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EDITORIAL



Transnational environmental law in the Anthropocene

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ABSTRACT

Climate change, biodiversity loss, marine degradation and a pandemic have marked 2020. This article introduces a Special Issue that interrogates transnational environmental law in the context of the Anthropocene and invites reflection on the meaning and role of law in light of changing planetary realities. How law interacts with and governs the global environmental problems is a challenge that legal scholars have approached with vigour over the last decade and, more recently, the concept of the Anthropocene has become a topic that researchers have also begun to grapple with. One avenue of research that has emerged to address global environmental problems is transnational environmental law. Adopting 'transnational law' as a lens or framework through which to analyse environmental law takes a broader approach to the ways in which law may be assessed and deployed to meet global environmental challenges. The collection of articles within this Special Issue provide a timely intervention into the theoretical and practical approaches of transnational environmental law in a time of significant global uncertainty and environmental crisis.

KEYWORDS Transnational environmental law; Anthropocene; transnational law; legal theory

[L]et us call it a conflict between modern humans who believe they are alone in the Holocene, in flight towards the Global or in exodus towards the Local, and the terrestrials who know they are in the Anthropocene and who seek to cohabit with other terrestrials under the authority of a power that as yet lacks any political institution.¹

1. Towards a new planetary epoch: from Holocene to Anthropocene?

Today, some twenty years after its pronouncement,² for some, the term 'Anthropocene' has not lost its profoundness and radical

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¹ Bruno Latour, *Down To Earth: Politics in the New Climatic Regime* (Polity Press 2018).

² Paul J Crutzen and Eugene F Stoermer, 'The "Anthropocene"' (2000) 41 *IGBP Global Change Newsletter* 17; see also Paul J Crutzen, 'Geology of Mankind' (2002) 415 *Nature* 23.

potential,³ while for others, it has retained its controversial and provocative connotations.⁴ Intimating a new epoch in the history of the Earth, continued debates and current planetary developments evidence that the idea of the 'Anthropocene' has indeed not lost its relevance. At the core of Anthropocene thinking lies the proposition that humans are now so fundamentally interfering with the biological, geological and chemical systems of our planet, that the effects of these interventions are going to be felt for centuries to come.⁵ In other words, in the Anthropocene humans have morphed into 'geologic agents'⁶ who meddle with the interconnected planetary processes that make up the Earth System.⁷ This proposition aligns with recent scientific evidence, based on the concept of 'planetary boundaries',⁸ which suggests that anthropogenic impacts are causing the Earth to move beyond the stable parameters of the Holocene, the geological epoch that began after the last ice age and allowed life on Earth to flourish.⁹ While the process of formally recognising the Anthropocene as a new period in the history of the planet is ongoing,¹⁰ it is undeniable that the Earth is changing and that humans are central agents in these transformations. Importantly, however, the concept of the Anthropocene connotes not merely an extension or intensification of

³ See eg Clive Hamilton, 'Anthropocene as Rupture' (2016) *The Anthropocene Review* 93.

⁴ See eg Andreas Malm and Alf Hornborg, 'The Geology of Mankind? A Critique of the Anthropocene Narrative' (2014) *The Anthropocene Review* 62; Anna Gear, 'Deconstructing Anthropos: A Critical Legal Reflection on "Anthropocentric" Law and Anthropocene "Humanity"' (2015) *Law and Critique* 225; Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene* (Verso 2015). Critical reflections have also produced alternative names, see eg Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Duke University Press 2016). Haraway prefers the term 'Chthulucene' to 'Anthropocene': 'the Chthulucene is made up of ongoing multispecies stories and practices of becoming-with in times that remain at stake, in precarious times, in which the world is not finished and the sky has not fallen – yet ... Unlike the dominant dramas of Anthropocene ... discourse, human beings are not the only important actors in the Chthulucene, with all other beings able simply to react'. See also Jason Moore, 'The Capitalocene, Part I: On the Nature and Origins of our Ecological Crisis' (2017) *Journal of Peasant Studies* 596; Ivan Vargar Roncancio and others, 'From the Anthropocene to Mutual Thriving: An Agenda for Higher Education in the Ecozoic' (2019) 11 *Sustainability* 3312.

⁵ Will Steffen, Paul J Crutzen and John R McNeil, 'The Anthropocene: Are Humans now Overwhelming the Great Forces of Nature?' (2007) 36 *Ambio* 614.

⁶ Bruce H Wilkinson, 'Humans as Geologic Agents: A Deep-Time Perspective' (2005) *Geological Society of America* 161.

⁷ Will Steffen et al, 'Stratigraphic and Earth System Approaches to Defining the Anthropocene' (2016) *Earth's Future* 324. The Earth System is defined as 'the suite of interacting physical, chemical, and biological global-scale cycles (often called biogeochemical cycles) and energy fluxes which provide the conditions necessary for life on the planet'. It is conceptualised as a materially closed system with the sun as its external energy source; humans are understood to be part of it, see Will Steffen and others, *Global Change and the Earth System: A Planet under Pressure* (Springer 2004) 7.

⁸ See Johan Rockström et al, 'Planetary Boundaries: Exploring the Safe Operating Space for Humanity' (2009) 14 *Ecology and Society* 32; Johan Rockström et al, 'A Safe Operating Space for Humanity' (2009) 461 *Nature* 472.

⁹ Will Steffen et al, 'Trajectories of the Earth System in the Anthropocene' (2018) *Proceedings of the National Academy of Sciences in the United States of America* online: <<https://www.pnas.org/content/115/33/8252>> accessed 11 February 2020.

¹⁰ Subcommission on Quaternary Stratigraphy, 'Working Group on the "Anthropocene": Results of binding vote by AWG' (21 May 2019) online: <<http://quaternary.stratigraphy.org/working-groups/anthropocene/>> accessed 11 February 2020. See also Jan Zalasiewicz and others, 'Are we now living in the Anthropocene?' (2008) 18(2) *GSA Today* 4.

already existing pressures, but a deeper shift towards increased levels of instability, unpredictability and risk.¹¹ It is in this vein that the concept has moved beyond the natural to the social sciences and the humanities, including law.¹² Engagement with the Anthropocene narrative has prompted scholars across these disciplines to reconsider how ‘environmental’ problems are properly to be perceived, and to reflect on ensuing implications for their own disciplines and beyond.¹³ As the contributions to this Special Issue show, for legal scholarship, engaging with the Anthropocene entails confronting, head-on, theoretical, conceptual and methodological challenges. At the same time, this Special Issue demonstrates, that these challenges can be productively used to foster innovative, cross-disciplinary perspectives which enrich and refresh legal thinking.

This Special Issue of *Transnational Legal Theory*, comes after a year of environmental catastrophes, and is therefore a timely intervention. Between late 2019 and early 2020, unprecedented bush fires have had devastating impacts on the Australian continent.¹⁴ Deforestation in many countries, notably in Brazil,¹⁵ are driven primarily by interests of the agro-forestry sector and continue to severely impact biodiversity and indigenous communities, while also reducing natural carbon sinks which are so central in our efforts to mitigate climate change. Transboundary air pollution, known as ‘haze’ in South-East Asia, impacts human health, plants, water sources and even weather patterns.¹⁶ The Anthropocene also has a distinctly human

¹¹ See eg: Patrick W Keys et al, ‘Anthropocene Risk’ (2019) *Nature Sustainability* 667.

¹² See eg Jamie Lorimer, ‘The Anthropo-scene: A Guide for the Perplexed’ (2017) *Social Studies of Science* 117.

¹³ See Mark A Maslin and Simon L Lewis, ‘Anthropocene: Earth System, Geological, Philosophical and Political Paradigm Shifts’ (2015) *The Anthropocene Review* 108; Jeremy Baskin, ‘Paradigm Dressed as Epoch: The Ideology of the Anthropocene’ (2015) *Environmental Values* 9. For perspectives from legal scholarship see eg Kathleen Birrell and Julia Dehm, ‘International Law & the Humanities in the ‘Anthropocene’ in Shane Chalmers and Sundhya Pahuja (eds), *Routledge Handbook of International Law and the Humanities* (Routledge forthcoming); Tim Stephens, ‘What’s the Point of International Environmental Law Scholarship in the Anthropocene?’ in Ole W Pedersen (ed), *Perspectives on Environmental Law Scholarship: Essays on Purpose Shape and Direction* (Cambridge University Press 2018); Louis Kotzé (ed), *Environmental Law and Governance for the Anthropocene* (Hart Publishing 2017). For perspectives from the political sciences see eg Frank Biermann and Eva Löwbrand (eds), *Anthropocene Encounters: New Directions in Green Political Thinking* (Cambridge University Press 2019); Jedediah Purdy, *After Nature: A Politics for the Anthropocene* (Harvard University Press 2015). For a perspective from geography see eg Jamie Lorimer, ‘Multinatural Geographies for the Anthropocene’ (2012) *Progress in Human Geography* 593. For a historical perspective see eg Dipesh Chakrabarty, ‘The Climate of History: Four Theses’ (2009) *Critical Inquiry* 197. For a philosophical perspective see eg Bruno Latour, ‘Agency at the Time of the Anthropocene’ (2014) *New Literary History* 1.

¹⁴ Adam Morton, ‘Yes, Australia has always had bushfires: but 2019 is like nothing we’ve seen before’ *The Guardian* (24 December 2019) online: <<https://www.theguardian.com/australia-news/2019/dec/25/factcheck-why-australias-monster-2019-bushfires-are-unprecedented>> accessed 28 May 2020.

¹⁵ Herton Escobar, ‘Brazil’s Deforestation is Exploding – and 2020 will be worse’ *Science* (22 November 2019) online: <<https://www.sciencemag.org/news/2019/11/brazil-s-deforestation-exploding-and-2020-will-be-worse>> accessed 28 May 2020.

¹⁶ Heleen A. de Wit, Jean-Paul Hettelingh, Harry Harmens (eds), Trends in Ecosystem and Health Responses to Long-range Transported Atmospheric Pollutants (Norwegian Institute for Water Research, May 2016) 9; ‘Indonesia Haze: Why Do Forests Keep Burning?’ *BBC News* (16 September 2019) online:

dimension. During the first six months of 2019 alone, an estimated total of seven million people had been internally displaced by floods, cyclones, droughts, landslides and earthquakes, making mass displacement due to extreme weather events ‘the new norm’.¹⁷ Indeed, the human imprint on Earth is now such that plastics are so abundant in land, freshwater and marine environments that they ‘may be considered not only as environmental pollutants, but also as contributors to the character of recent ... and contemporary strata ... even in remote environments such as that of the deep sea floor and the polar regions’.¹⁸ And the recent spread of COVID-19 across the globe has led commentators to argue that the unfolding pandemic signals that ‘by going too far in exploiting the rest of nature, the dominant globalising culture has undone the planet’s capacity to sustain life and livelihoods’.¹⁹ It is against this background of planetary turbulence and human struggle that Holocene categories, such as ‘global’ and ‘local’, are insufficient to capture Anthropocene realities.²⁰ Rather a new dimension, the ‘Terrestrial’,²¹ has entered the political—and as the collection of articles in this Special Issue will show, also the (transnational) legal—realm.

2. Transnational environmental law in the context of the Anthropocene

From its very beginnings, transnational law has engaged with the categories of ‘global’, ‘local’ and ‘territory’—the very concepts which are challenged by Anthropocene realities. In his Storrs Lectures at Yale Law School in 1956, Jessup famously introduced the concept of ‘transnational law’ to ‘include all law which regulates actions or events that transcend national frontiers. Both public and private international law are included, as are other rules that do not wholly fit into such standard categories’.²² The burgeoning of literature regarding the ‘transnational’, as evident in the eleven years of *Transnational Legal Theory*, has among other things, encompassed new

<<https://www.bbc.co.uk/news/world-asia-34265922>> accessed 10 March 2020; ‘Air Pollution in Southeast Asia Is the Main Cause for Respiratory Disease in Children’ (*De Gruyter Science Discoveries*, 20 June 2019) online: <<https://sciencediscoveries.degruyter.com/air-pollution-southeast-asia-main-cause-respiratory-disease-children/>> accessed 10 March 2020.

¹⁷ Internal Displacement Monitoring Centre, ‘Mid-Year Figures: Internal Displacement from January to June 2019’ (12 September 2019) online: <https://www.internal-displacement.org/sites/default/files/inline-files/2019-mid-year-figures_for%20website%20upload.pdf> accessed 11 February 2020.

¹⁸ Jan Zalasiewicz et al, ‘The Geological Cycle of Plastics and their use as a Stratigraphic Indicator of the Anthropocene’ (2016) 13 *Anthropocene* 4, 14.

¹⁹ Ashish Kothari et al, ‘Coronavirus and the Crisis of the Anthropocene’ (*Ecologist*, 27 March 2020) online: <<https://theecologist.org/2020/mar/27/coronavirus-and-crisis-anthropocene>> accessed 28 May 2020. For a critical perspective on the socio-economic implications of the Anthropocene see further for example Angela P Harris, ‘The Treadmill and the Contract: A Classcrits Guide to the Anthropocene’ (2016) 5(1) *Tennessee Journal of Race, Gender & Social Justice* 1.

²⁰ Bruno Latour, *Down to Earth: Politics in the New Climatic Regime* (Polity 2018) 40.

²¹ *Ibid.*

²² Philip C Jessup, *Transnational Law* (Yale University Press 1956) 2.

methodological and conceptual lenses with which to view the law,²³ has taken account of the breaking down of barriers between the public and the private,²⁴ and the national and the international,²⁵ the erosion of state sovereignty in the context of globalisation,²⁶ and the powerful impact non-state actors may have on the domestic sphere.²⁷

Within environmental law, transnational lenses have been adopted ‘through which to study and access a deeper understanding of the relationship between law and environmental protection’,²⁸ particularly in the context of global environmental problems such as climate change and ocean degradation.²⁹ Concurrently, these global environmental problems—characterised by, among other things, their geographical scale—may be described as “wicked” problems that [defy] resolution because of the enormous interdependencies, uncertainties, circularities, and conflicting stakeholders implicated by any effort to develop a solution³⁰ and as such are ‘legally disruptive’ in nature,³¹ thus posing significant challenges for the law.

Transnational environmental law, on one approach, incorporates international law, yet widens the inquiry to include ‘all environmental norms that apply to transboundary activities or that have effects in more than one jurisdiction’.³² Lin provides a more comprehensive definition of transnational environmental law in this account, that encompasses law ‘beyond the state’ and provides a theoretical framework with which to assess environmental law

²³ eg see: Peer Zumbansen, ‘Transnational Law, Evolving’ in Jan M Smits (ed), *Elgar Encyclopaedia of Comparative Law* (2nd edn, Elgar 2012); Peer Zumbansen, ‘Transnational Law’ (Comparative Research in Law & Political Economy, Research Report No 9/2008) 24; Peer Zumbansen, ‘Defining the Space of Transnational Law: Legal Theory, Global Governance, and Legal Pluralism’ (2012) 21 *Transnational Law & Contemporary Problems* 305; Craig Scott, ‘Transnational Law as a Proto-Concept: Three Conceptions’ (2009) 10(6–7) *German Law Journal* 859; Gregory Shaffer and Daniel Bodansky, ‘Transnationalism, Unilateralism and International Law’ (2012) 1(1) *Transnational Environmental Law* 31; Gregory Shaffer and Carlos Coye, ‘From International Law to Jessup’s Transnational Law, from Transnational Law to Transnational Legal Orders’ in Peer Zumbansen (ed), *The Many Lives of Transnational Law: Critical Engagements With Jessup’s Bold Proposal* (Cambridge University Press 2020).

²⁴ eg see: Kenneth Abbott and Duncan Snidal, ‘Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit’ (2009) 42(2) *Vanderbilt Journal of Transnational Law* 501; Harriet Bulkeley and others, *Transnational Climate Change Governance* (Cambridge University Press 2014); Zumbansen, ‘Transnational Law, Evolving’, (n 23). In the context of environmental law see: Peter H Sand, ‘The Evolution of Transnational Environmental Law: Four Cases in Historical Perspective’ (2012) 1(1) *Transnational Environmental Law* 183.

²⁵ Veerle Heyvaert and Leslie-Anne Duvic-Paoli, ‘The Meanings of Transnational Environmental Law’ in Veerle Heyvaert and Leslie-Anne Duvic-Paoli (eds) *Research Handbook on Transnational Environmental Law* (Edward Elgar forthcoming).

²⁶ eg see: Shaffer and Bodansky, (n 23); Zumbansen, ‘Transnational Law, Evolving’, (n 23).

²⁷ Gregory Shaffer, ‘Transnational Legal Process and State Change’ (2012) 32(2) *Law & Social Inquiry* 229.

²⁸ Heyvaert and Duvic-Paoli, (n 25); see generally: Veerle Heyvaert and Leslie-Anne Duvic Paoli (eds) *Research Handbook on Transnational Environmental Law* (Edward Elgar forthcoming).

²⁹ Veerle Heyvaert, ‘The Transnationalization of Law: Rethinking Law through Transnational Environmental Regulation’ (2017) 6(2) *Transnational Environmental Law* 205, 206–7.

³⁰ Richard Lazarus, ‘Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future’ (2010) 40 *Environmental Law and Policy Annual Review* 10749, 107050.

³¹ Elizabeth Fisher, Eloise Scotford and Emily Barritt, ‘The Legally Disruptive Nature of Climate Change’ (2017) 80(2) *Modern Law Review* 173.

³² Shaffer and Bodansky, (n 23) 32.

and governance. Transnational environmental law, she argues ‘recognises that the state is but one of the many actors that ought to be involved in governing human actions *vis-à-vis* the environment. It also recognises the important normative contributions made by non-state actors’.³³ This transnational lens or ‘frame’ through which to view legal responses to increasingly urgent environmental problems³⁴ is a useful mechanism with which to ground the search ‘for more effective responses to the environmental calamities that threaten the wellbeing and even the survival of present and future generations’.³⁵

The study of transnational law has resulted in the emergence of widely differing conceptual and definitional approaches, that within transnational environmental law has left much unsettled.³⁶ This is evident, for instance, in terms of its understanding and use of the term ‘transnational’, by its sometime focus on the role of private or subnational actors within the governance of specific issues,³⁷ and at others the emergence of transnational regulation ‘beyond the state’,³⁸ or even the interactions between transnational legal norms and national and international law.³⁹ As Fisher noted in 2012, transnational environmental law scholarship is in its infancy, there is the need—and as the last decade has proven the appetite for—mapping the field, and attempting to understand the emergence of transnational environmental law and regulation.⁴⁰ All this is to say that the divergence of opinions regarding what transnational environmental law consists of and how it should be researched, is a product not merely of the complexity associated with global environmental problems of great scale and the proliferation of actors and norms that have emerged to address them, but also of its more recent emergence as a line of scholarly inquiry⁴¹ which may be exacerbated by the

³³ Jolene Lin, ‘The Emergence of Transnational Environmental Law’ in Louis Kotzé (ed) *Environmental Law and Governance for the Anthropocene* (Hart 2017) 331.

³⁴ Cinnamon Carlarne and Daniel Farber, ‘Law Beyond Borders: Transnational Responses to Global Environmental Issues’ (2012) 1(1) *Transnational Environmental Law* 13, 14; see also: Natasha Affolder, ‘An Unknown Past, an Unequal Present, and an Uncertain Future: Transnational Environmental Law Through Three Research Challenges’ in Veerle Heyvaert and Leslie-Anne Duvic Paoli (eds) *Research Handbook on Transnational Environmental Law* (Edward Elgar forthcoming).

³⁵ Heyvaert and Duvic-Paoli, (n 25).

³⁶ *Ibid.*

³⁷ Eg see: Lin, (n 33).

³⁸ Heyvaert, (n 29) 206; Veerle Hayvaert, *Transnational Environmental Regulation and Governance: Purpose, Strategies and Principles* (Cambridge University Press, 2018).

³⁹ Eg: Olaf Dilling and Till Markus, ‘The Transnationalisation of Environmental Law’ (2018) 30 *Journal of Environmental Law* 179; Shaffer and Bodansky (n 23); For specific examples: of the diffusion of norms through contracts see; Natasha Affolder, ‘Contagious Environmental Lawmaking’ (2019) 31 *Journal of Environmental Law* 187; and in the context of climate risk disclosure requirements for companies see: Emily Webster, ‘Information Disclosure and the Transition to a Low-Carbon Economy: Climate-Related Risk in the UK and France’ (2019) *Journal of Environmental Law* 1; for calls for a the global constitutionalising of international environmental law see: Louis Kotzé, ‘A Global Environmental Constitution for the Anthropocene?’ (2019) 8(1) *Transnational Environmental Law* 11.

⁴⁰ Elizabeth Fisher, ‘The Rise of Transnational Environmental Law and the Expertise of Lawyers’ (2012) 1(1) *Transnational Environmental Law* 43, 45–48.

⁴¹ *Ibid.*

perceived methodological ‘immaturity’ of environmental law scholarship itself.⁴²

Taking a transnational perspective provides a diverse array of ‘tools and approaches to address environmental challenges’⁴³ and provides ‘a broader and more inclusive’ view of law and how it may address environmental problems than international law alone.⁴⁴ Thus, transnational environmental law may provide a useful lens through which to assess the role of law and its capacity to address humanity’s impact upon the Earth in this new planetary epoch.⁴⁵ Indeed, the Anthropocene provides not merely a new context within which to consider transnational environmental law and its response to these new conditions,⁴⁶ but a host of conceptual and theoretical approaches within which to ground these analyses.⁴⁷

Even without the Anthropocene as a conceptual hook, transnational environmental law is a fantastically diverse and growing area as scholars grapple with the proliferation of actors involved in both causing and addressing environmental problems and, for example, the evidence of polycentric or multi-levelled governance of environmental problems.⁴⁸ Nevertheless, by linking transnational environmental law with the Anthropocene imagery, this Special Issue invites reflection on the meaning and role of law—and transnational legal scholarship—in light of changing planetary realities.

3. Contributions in this special issue

The impact of humanity’s large-scale interference with the planet, and the emergence of potentially catastrophic global environmental problems such as climate change, has profoundly shaped transnational environmental law. Yet, as the contributions to this Special Issue demonstrate, the interactions between transnational law and the concept of the Anthropocene go beyond

⁴² Elizabeth Fisher, Bettina Lange, Eloise Scotford and Cinnamon Carlarne, ‘Maturity and Methodology: Starting a Debate about Environmental Law Scholarship’ (2009) 21(2) *Journal of Environmental Law* 213.

⁴³ Thijs Etty, Veerle Heyveart et al, ‘The maturing of Transnational Environmental Law’ (2017) 6(2) *Transnational Environmental Law* 193, 194.

⁴⁴ Cinnamon Carlarne, ‘Delinking International Environmental Law & Climate Change’ (2014) 4(1) *Michigan Journal of Environmental & Administrative Law* 1, 26.

⁴⁵ Lin, (n 33) 337.

⁴⁶ Kotzé (ed), (n 13) viii.

⁴⁷ For example, Earth System Governance, see eg: Frank Biermann, *Earth System Governance: World Politics in the Anthropocene* (MIT Press 2014); ‘Earth System Governance’ online: <<https://www.earthsystemgovernance.org/>> the Planetary Boundaries, see eg: Will Steffen et al, ‘Planetary boundaries: Guiding human development on a changing planet’ (2015) 347(6223) *Science* 1259855; Duncan French and Louis Kotzé (eds) *Law, Governance and Planetary Boundaries* (Edward Elgar forthcoming); Earth Jurisprudence, see eg: Peter Burdon (ed), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (Wakefield Press 2011); for Ecological Law, see eg: Fritjof Capra and Ugo Mattei, *The Ecology of Law: Toward a Legal System in Tune with Nature and Community* (Berrett-Koehler 2015).

⁴⁸ Eg see: Kotzé, (n 13); Fisher, (n 40). For responses to climate change see eg: Jacqueline Peel, Lee Godden and Rodney J Keenan, ‘Climate Change Law in an Era of Multi-Level Governance’ (2012) 1(2) *Transnational Environmental Law* 245; Elinor Ostrom, ‘A Polycentric Approach for Coping with Climate Change’ [2009] The World Bank Policy Research Working Paper 5095.

a law and governance response to humanity's status as biogeological agents, to consider the theoretical and practical implications that this may have for transnational environmental law itself.

The Special Issue opens with a thought-provoking opinion piece by Jorge Viñuales. Viñuales in 'Two Layers of Self-Regulation'⁴⁹ identifies two narratives of regulation: human self-regulation and biospheric self-regulation—that is the regulation of the biosphere—and calls for their alignment. Drawing on the history of scholarship concerning these two forms of self-regulation, he addresses the evident disconnect between humans and nature within the narrative of human self-regulation. This he argues, is demonstrated by the erroneous belief of 'human independence from natural conditions'⁵⁰ and goes on to show the fallacy of this belief through charting the identification of human dependence on and disruption of, the natural world. Viñuales labels human self-regulation as 'rebellious self-regulation', that is the mechanisms by which humans instigated the industrial revolution thereby accelerating our impact upon the planet. He asks us to question the ways in which this form of regulation is viewed and closes with a warning:

[w]e may not even realise how rebellious and unsettling our self-regulation is, in its unintended effects, with respect to the wider and deeper self-regulation performed by life on biogeochemical cycles. Dramatically, whether we realise it or not, our rebellion cannot succeed; it would be a secession to nowhere.⁵¹

Theoretical approaches that adopt an ecological, or multi-disciplinary perspective reconsider how we conceive of, and use law to protect the environment. Five theoretical approaches are adopted within this issue: Peter Burdon addresses ecological law; Klaus Bosselmann Earth Trusteeship, Afshin Akhtar-Khavari takes a socio-ecological approach, Louis Kotzé considers law from an Earth System perspective and finally, Laura Mai rethinks transnational law in the context of the Anthropocene.

Burdon, in 'Ecological Law in the Anthropocene', considers the challenges posed by the Anthropocene paradigm.⁵² Burdon argues that rather than constructing a non-anthropocentric ethics, ecological law scholarship should embrace the centrality of human agency in the new geological epoch. The key question for Burdon thus becomes how this agency can be enacted and used with 'humility and responsibility'.⁵³ Burdon argues that acknowledging the centrality of human agency in the Anthropocene implies that concepts which have been central to ecological scholarship, such as those of ecological integrity and wilderness ethics, can no longer provide accurate frames for

⁴⁹ Jorge Viñuales, 'Two Layers of Self-Regulation' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

⁵⁰ *Ibid*, 13.

⁵¹ *Ibid*, 17.

⁵² Peter Burdon, 'Ecological Law in the Anthropocene' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

⁵³ *Ibid*.

thinking about ecological degradation or planetary reality. Recalling the innovative and critical potential of ecological law scholarship, Burdon calls for 'fresh thinking' and 'a willingness to grapple with uncertainty'.⁵⁴

Bosselmann, in his article 'Environmental Trusteeship and State Sovereignty: Can they be Reconciled?',⁵⁵ explores how the concept of 'Earth trusteeship' interacts with the Westphalian paradigm of state sovereignty, including related notions of territoriality and legal ownership of the Earth. Noting inherent inconsistencies, he turns to the concept of fiduciary duties—owed by governments to their citizens—to develop an alternative 'Earth-centred' account of sovereignty under which 'states not only have traditional rights of self-determination and non-intervention but also responsibilities for human rights and the Earth'.⁵⁶ Under this new paradigm planetary well-being, rather than the principle of economic growth, would guide both domestic and international environmental protection.

Akhtar-Khavari, in his contribution 'Restoration and Cooperation for Flourishing Socio-ecological Landscapes',⁵⁷ draws on the concept of symbiosis to outline a novel cooperative restoration paradigm for environmental law. At the heart of this new paradigm lie cooperative interactions between the human and the more-than-human world, thus implying an ontological shift from the current focus on competition among humans. Akhtar-Khavari argues that this shift prompts environmental law to move from using 'technical measures to fix problems' to creating social institutions that facilitate 'human inputs into the natural environment'.⁵⁸ A cooperative approach would benefit both the human and the more-than-human world, creating 'flourishing socio-ecological landscapes'.⁵⁹

Kotzé, in 'Earth System Law for the Anthropocene: Rethinking Environmental Law Along the Earth System Metaphor', reflects on the image of the Earth system and its role in constructing a new paradigm for environmental law in the Anthropocene: Earth System Law.⁶⁰ Tracing the development of the Earth system imaginary, Kotzé argues that it provides an epistemic framework for multi-disciplinary research efforts that focus on the planetary scale and take account of the complex interactions between humans and non-humans across multiple levels of organisation. Noting that 'environmental law and environmental lawyers have not yet meaningfully embraced the Earth

⁵⁴ *Ibid.*

⁵⁵ Klaus Bosselmann, 'Environmental Trusteeship and State sovereignty: How can they be reconciled' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

⁵⁶ *Ibid.*, 15.

⁵⁷ Afshin Akhtar-Khavari, 'Restoration and Cooperation for Flourishing Socio-Ecological Landscapes' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ Louis J Kotzé, 'Earth System Law for the Anthropocene: Rethinking Environmental Law Along the Earth System Metaphor' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

system metaphor',⁶¹ he suggests that taking seriously the Earth system imaginary challenges environmental law scholarship to work in more interdisciplinary manner, to reorganise around systems thinking, acknowledge the adaptive capacities of the Earth system, and navigate ontological shifts to recognise that human and non-human vulnerabilities are connected.

Finally, Mai, in '(Transnational) Law for the Anthropocene: Revisiting Jessup's Move from "What?" to "How?"',⁶² argues that legal researchers and practitioners are now tasked to understand how transnational law can be mobilised to navigate Anthropocene realities. Combining perspectives from ecology, sociology and the humanities, Mai identifies the demands which the Anthropocene places on legal thinking. These include changes in spatio-temporal dynamics, emerging new forms of agency and subjectivity as well as the need for law to revisit its normative foundations. She argues that adopting Jessup's practical, progressive and pragmatic perspective is a productive starting point for legal thinking and practice to 'de-familiarise' itself from Holocene orthodoxies and develop new legal forms, strategies and technologies that can help navigate Anthropocene realities.

The issue then moves to an analysis of law directed at specific global environmental problems; namely climate change, marine degradation, and global waste. Taking a broad approach to climate litigation, Phillip Paiement, in his article 'Urgent Agenda: How Climate Litigation Builds Transnational Narratives',⁶³ identifies common storylines which describe the temporal dimension of climate change and its governance using three climate litigation cases from the Netherlands, Norway, and Ireland as case studies. Paiement finds that the narratives of litigants differ from those of governments. While litigants use linguistic tools to produce a notion of urgency, states describe futures in which technological innovation and economic development alleviate the challenges and costs of the climate crisis. Reaching beyond the traditional legal methodological toolkit, Paiement is able to uncover how competing storylines employed in transnational legal strategies are shaping understandings of climate responsibility and justice.

In 'Litigation and Regulatory Governance in the Age of the Anthropocene: The Case of Fracking in the Karoo',⁶⁴ Melanie Murcott and Emily Webster focus in on the role of transnational actors in the contested space of fracking in the ecological sensitive region of the Karoo in South Africa, in which private actors engage in litigation in an attempt to prevent fracking activity in this area. Murcott and Webster identify and assess the constellation of

⁶¹ *Ibid.*

⁶² Laura Mai, '(Transnational) Law for the Anthropocene: Revisiting Jessup's Move from "What?" to "How?"' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

⁶³ Phillip Paiement, 'Urgent Agenda: How climate litigation builds transnational narratives' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

⁶⁴ Melanie Murcott and Emily Webster, 'Litigation and regulatory governance in the age of the Anthropocene: The case of fracking in the Karoo' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

actors involved in what appears to be a purely domestic matter, including the government and transnational fossil fuels promoting fracking on the one hand, and various non-state actors, such as civil society, domestic business as well as the global anti-fracking movement, opposing fracking on the other. They argue that the role and power of the state to regulate fracking activity is significantly impacted by private actors, including by refocusing the minds of transnational corporations and the state on the centrality of public participation, by challenging regulations introduced to govern fracking, and, ultimately, through delaying the operationalisation of fracking, thereby decreasingly its attractiveness to transnational fossil fuel companies.

Moving to marine governance, Emily Barritt in ‘The Myth of Mermaids and Stewardship of the Seas’⁶⁵ adopts the mythological concept of mermaids to analyse the governance of marine biodiversity beyond national jurisdiction. She does so to prompt us to ‘expand our imaginative capacities’ and to provide a resource through which to re-examine ‘our relationship with the oceans’.⁶⁶ Barritt argues that the current regime is fragmented and perceives of ocean ecosystems in a way that does not take into account their ecological complexities. Despite on-going negotiations for a new agreement to govern biodiversity beyond national jurisdictions, she fears that there is little appetite for the reforms needed to adequately address the pressures on ocean ecosystems. In her intervention, she hopes to

retune and embellish the narrative of ocean space that is told by international law ... By appealing to the seductive powers of the mermaids, I hope that some of these warnings might be heard. That, unlike Odysseus’ crew, those with the power to effect these changes will not stuff their ears with wax but will pay attention and respond to the song of the sirens.⁶⁷

Staying with marine governance, Pierre Cloutier de Repentigny in ‘To the Anthropocene and Beyond: The Responsibility of Law in Decimating and Protecting Marine Life’⁶⁸ uses the concept of the Anthropocene to critique the current narrative underpinning the law of the seas; namely economic growth. He demonstrates, through a review of the history of the law of the seas, that the law, rather than being passive, has actively contributed towards the emergence of the Anthropocene. Instead, he argues, there should be a focus on human responsibility towards the marine environment, in a way that recognises humanity’s status as geological agents. In this way law would be reformed in this area to incorporate our ‘anthropocenic

⁶⁵ Emily Barritt, ‘The Myth of Mermaids and Stewardship of the Seas’ 11(1-2) *Transnational Legal Theory*, this issue.

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

⁶⁸ Pierre Cloutier de Repentigny, ‘To the Anthropocene and Beyond: The Responsibility of Law in Decimating and Protecting Marine Life’ (2020) 11(1-2) *Transnational Legal Theory*, this issue.

responsibility'. He concludes, that '[l]aw can and should be used to that end; that is, to impose a framework on our agency that is reflective of our destructive capacity and of the needs of the biosphere'.⁶⁹

The Special Issue ends with a focus on transnational waste. Michael Hennessy Picard and Tina Beigi in 'Regimes of Waste (Im)perceptibility in the Life Cycle of Metal'⁷⁰ interrogate the transnational governance of waste and its dominant focus on economic recovery. They argue that within the concept of the circular economy much of waste is imperceptible, thereby limiting the ways in which law may be deployed to govern it. Adopting Latour's binary of 'matters of concern' (the materiality of waste) and 'matters of fact' (legal measures designed to govern waste) they assess the current transnational governance of waste and the visible and invisible life of waste and seek to call 'attention to the blind spots created by the legal categories of mining and electronic waste'.⁷¹ They end by suggesting that reform of the existing 'transnational legal structure' of waste governance based upon ecological law, may be required to move away from the dominant market-based approach that currently prevails.

4. Environmental law and the Anthropocene: an outlook

The emergence of COVID-19 and the global disaster that it has wrought, has exposed the complexities and challenges that have long haunted responses to collective global environmental problems in the context of a global health emergency. During this period the environment initially experienced a decrease in its usual pressures. Emissions of greenhouse gases have reduced significantly in response to the ceasing of everyday life that has accompanied domestic responses to infection control.⁷² This has also been accompanied by a reduction in air pollution and consequential health benefits.⁷³ Indeed, preliminary research has shown a potential link between air pollution and high risk of mortality from the COVID-19 disease, thereby increasing awareness of the significant impacts of air pollution on human health.⁷⁴ However, the reduction of air pollutants may have a consequential impact on global temperatures as concentrations of certain anthropogenic aerosols that have a net

⁶⁹ *Ibid.*

⁷⁰ Michael Hennessy Picard and Tina Beigi, 'Regimes of waste (im)perceptibility in the life cycle of metal' (2020) 11(1-2) *Transnational Legal Theory*, this issue.

⁷¹ *Ibid.*

⁷² Corinne Le Quéré et al, 'Temporary reduction in daily global CO₂ emissions during the COVID-19 forced confinement' (2020) *Nature Climate Change* online: <<https://doi.org/10.1038/s41558-020-0797-x>>.

⁷³ Kai Chen et al, 'Air pollution reduction and mortality benefit during the COVID-19 outbreak in China' *The Lancet* (2020) online: <[https://doi.org/10.1016/S2542-5196\(20\)30107-8](https://doi.org/10.1016/S2542-5196(20)30107-8)>.

⁷⁴ Simon Brandon, 'The link between air pollution and COVID-19 deaths' (*World Economic Forum*, 29 April 2020) online: <<https://www.weforum.org/agenda/2020/04/link-between-air-pollution-covid-19-deaths-coronavirus-pandemic/>>.

cooling effect, are reduced,⁷⁵ while long-lived greenhouse gases, such as carbon dioxide, remain in the atmosphere.

While there have been short-term environmental gains in the reduction of pollution, problems such as the disposal of single-use plastic have been exacerbated in the efforts to protect those tasked with caring for the sick and dying and carrying out essential services.⁷⁶ This additionally emphasises the importance of plastics in modern life, yet this sector is also supported by the oil and gas sector as the dominant feedstock for plastics production.⁷⁷ The immense challenges associated with governing the Anthropocene have been aptly demonstrated in the emergence of this pandemic.⁷⁸ Furthermore, it has brought to the fore the implications for humans of our large-scale intervention in the environment; and has raised questions regarding how human encroachment and destruction of the natural world may result in more instances of virus transmission from animals to humans and therefore increased incidences of future disease.⁷⁹

The climate crisis looms large in the background to this current disaster. The need to address climate change and the Paris Agreement's temperature targets,⁸⁰ has led, in some quarters, towards linking economic recovery from the pandemic with environmental goals. For instance, the EU's recovery package will include the commitment to reach net zero greenhouse gas

⁷⁵ Olivier Boucher et al, 'Clouds and Aerosols' in Thomas F Stocker et al (eds), *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2013).

⁷⁶ For a discussion of the interactions between the pandemic and international law see: Leslie-Anne Duvic-Paoli, 'COVID-19 Symposium: The COVID-19 Pandemic and the Limits of International Environmental Law' (*OpinioJuris*, 30 March 2020) online: <<http://opiniojuris.org/2020/03/30/covid-19-symposium-the-covid-19-pandemic-and-the-limits-of-international-environmental-law/>>.

⁷⁷ Renee Cho, 'More Plastic is On the Way: What It Means for Climate Change' (*State of the Planet Earth Institute, Columbia University*, 20 February 2020).

⁷⁸ Anjay Gambhir, 'Coronavirus and climate change: "There is much uncertainty, and much to play for"' (*Grantham Institute*, 17 March 2020) online: <<https://granthaminstitute.com/2020/03/17/coronavirus-and-climate-change-there-is-much-uncertainty-and-much-to-play-for/>>; Laurie Goering, 'What COVID-19 can teach us about tackling climate change' (*World Economic Forum*, 15 May 2020) online: <<https://www.weforum.org/agenda/2020/05/covid-19-apply-battling-climate-change/>>; Kimberly Cartier, 'Eight Lessons from COVID-19 to Guide Our Climate Response' (*EOS*, 101, 24 April 2020) online: <<https://eos.org/articles/eight-lessons-from-covid-19-to-guide-our-climate-response>>; Matthew Hoffmann et al, 'COVID-19 recovery is a chance to build a greener, more inclusive society' (*First Policy Response*, 1 June 2020) online: <<http://policyresponse.ca/covid-19-recovery-is-chance-to-build-greener-more-inclusive-society/>>.

⁷⁹ Eg see: Josef Settele et al, 'IPBES Guest Article: COVID-19 Stimulus Measures Must Save Lives, Protect Livelihoods, and Safeguard Nature to Reduce the Risk of Future Pandemics' (*IPBES*, 27 April 2020) online: <<https://ipbes.net/covid19stimulus>> The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services is currently undertaking research regarding the link between biodiversity loss and pandemics ('IPBES workshop on biodiversity and pandemics' (*IPBES*, 2020) online: <<https://ipbes.net/node/37055>>, and it is reported that the Intergovernmental Panel on Climate Change is also considering the links between climate change and pandemics within the confines of its next assessment report in 2021, Alister Doyle, 'Next UN climate science report to consider lessons from coronavirus' (*Climate Home News*, 24 April 2020) online: <<https://www.climatechangenews.com/2020/04/23/next-un-climate-science-report-consider-pandemic-risk/>>.

⁸⁰ Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) FCCC/CP/2015/10/Add 1 Article 2.1(a).

emissions.⁸¹ Some states have also considered attaching climate conditions to economic bailouts of domestic aviation companies, although many have balked at this step.⁸² For others the recovery from inevitable economic crisis may provide ample justification to further entrench fossil fuel dependency and put off the transition to a low-carbon economy. For instance, in the USA the pandemic has been used to justify relaxing environmental regulations,⁸³ and in Brazil the Environment Minister suggested in a Ministerial Meeting that the pandemic be used as a distraction to pursue an environmental deregulation agenda.⁸⁴

2020 is a pivotal year for the Paris Agreement, with the agreement formally coming into effect and a hoped-for increase in ambition at COP 26.⁸⁵ Yet, international meetings, such as COP 26 and the Convention on Biological Diversity's COP 15 have been postponed, thereby effectively pausing the work of these bodies, potentially undermining attempts to progress on these important issues.⁸⁶ Additionally, the economic outfall of the COVID-19 pandemic is yet to fully materialise. Its full impact upon efforts to govern global environmental problems, such as climate change, is likely only to be revealed over the coming months and years.⁸⁷

As demonstrated aptly by the articles in this Special Issue, transnational environmental law scholarship contextualised and drawing on the insights of the Anthropocene, is well placed to grapple with the global environmental challenges that have emerged as a result of human intervention within the planetary system. Research and analyses of law and governance approaches that attempt to reconceptualise our place in the world, to ensure that law not merely serves humans but nature as well, and that critically engage with the

⁸¹ 'Covid-19: the EU plan for the economic recovery' (*News European Parliament*, 18 May 2020) online: <<https://www.europarl.europa.eu/news/en/headlines/economy/20200513STO79012/covid-19-the-eu-plan-for-the-economic-recovery/>>.

⁸² Sam Morgan, 'Austrian Airlines bailout to be linked to climate targets' (*Euractiv*, 17 April 2020) online: <<https://www.euractiv.com/section/aviation/news/austrian-airlines-bailout-to-be-linked-to-climate-targets/>>; Sandra Laville, 'Coronavirus: airlines seek €12.8bn in bailouts without environmental conditions attached' *The Guardian* (22 April 2020).

⁸³ Emily Holden, 'Trump dismantles environmental protections under cover of coronavirus' *The Guardian* (11 May 2020) online: <<https://www.theguardian.com/us-news/2020/may/10/trump-environmental-blitzkrieg-coronavirus>>.

⁸⁴ Jake Spring, 'Brazil minister calls for environmental deregulation while public distracted by COVID' *Reuters* (22 May 2020) online: <<https://uk.reuters.com/article/us-brazil-politics-environment/brazil-minister-calls-for-environmental-deregulation-while-public-distracted-by-covid-idUKKBN22Y30Y>>.

⁸⁵ 'Secretary-General's Briefing to Member States on the 26th Session of the Conference of the Parties (COP26) [as delivered]' (*United Nations Secretary-General*, 6 March 2020) online: <<https://www.un.org/sg/en/content/sg/statement/2020-03-06/secretary-generals-briefing-member-states-the-26th-session-of-the-conference-of-the-parties-cop26-delivered>>.

⁸⁶ Chloé Farand, 'Coronavirus delays global efforts for climate and biodiversity action' (*Climate Home News*, 10 March 2020) online: <<https://www.climatechangenews.com/2020/03/10/coronavirus-delays-global-efforts-climate-biodiversity-action/>>.

⁸⁷ Gita Gopinath, 'The Great Lockdown: Worst Economic Downturn Since the Great Depression' (*IMF*, 14 April 2020) online: <<https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/>>.

law as it stands and posits what it ought to be, are essential. Although it is in its early stages, transnational environmental law provides a framework for research that contributes to this endeavour. The articles in this Special Issue lay out a range of possible conceptual and methodological tools and perspectives to continue this path of exploration.

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