intensified by it.

5. Conclusion

The Anthropocene is the story – the geohistory – of an exceptional species increasingly disempowered by hubris, a tale about its escape from environmental determinism through telluric power that has summoned new forms of posthuman form environmental determinism which cannot be evaded. This trope simultaneously over-estimates human's ability to tame nature and diminishes their responsibility for seeking to do so. New materialism exposes the limits of this discourse by demonstrating the influence of non-human agents on natureculture, including law. It points to possibilities for posthuman ethics, politics and legal theory rooted in post-anthropocentric epistemologies of humility, care and stewardship informed by indigenous cosmologies and vulnerability theory – for a "relational ethics that values cross-species, transversal alliances with the productive and immanent force of *zoe*, or nonhuman life" (Braidotti 2016, p. 23). New materialism challenges the assumption that humans are the exclusive originators of law rather than the co-construction of human and non-human networks in natureculture.

Anna Grear (2017a, p. 92) argues that our understanding of environment and the grounds of environmental law's ontology is destabilised when matter evades conventional categorisations and linear conceptions of causality. Grear argues that "foregrounding material factors and reconfiguring our very understanding of matter will *necessarily* transform law's fundamental construct of 'the environment'" (*Ibid*., p. 92; emphasis in original) if we respond to the urgent need to reconceptualise what it means to be human in a climate and ecological emergency. She argues that the decentred subject "presented with a demand for epistemic humility" and reconceived as an interdependent actant in a web of dependencies opens the path to a genuine ecological epistemology Grear (2017a, p. 93).[32]

This is the path to a paradigm shift towards a materialist legal theory no longer trapped anthropocentric, binary, exclusionary, hierarchical thinking. Climate justice is impeded so long as law fails to acknowledge the ontological co-dependence of humans and nature and their interwoven wellbeing by incorporating the insights of Earth System science and the challenges of the Anthropocene-Capitalocene (Kotzé *et al*. 2021). Accepting the agentic capacities of non-human actants does not imply the abandonment of ethical responsibility. On the contrary, it calls for heightened awareness of the injustices that arise from unreflexive human agency, and new forms of responsibilisation in the form of a planetary ethics sensitive to our co-constitutive, inter-corporeal entanglements with non-human entities (Adelman 2021). New materialist reconceptualisations of matter, mattering and agency offer an expanded conception of justice in general and climate justice in particular.

[32] On the shift to a radical ecological epistemology see Haraway 2008, pp. 3-4, 11.

The COVID-19 pandemic has laid bare the scale of the ideological breakdown of neoliberal models of development, its inadequacy in the face of an existential threat that it impels and multiplies, shown that economic, political and legal orthodoxies are neither natural nor inevitable, and that the future of humanity is our choice. To avoid relapsing into the abnormal, we must think differently because climate justice will not be delivered by business and law as usual.

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