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# Reflections on the Future of Environmental Law Scholarship and Methodology in the Anthropocene

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## 1 Introduction

Scientists believe we are entering a new geological epoch called the Anthropocene, in which humans have become a force of nature, essentially dislodging the harmony of the Earth's intertwined system that has hitherto prevailed in the relatively stable Holocene epoch. While its existence has yet to be formally confirmed, the Anthropocene as a trope undoubtedly already confronts environmental law scholars with unique challenges concerning the need to critically question, and ultimately to re-imagine, those methodological and scholarly foundations, perspectives and approaches related to the discipline of environmental law.

It is my hypothesis that for environmental law scholars, the socio-ecological crisis signified by the Anthropocene epoch (marked as this crisis is by rapidly intensifying levels of change, complexity and unevenness) presents unique regulatory, normative and more importantly for present purposes methodological and scholarly challenges that will have to be addressed if environmental law scholars were to make any meaningful contribution to confronting head on this epoch's innumerable complex regulatory challenges. As I hope to show, because of the Anthropocene, there is a convincing case to be made out in support of critically re-interrogating the current state and future of environmental law scholarship, including many of the trite epistemological, ontological, ethical and methodological impulses, assumptions and approaches that accompany this decades-old characterization of the juridified regulatory interventions associated with environmental protection.

In Section 2, I provide brief introductory perspectives with the view to situating the debate on environmental law scholarship in the

Anthropocene. Section 3 sets out what the Anthropocene means in general terms, including its relevance for social sciences, humanities and environmental law. Section 4 identifies in broad terms some of the possible implications of the Anthropocene for environmental law scholarship. It specifically highlights and elaborates three considerations that I believe we should consider if we are to produce scholarship alongside appropriate methodologies that could more usefully respond to Anthropocene exigencies. These are the need for transdisciplinarity, integration and transnationality; the need to confront head on the pervasive anthropocentrism of environmental law and its scholarship; and the need for environmental law and its scholarship to become more inclusive and representative.

Three caveats apply to the discussion that follows: (i) While there will certainly be other considerations that could be fleshed out in a more comprehensive inquiry (including a taxonomical study that could also make a more convincing case for re-ordering and reclassifying the rules governing the Earth system in the Anthropocene), I believe the considerations outlined later represent in broad terms the most immediate concerns potentially bedeviling the future legitimacy and usefulness of environmental law as a juridical discipline for the Anthropocene around which scholars will convene. (ii) Without an objective standard of measurement or criteria which I have not developed, I will refrain from judging the quality of Anthropocene environmental law scholarship that has emerged to date. Passing judgement on the quality of scholarship could easily become a subjective exercise that falls victim to generalizations, while running the risk of being characterized as an elitist pursuit. (iii) The analysis does not focus on the entire spectrum of environmental law since its development in the 1970s; it only concerns itself with the scholarship that has been emerging since the early 2000s when the idea of the Anthropocene was first introduced.

## 2 Situating the Debate

Environmental law as a discipline has been around approximately fifty years now, but reflections on the state of environmental law scholarship have only been emerging in the past decade. Apart from the sustained work of a few commentators,<sup>1</sup> such reflections have not yet been fully

<sup>1</sup> See, for example, E. Fisher et al., 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21(2) *Journal of Environmental Law* 213–250;

taken up in mainstream academic debates. Moreover, to date, little attention has been given to the potential impact of the Anthropocene trope on environmental law scholarship, despite this trope being increasingly utilized by environmental law scholars. I believe it is timely and apt to commence with such a conversation here, even though it would only be a tentative tipping of the toe in the water.

An important precursor to such an interrogation would be to distinguish between the (not unrelated as I will show) state of environmental law as a *regulatory intervention* and the *scholarship* that engages with this regulatory intervention. With the overarching goal of achieving anthropocentric sustainable development, environmental law has developed since its birth around the 1970s as a regulatory response to localized, silo-based problems of environmental pollution and nature conservation, which it has treated in a fragmented manner. It has failed, alongside other socially constructed normative interventions that aim to regulate human behaviour, to keep humanity from crossing critical planetary boundaries that exemplify the Anthropocene's socioecological crisis in concrete terms:<sup>2</sup>

[E]ffective environmental legislation must at a minimum act as legal boundaries that prevent human activities from reaching and breaching planetary boundaries, defined as the safe space for mankind to operate within . . . In other words, legal boundaries must translate the physical reality of a finite world into law and thereby delimit acceptable levels of human activity.<sup>3</sup>

Because we have already crossed three of the nine planetary boundaries, and as we are fast approaching the other six,<sup>4</sup> it is evident that environmental law has failed to meaningfully contribute to regulatory efforts that aim to keep humanity from reaching and breaching these boundaries. To this end, several of the failures and deficiencies of environmental law

Ole Pedersen 'The Limits of Interdisciplinarity and the Practice of Environmental Law Scholarship' (2014) 26 *Journal of Environmental Law* 423–441; Ole Pedersen, 'Modest Pragmatic Lessons for a Diverse and Incoherent Environment Law' (2013) 33(1) *Oxford Journal of Legal Studies* 103–131.

<sup>2</sup> J. Rockström et al., 'A Safe Operating Space for Humanity' (2009) 461 *Nature* 472–475.

<sup>3</sup> G. Chapron, Y. Epstein, A. Trouwborst & J. López-Bao, 'Bolster Legal Boundaries to Stay within Planetary Boundaries' (2017) 1 *Nature Ecology and Evolution* 1–5 at 1.

<sup>4</sup> The nine boundaries are biodiversity, climate change, biogeochemical flows (all three crossed), stratospheric ozone depletion, atmospheric aerosol loading, ocean acidification, global freshwater use, land system change, and chemical pollution (all six fast approaching).

are explicated by the Anthropocene's human-induced signatures which loosely characterize environmental law as being

- Incompatible with Earth system complexities and unresponsive to Earth system changes;
- Too supportive of anthropocentric neo-liberal economic development through, among others, its prioritization of the politically powerful, but ethically weak, concept of sustainable development; and
- Discriminatory to the extent that it often excludes minorities and other vulnerable categories of people, thus shutting out alternative modes of inclusive socioecological care.<sup>5</sup>

These factors are all apparent in environmental law, and they legitimize and reinforce the type of human behaviour that is causing the Anthropocene,<sup>6</sup> while allowing and actively perpetuating environmental destruction, growing inter- and intra-species hierarchies, human rights abuses and socioeconomic and ecological injustices.<sup>7</sup> These concerns are increasingly (although not nearly sufficiently) being considered by legislators, courts, politicians and states in their efforts to reform the regulatory aspects of environmental law.

More importantly for present purposes, however, is the state of the scholarship that critiques environmental law as a regulatory intervention, including scholarship dealing with its successes and failures and proposals for reform and future development. Scholars have obviously been engaging intellectually with environmental law for many years now, but we have been neglecting *why* and *how* we as scholars engage with the normative and regulatory *problematique* of environmental law, and *what* we are doing and what we should be doing as scholars to interrogate this *problematique*; including considerations such as methodology, the quality of scholarship, the role of ethics in scholarship, the question of transdisciplinarity and issues of representivity. While questions arising from the state of environmental law as a regulatory intervention and the scholarship that engages with this regulatory intervention are two separate issues, as

<sup>5</sup> L. Kotzé, 'Rethinking Global Environmental Law and Governance in the Anthropocene' (2014) 32(2) *Journal of Energy and Natural Resources Law* 121–156.

<sup>6</sup> R. Kim & K. Bosselmann, 'International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements' (2013) 2 *Transnational Environmental Law* 285–309.

<sup>7</sup> A. Grear, 'Deconstructing Anthropos: A Critical Legal Reflection on "Anthropocentric" Law and Anthropocene "Humanity"' (2015) 26 *Law and Critique* 225–249.

Fisher et al. argue,<sup>8</sup> I believe the Anthropocene's human-induced signatures described earlier usefully characterize some of the shortcomings of environmental law scholarship as well, especially when viewed through the epistemological lens of the Anthropocene. More particularly, as I will argue, environmental law scholarship could be described as being

- Insufficiently aligned with Earth system complexities and unresponsive to Earth system phenomena, which will require a systems approach and methodologies that actively embrace transdisciplinarity and transnationalism;
- Too accommodative of, and uncritical towards, neo-liberal anthropocentrism and the achievement of economic prosperity for some privileged humans at all cost, which will require a fundamentally different ecologically centred ontological reorientation and ethical approach underlying scholarship and methodologies; and
- Under-representative of the diverse and often neglected voices and concerns of marginalized sectors in society, including especially nature, the poor, women, children and members of indigenous communities who are the most severely affected by Anthropocene exigencies, which will require more inclusive and representative scholarship and methodologies aimed at achieving inter- and intra-species socioecological justice.

These considerations, as I will argue, have to be addressed by environmental law scholars as they start engaging with and developing the nascent body of 'Anthropocene environmental law scholarship' (for lack of an alternative phrase).

### 3 The Anthropocene and Its Relation to Law

The Anthropocene epoch is a period in Earth's geological history signaling an unprecedented global socioecological crisis where humans act as geological agents capable of dominating and changing the Earth system.<sup>9</sup> As a consequence, virtually all global environmental indicators have been rising exponentially, showing that 'the Earth system has clearly moved outside the envelope of Holocene variability.'<sup>10</sup> To this end, the

<sup>8</sup> Fisher et al., 'Maturity and Methodology'.

<sup>9</sup> Simon Lewis & Mark Maslin, 'Defining the Anthropocene' (2015) 519 *Nature* 171–180.

<sup>10</sup> Will Steffen, Jacques Grinevald, Paul Crutzen & John McNeill, 'The Anthropocene: Conceptual and Historical Perspectives' (2011) 369 *Philosophical Transactions of the Royal Society* 842–867 at 850–851.

(distinctly multidisciplinary) Anthropocene Working Group recently concluded that there is probably convincing evidence to formalize the Anthropocene in the near future as the new geological epoch.<sup>11</sup> Yet, whether or not it is formalized, what is already clear from the burgeoning and ever-expanding academic and popular literature is that the Anthropocene concept ‘has captured an ever-widening audience and emerged as a powerful trope’.<sup>12</sup> As a discursive category, the Anthropocene now occupies a central position in the human-environment relations discourse.

To this end, the Anthropocene has many scholarly manifestations or utilities: it could signify a complex time of accelerated anthropogenic change; it could be a narrative framing of contemporary life and futures; it could act as a lens through which to view multispecies worlds in formation; and/or it could be a spatial and material manifestation of specific economic, scientific, and political practices.<sup>13</sup> Baskin therefore correctly points out that ‘[t]he Anthropocene does not need to be an object of scientific inquiry by geologists and stratigraphers, or even a formally-recognised geological epoch, in order to have an impact’.<sup>14</sup> As it stands, the Anthropocene is ‘paradigm dressed as epoch’<sup>15</sup> and has entered the *Zeitgeist* in spectacular fashion. In addition, the Anthropocene radically unsettles the philosophical, epistemological and ontological grounds on which both the natural sciences and the social sciences/humanities have traditionally stood. To this end, the Anthropocene

is not simply a neutral characterisation of a new geological epoch, but it is also a particular way of understanding the world and a *normative guide to action*. It is . . . more usefully understood as an ideology – in that it provides the ideational underpinning for a particular view of the world, which it, in turn, helps to legitimate.<sup>16</sup>

Because such a new world view or ideology ‘heralds an opening of sorts, a clarion call for change’,<sup>17</sup> as Baker argues, this change must also be

<sup>11</sup> J. Zalasiewicz et al., ‘The Working Group on the Anthropocene: Summary of Evidence and Interim Recommendations’ (2017) 19 *Anthropocene* 55–60 at 59.

<sup>12</sup> Grear, ‘Deconstructing Anthropos’, 226.

<sup>13</sup> Amelia Moore, ‘The Anthropocene: A Critical Exploration’ (2015) 6 *Environment and Society: Advances in Research* 1–3 at 1.

<sup>14</sup> Jeremy Baskin, ‘Paradigm Dressed as Epoch: The Ideology of the Anthropocene’ (2015) 24 *Environmental Values* 9–29 at 12.

<sup>15</sup> *Ibid.* 10.

<sup>16</sup> *Ibid.* 10–11 (emphasis added).

<sup>17</sup> Shalanda Baker, ‘Adaptive Law in the Anthropocene’ (2015) 90(2) *Chicago-Kent Law Review* 563–584 at 567.

reflected in, and carried through, our regulatory institutions, especially if one agrees with the view that the Anthropocene offers some sort of ‘normative guide to action’, which very particularly highlights the connection between the Anthropocene trope and law. Law has the potential not to change the Earth system but to influence human impacts on the Earth system, while enabling humans to adapt to an increasingly erratic Earth system and to become more resilient. To this end, law as a regulatory social institution is a crucial ingredient in any response strategy to the Anthropocene, notably to the extent that it could work to increase resilience; enable society to sustain and absorb socioecological stresses and impacts, external interference and complex and unpredictable changes; and to confront the many complex uncertainties of the Earth system, while striving to protect and even enhance ecological integrity.<sup>18</sup> If law must play a central role in regulatory efforts responding to the Anthropocene, it could reasonably be expected that legal scholars will increasingly be required to grapple with the implications of the Anthropocene for environmental law, as well as with the practice of scholarship around the Anthropocene’s juridical domain.

#### 4 The Implications of the Anthropocene for Environmental Law Scholarship

Generally speaking, scholarship focusing on the Anthropocene has been steadily emerging and expanding at an exponential rate since the early 2000s, following the term’s first formal introduction.<sup>19</sup> These initial inquiries, while far too extensive to map here, were mostly based in the natural sciences (notably geography, stratigraphy, geology, archeology and ecology), which to date still remain the dominant domains of scholarly activity and focus in this regard. Anthropocene research has been published over the years in a range of journals dealing specifically with the foregoing scientific areas. Perhaps also reflecting on the increased maturity of Anthropocene scholarship is the creation of issue-specific scientific journals directly related to the Anthropocene, through which such scholarship is gradually gaining importance, legitimacy and recognition (if perhaps not yet full maturity) in a remarkably short space of time. Some journals include *Anthropocene Review*, *Anthropocene*,

<sup>18</sup> Jonas Ebbesson, ‘The Rule of Law in Governance of Complex Socio-ecological Changes’ 2010(20) *Global Environmental Change* 414–422 at 414.

<sup>19</sup> P. Crutzen and E. Stoermer, ‘The “Anthropocene”’ (2000) 41 *International Geosphere-Biosphere Programme Global Change Newsletter* 17–18.

*Elementa: Science of the Anthropocene* and *Anthropocene Coasts*. The majority of publications in these journals hail from the natural sciences, although the journals are all branded as ‘multidisciplinary’ and often include social science and humanities contributions.

One of the most notable first forays into the humanities and social sciences domains occurred through the work of political scientists (see especially the work of Biermann),<sup>20</sup> that sought to connect and interrogate aspects of global environmental governance through the Anthropocene lens, and more specifically, to connect it with the Anthropocene’s imagery of an integrated Earth system that requires integrated modes of polycentric, reflexive and multi-scalar global governance alongside a systems approach. In growing attempts to more critically engage with questions centring on ‘meaning, value, responsibility and purpose in a time of rapid and escalating change’,<sup>21</sup> humanities and social science scholars from a diverse range of specialties from ethics and economics to religion and anthropology have increasingly been engaging with the Anthropocene. In fact, the social sciences and humanities are now considered an integral part of the Anthropocene research agenda. As Lövbrand et al. encouragingly note:

We believe the social sciences are well equipped to push the idea of the Anthropocene in new and more productive directions. Interpretation, differentiation and re-politicization represent central traits of this next generation of Anthropocene scholarship, in which a plurality of actors are welcomed to deconstruct established frames of the planet and its inhabitants and to experiment with new ones. It is promising to note that conversations of this kind now are unfolding in diverse academic settings. Across the humanities and social sciences, scholars are adopting the Anthropocene concept to raise critical questions on environmental politics, culture, identity and ethics.<sup>22</sup>

Law seems to have warmed to the idea of the Anthropocene only much later, but it is a steady and promising enterprise that has, for the most part, been using the Anthropocene as an epistemological lens through which to reassess and to critique, in both a backwards and forwards-looking view, the many and varied aspects of (environmental) law in this

<sup>20</sup> F. Biermann, *Earth System Governance: World Politics in the Anthropocene* (Cambridge, MA: MIT Press, 2014).

<sup>21</sup> E. Lövbrand et al., ‘Who Speaks for the Future of Earth? How Critical Social Science Can Extend the Conversation on the Anthropocene’ (2015) 32 *Global Environmental Change* 211–218 at 212.

<sup>22</sup> *Ibid.*, 217.



proposed new epoch. While it is difficult to pinpoint the first juridical enquiry that dealt with the Anthropocene, I believe it is probably correct to say that Kim and Bosselmann's 2013 interrogation of international environmental law through the Anthropocene lens was one of the first and most influential.<sup>23</sup> Other international law-focused enquiries such as by Vidas, Robinson, Stephens, and Scott soon followed,<sup>24</sup> while yet other accounts have reflected on the constitutional and ethical aspects of (environmental) law in the Anthropocene.<sup>25</sup> More recently in 2017, the first comprehensive and systemized collection of work focusing specifically on a diverse set of sub-disciplinary areas of juridical and governance areas appeared.<sup>26</sup> It broadly reflects upon the Anthropocene and the implications of its discursive formation in an attempt to trace some initial, radical, future-facing and imaginative implications for environmental law and governance.

What this (perhaps crude and rather brief) summary of the developmental trajectory of Anthropocene environmental law scholarship suggests is that the idea of the Anthropocene and its accompanying imagery has not yet been taken up with overwhelming enthusiasm by general legal and environmental law scholars. Some legal scholars are to some extent recognizing the Anthropocene's value as a new paradigmatic trope, and they are applying this trope in areas of international (environmental) law, constitutional law, climate and disaster management, global environmental governance and ethics, among others. But this has only occurred since 2013 and in a rather haphazard manner which does not suggest the deliberate and widespread emergence of any coherent and systemized scholarly body of work critically reflecting on Anthropocene environmental law. That being said, there is considerable potential for legal

<sup>23</sup> R. Kim & K. Bosselmann, 'International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements' (2013) 2(2) *Transnational Environmental Law* 285–309.

<sup>24</sup> Nicholas Robinson, 'Fundamental Principles of Law for the Anthropocene?' (2014) 44 *Environmental Policy and Law* 13–27; Karen Scott, 'International Law in the Anthropocene: Responding to the Geoengineering Challenge' (2013) 34(2) *Michigan Journal of International Law* 309–358; D. Vidas et al., 'International Law for the Anthropocene? Shifting Perspectives in Regulation of the Oceans, Environment and Genetic Resources' (2015) 9 *Anthropocene* 1–13; Tim Stephens, 'Disasters, International Law and the Anthropocene' in S. Breau and K. L. H. Samuel (eds), *Research Handbook on Disasters and International Law* (Cheltenham: Edward Elgar, 2016).

<sup>25</sup> Gear, 'Deconstructing Anthropos'; L. Kotzé, *Global Environmental Constitutionalism in the Anthropocene* (Oxford: Hart Publishing, 2016).

<sup>26</sup> L. Kotzé (ed.), *Environmental Law and Governance for the Anthropocene* (Oxford: Hart Publishing, 2017).

scholarship to more fully respond to the Anthropocene – not least because the arrival of the Anthropocene mind-set has various implications for environmental law as a social regulatory institution, as well as various and varied implications for scholars engaging intellectually with environmental law.

First, the Anthropocene provides a fresh analytical perspective to environmental law scholars, which could potentially facilitate deeper epistemological and ontological enquiries into regulatory interventions that dictate human behaviour on Earth. Law, after all, is deeply implicated in the systems that have caused the Anthropocene (also in the sense that law might be an autopoietic system that defines, maintains and reproduces itself).<sup>27</sup> Such a realization allows an opening up, as it were, of hitherto prohibitive closures in the law, of the legal and regulatory discourse more generally, and of the world order that the law operatively maintains, towards other understandings of global environmental change and ways to mediate this change through a specific type of law that is more attuned to the challenges of the Anthropocene. Through the new epistemological lens of the Anthropocene, environmental law scholars will increasingly be required to question and critically revisit the epistemic assumptions and normative and regulatory limits and deficiencies of environmental law and its regulatory domain, possibly even progressing towards the formulation of second-generation environmental law (something along the lines of what Rose calls the ‘new wave’ of environmental law)<sup>28</sup> that is tailor made for the Anthropocene. The potential of a *Lex Anthropocena* or body of Earth System Law emerging in the process is an exciting prospect with such a taxonomical process predominantly being driven by scholars. In fact, the Earth System Governance Task Force on Earth System Law was established in 2107, and it will formulate proposals related to the ethical, ontological, practical and structural aspects of Earth System Law which involves a fundamental re-ordering and reclassification of the rules governing the Earth system in the Anthropocene.<sup>29</sup> Such an endeavour

<sup>27</sup> See, generally, Gunther Teubner, *Law as an Autopoietic System* (Oxford: Blackwell Publishers, 1993); and in the environmental law context specifically, Andreas Philippopoulos-Mihalopoulos, ‘Critical Autopoiesis: the Environment of the Law’ in Bald de Vries & Lyana Francot (eds.), *Law’s Environment: Critical Legal Perspectives* (The Hague: Eleven International Publishing, 2011) 45–62.

<sup>28</sup> Carol Rose, ‘Environmental Law Grows Up (More or Less), and What Science Can Do to Help’ (2015) 9(2) *Lewis and Clarke Law Review* 273–294.

<sup>29</sup> ‘Task Force on Earth System Law’, Earth System Governance, [www.earthsystemgovernance.org/research/taskforce-on-earth-system-law/](http://www.earthsystemgovernance.org/research/taskforce-on-earth-system-law/).

may very well signal the first scholarly attempts to shape next-generation environmental law.

Second, while some focused categories such as climate change (which are part of the Anthropocene's planetary boundaries imagery) are already said to be providing such a unifying theme,<sup>30</sup> environmental law scholars now have an integrated and all-encompassing framework or reference to more systematically study the role of law in mediating the human-environment interface in a very broad sense – one that in fact demands an integrated consideration of all nine planetary boundaries. The Anthropocene and its planetary imagery relate to the entire Earth system, which is far more holistic than the silo-based problem objectification frameworks or categories such as ocean acidification, air pollution and water pollution that environmental law scholars have been employing to date. This might potentially overcome criticism related to fragmentation often levelled against environmental law and its scholarship. Moreover, the idea of an integrated Earth system usefully points to the problem of fragmenting, for the sake of law and governance purposes, the Earth into separate jurisdictional areas, instead of allowing for more fluid, transnational, polycentric and reflexive forms of law and governance that resonate with an integrated and causally linked Earth system. The steady emergence of the field of transnational environmental law, exemplified in this instance by its specialized journal among others,<sup>31</sup> is perhaps already an indication of a broader recognition by environmental law scholars of the need to invite a systems approach into the domain of environmental law scholarship which could contribute to overcoming the barriers of siloism, fragmentation and compartmentalization.<sup>32</sup>

Third, the Anthropocene revolves around the centrality of *Anthropos* (the human), which forces recognition and acceptance of human centrality in dislodging the Earth system, as well as law's complicity in deliberately creating and maintaining privileging hierarchies that are being sustained by and through law:

<sup>30</sup> See Daniel Farber, Chapter 10, this volume.

<sup>31</sup> *Transnational Environmental Law*.

<sup>32</sup> Although, admittedly, the debate on the scope and advantages of a transnational approach to environmental law should not be overdrawn, as it arguably is not unconditionally beneficial to a clear and focused future taxonomical development of environmental law. After all, the proponents of transnational environmental law often paint it as including all public and private norms at all geographical levels directly and indirectly related to the environment: if everything is transnational environmental law, then nothing is.

[S]uch hierarchies implicate a systemically privileged juridical ‘human’ subject whose persistence subtends – to a significant and continuing extent – the neoliberal global juridical order as a whole, and that these hierarchical commitments also significantly undermine the ability of the international legal order to respond to climate crisis, environmental degradation and the intensifying imposition of structural disempowerment on vast and growing numbers of human beings.<sup>33</sup>

Through the lens of the Anthropocene, the prevalence and persistence of anthropocentrism and associated patterns of neo-liberal socioeconomic development that must meet the present and future needs of (some privileged) humans at all (ecological) cost, including the myriad resulting inter- and intra-species injustices occurring as a result of the foregoing, are brought to the fore. Confronting the persevering and overpowering *Anthropos* and the many hierarchies that are promoted through law, including the many failures and deficiencies of law to counter such impulses, will be a main challenge to environmental law scholars in future.

Fourth, related to all the foregoing, the Anthropocene is useful to environmental law scholars because it brings with it a set of scientifically more robust assumptions to the table, which require less proof (or which have already been proven in other scientific fields) and which could be utilized to contextualize and/or justify legal analysis. These include, among others, the fact of human domination, the extent and consequences of human domination and the integrated nature of the Earth system.

One way to start thinking about the possible ways in which environmental law scholarship could embrace the foregoing epistemological, ontological, regulatory, scholarly and methodological challenges and opportunities presented by the Anthropocene is to focus on the three main areas of concern suggested earlier that I believe currently bedevil environmental law scholarship.

#### 4.1 *Transdisciplinarity, Integration and Transnationality*

The Anthropocene will require environmental law scholars to discard the prevailing understanding of environmental law and its fragmented, mono-disciplinary and nation-state-focused methodologies and epistemological assumptions. It will instead require a conscious effort to

<sup>33</sup> Grear, ‘Deconstructing Anthropos’, 227.

imagine and to resituate our scholarship within a newly conceptualized notion of Earth system law. The view that environmental law scholarship has been a decidedly mono-disciplinary, nation state-focused and silo-based exercise that operates within neatly confined political, legal and geographical boundaries is now generally accepted. As Chapron et al. say:

[T]he use of ‘non-legal’ sources in legal scholarship has historically been considered inappropriate in many legal cultures. Further, because co-authored publications are unusual in the legal academy and are often discounted by law faculties, legal academics may be discouraged from participating in interdisciplinary scholarship. We believe stubborn walls between disciplines must now be torn down as an increased collaboration between legal scholars and conservation academics is urgently needed.<sup>34</sup>

The Anthropocene arguably does not only require lawyers to collaborate with political scientists and ecologists in an ad hoc fashion. The move towards transdisciplinarity should be far more profound. What might instead be critical would be the creation of an entirely new legal discipline which ‘transcends traditional disciplinary boundaries, which are barriers to effectively addressing environmental problems’.<sup>35</sup> This would represent a convergence of transdisciplinarity around the *problematique* of the Anthropocene. It is one ‘in which there is the development of a “transcendent language, a meta-language, in which the terms of all the participants’ languages are, or can be, expressed”’; it concerns ‘the development of a new ambitious intellectual paradigm of environmental studies’.<sup>36</sup> Such a new legal discipline could be Earth System Law.

A systems approach to the re-imagination and reconceptualization of environmental law and its accompanying scholarship is in part driven by the realization that the Anthropocene invites a holistic perspective on a globally interconnected and reciprocally related Earth system; Earth system changes; and the connection between the Earth system, its changes and the increasingly globalized human social system and the impact of humans on the Earth system. The expanding human social system is a result of globalization, and it has become a central feature of the Anthropocene.<sup>37</sup> More particularly, the ‘planetary-scale social-ecological-geophysical system’ interrelationship underlying the

<sup>34</sup> Chapron et al., ‘Bolster Legal Boundaries to Stay within Planetary Boundaries’ 4.

<sup>35</sup> Fisher et al., ‘Maturity and Methodology’.

<sup>36</sup> *Ibid.* 234.

<sup>37</sup> Frank Oldfield et al., ‘The Anthropocene Review: Its Significance, Implications and the Rationale for a New Transdisciplinary Journal’ (2014) 1(1) *The Anthropocene Review* 1–7 at 4.

Anthropocene and its human-inclusive view of the Earth system suggest that human-driven socioeconomic processes are becoming an integral part of natural Earth system process<sup>38</sup> and are able to change the Earth system in profound ways. While the ‘global’ imagery of the Anthropocene should not be generalized by implying that the same socioecological conditions occur and are experienced by everyone everywhere in exactly the same way, the arrival of the Anthropocene arguably requires of us to start thinking about law, politics and social ordering in planetary terms: ‘discussions of the Anthropocene necessarily require thinking at the scale of the biosphere and over the long term. This is a planetary issue, matters at the large scale require some consideration of ethical connection and, perhaps, the implicit invocation of a single polity, however inchoate.’<sup>39</sup>

One way to think about law revolving around a single global polity in planetary terms is through the lens of Earth system science, and more specifically through the lens of Earth system governance. Recognizing the connectivity, nonlinearity, and complexity of socioecological processes, Earth system science is concerned with the ‘study of the Earth’s environment as an integrated system in order to understand how and why it is changing, and to explore the implications of these changes for global and regional sustainability’.<sup>40</sup> Fundamentally rooted in Earth system science, Earth systems governance has been developed as a reactive counter-narrative to localized, state-based and narrowly focused regulatory approaches to environmental issues through the trite application of an issue-specific environmental law regime that focuses on pollution control, nature conservation and wildlife, among others, and that predominantly employs formal, state-based law and state institutions.

With reference to a more open, holistic, flexible, multi-scalar, and multi-actor regulatory approach that is better able to capture and address the many complex global developments that transform the biogeophysical cycles and processes of the Earth system, the complex relations between global transformations of social and natural systems and

<sup>38</sup> Will Steffen et al., ‘The Anthropocene: From Global Change to Planetary Stewardship’ 2011(40) *Ambio* 739–761 at 740.

<sup>39</sup> Simon Dalby, ‘Anthropocene Ethics: Rethinking “The Political” after Environment’. Paper presented at International Studies Annual Convention, Montreal, Canada, 2004. Available at [www.yumpu.com/en/document/view/42485216/anthropocene-ethics-rethinking-the-political-after-environment/3](http://www.yumpu.com/en/document/view/42485216/anthropocene-ethics-rethinking-the-political-after-environment/3).

<sup>40</sup> Ada Ignaciuk et al., ‘Responding to Complex Societal Challenges: A Decade of Earth System Science Partnership (ESSP) Interdisciplinary Research’ (2012) 4 *Current Opinion in Environmental Sustainability* 147–158 at 147.

the multi-scale consequences of ecological transformation, Biermann et al. define Earth system governance as follows:

[T]he interrelated and increasingly integrated system of formal and informal rules, rule-making systems and actor networks at all levels of human society (from local to global) that are set up to steer societies towards preventing, mitigating and adapting to global and local environmental change and, in particular, earth system transformation.<sup>41</sup>

Earth system governance clearly is not only concerned with ways to influence and direct the Earth system (the governance of aspects of technological innovations that are able to change the Earth system might resort under its ambit): '[E]arth System governance is [also] about the human impact on planetary systems. It is about the societal steering of human activities with regard to the longterm stability of geobiophysical systems.'<sup>42</sup> Because law is particularly adept at steering human behaviour, it is a crucial aspect of Earth system governance. Any Earth system governance-based regulatory response, including its juridical elements, must respond to persistent Earth system uncertainty; nurture new responsibilities and modes of cooperation as a result of inter- and intra-generational, spatial and socioecological interdependence between people, countries, species and generations; respond to the functional interdependence of different aspects of the Earth system and Earth system transformations; respond to the needs of an increasingly integrated globalized society; and respond to extraordinary degrees of socioecological harm.<sup>43</sup>

What does the foregoing mean for environmental law and its attending scholarship? In line with the global imagery of the Anthropocene, the epistemological shift caused by Earth system governance seeks to avoid the state-bound, localized and issue-specific territorial trap to which environmental law is often falling victim. Such a shift also challenges this regulatory territorial trap by suggesting alternative mappings of

<sup>41</sup> Frank Biermann et al., 'Navigating the Anthropocene: The Earth Systems Governance Project Strategy Paper' (2010) 2 *Current Opinion in Environmental Sustainability* 202–208 at 203. See also for a more detailed conceptual analysis, Frank Biermann, '“Earth System Governance” as a Cross-cutting Theme of Global Change Research' (2007) 17 *Global Environmental Change* 326–337; and more recently, Frank Biermann, *Earth System Governance: World Politics in the Anthropocene* (Cambridge, MA: MIT, 2014).

<sup>42</sup> Frank Biermann, 'The Anthropocene: A Governance Perspective' (2014) 1(1) *The Anthropocene Review* 57–61 at 59.

<sup>43</sup> Biermann, 'Earth System Governance', 329–330.

social and political phenomena on a planetary scale that might contribute to better understanding and responding to contemporary regulatory transformations in the Anthropocene.<sup>44</sup> In so doing, the Anthropocene challenges the ‘cartographic imagination of the social sciences’<sup>45</sup> and more specifically of environmental law, by inviting a global regulatory perspective that acknowledges the interconnectedness and reciprocity of Earth system processes and phenomena – a perspective that moves away from an issue-specific governance approach to a more holistic one.<sup>46</sup> It is also a perspective that discards the prevailing primacy of localized and territorially bound administrative categories of the (local) nation-state that are used to govern global environmental problems (such as climate change),<sup>47</sup> and a perspective that sees the regulatory space not only as one defined by sovereign territories but increasingly as one that is also being shaped transnationally by global environmental phenomena, change and regulatory institutions of which laws is a critical part.<sup>48</sup> An intrinsically rooted regulatory advantage of thinking about environmental issues in these interconnected global Earth system terms is that we are able to ‘build a unified political project, based upon the common ecological fate we all share’.<sup>49</sup>

Through the Anthropocene’s lens and in tandem with the Earth system governance metaphor, it becomes possible to envision an inter-meshed global regulatory space for law that must address a whole range of multilevel, reciprocal and interconnected regulatory socioecological problems. This space also includes various governance levels, normative arrangements and multiple state and non-state actors, which manifest in a multilevel spatial (geographic), temporal (applicable to present and

<sup>44</sup> Simon Dalby, ‘Geographies of the International System: Globalization, Empire and the Anthropocene’ in Pami Aalto, Vilho Harle & Sami Moisio (eds), *International Studies: Interdisciplinary Approaches* (London: Palgrave Macmillan, 2011), 126.

<sup>45</sup> *Ibid.* 143.

<sup>46</sup> Hill notes that ‘there is an increasing focus from the global change community on the need for human society and the governance systems that moderate our actions and decisions to operate within multiple inter-connected earth systems.’ Margot Hill, *Climate Change and Water Governance: Adaptive Capacity in Chile and Switzerland* (New York: Springer, 2013), 5.

<sup>47</sup> Dalby, ‘Geographies of the International System’, 144.

<sup>48</sup> Hans Günter Brauch, Simon Dalby & Úrsula Oswald Spring, ‘Political Geoecology for the Anthropocene’ in Hans Günter Brauch et al. (eds), *Coping with Global Environmental Change, Disasters and Security Threats, Challenges, Vulnerabilities and Risks* (New York: Springer, 2011), 1453.

<sup>49</sup> Mark Whitehead, *Environmental Transformations: A Geography of the Anthropocene*, Kindle edition (Abingdon: Routledge, 2014), 481.



future generations) and causal setting (interacting Earth system processes). Ideal characteristics of this global regulatory space could include global hybrid law (including adaptive and interacting legal and quasi-legal structures); multi-scalarity where a range of state and non-state actors in a variety of interactions contributes to internalize norms trans-nationally through a process of interpretation, internalization and enforcement; multidisciplinary and ultimately, greater regulatory responsiveness to better address the type of socioecological transformations that characterize the Anthropocene.<sup>50</sup>

#### 4.2 *Confronting Anthropos*

Acting as a collective term encapsulating the apocalyptic exigencies of many single issues through its expression of urgency, the Anthropocene 'is a concept which is perhaps big enough to urge transformation on the level of values and ontology in a way that could never have happened in response to one singular societal or environmental challenge, from globalization to climate change.'<sup>51</sup> To this end, the Anthropocene's ontological turn usefully emphasizes the critical need to discard notions of neo-liberal anthropocentrism, both as the underlying foundation of our regulatory responses (including that of environmental law) and as an assumed given that cannot and should not be criticized by scholars. In short, the Anthropocene urges environmental law scholars to speak up and to speak out against pervasive neo-liberal anthropocentrism and to more fully embrace notions of ecocentric Earth system care and integrity that would at once serve to foster greater inter- and intra-species socioecological justice.

To the extent that we need to change human behaviour as a matter of moral inter- and intra-generational and inter-species responsibility, we will also have to revisit our socio-juridical institutions that mediate the human-environment interface, including the ethical and moral foundations of these institutions. As the Amsterdam Declaration on Global Change suggests: '[A]n ethical framework for global stewardship and

<sup>50</sup> Hari Osofsky, 'Scales of Law: Rethinking Climate Change Governance', PhD thesis, Oregon University (2013), 45–49, available at [https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/13297/Osofsky\\_oregon\\_0171A\\_10730.pdf?sequence=1](https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/13297/Osofsky_oregon_0171A_10730.pdf?sequence=1).

<sup>51</sup> Helen Pallett, 'The Anthropocene: Reflections on a Concept-Part 1', Topograph: Contested Landscapes of Knowing: Blogspot, available at <http://thetopograph.blogspot.de/search?updated-min=2013-01-01T00:00:00-08:00&updated-max=2014-01-01T00:00:00-08:00&max-results=14>.

strategies for Earth System management are urgently needed. The accelerating human transformation of the Earth's environment is not sustainable.<sup>52</sup> In fact, if we accept that '[T]he collapse of any credible distinction between humans and nature forces humanity to modify ethical codes or political aspirations',<sup>53</sup> as is currently the case in the Anthropocene, then an Anthropocene ethic of care that is instead cast in limits-on-growth terms is probably long overdue. One of the clearest ways to give expression to such an ethic is through law and the type of scholarship we practice.

Law is an expression of society's shared ethics. Law is crafted as a result of being based on a specific ethic; law has a distinct ethical orientation that is broadly reflective of a certain attitude that members of society have towards each other as well as of the attitude towards other non-human, but living, and nonliving constituents of the Earth system. Environmental law likewise derives its legitimacy in part from ethics, where a specific ethical orientation steers environmental law and associated institutions and processes to achieve a specific outcome; ethics justify the existence of an environmental law system; ethics determine the relationship between environmental law and other socio-institutional regulatory institutions such as religion; and ethics help to determine the rules that structure environmental law.

To date, there is neither any systemized and generally accepted ethical framework that has gained universal acceptance for the purpose of the Anthropocene (although some, like Kim and Bosselmann, have made tentative proposals in this regard)<sup>54</sup> nor is any Anthropocene-specific ethic currently expressed through environmental law. Questions pertaining to what is right and wrong, just and unjust, and the multiple potential duties and responsibilities vis-à-vis the Earth system that are suitable for the Anthropocene are increasingly being asked. The formulation of an ethical framework has accordingly just begun, and it will likely continue along an undulating path of which neither the direction nor the final destination is yet clear.

<sup>52</sup> 'Amsterdam Declaration on Global Change', available at [www.colorado.edu/AmStudies/lewis/ecology/gaiadeclar.pdf](http://www.colorado.edu/AmStudies/lewis/ecology/gaiadeclar.pdf).

<sup>53</sup> Simon Dalby, 'Ecology, Security, and Change in the Anthropocene' (2007) 8(2) *Brown Journal of World Affairs* 155–164 at 161.

<sup>54</sup> They convincingly propose that ecological integrity should become the *Grundnorm* of the international environmental law order in the Anthropocene. See Rakhyun Kim & Klaus Bosselmann, 'International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements' (2013) 2(2) *Transnational Environmental Law* 285–309.

While the precise content of an Anthropocene ethic is (still) unclear, it is possible at this stage to speculate about this ethic's general orientation. The central tenet of much of the work that is concerned with formulating an Anthropocene ethic revolves around key themes such as ecological resilience, ecological integrity, greater human responsibility, ecocentrism, and inter- and intra-species justice.<sup>55</sup> These broader themes collectively suggest that an Anthropocene ethic should be turning its back on the orthodox preservationist ethos that is cast in traditional environmentalism, and often in neo-liberalist terms, where wealth creation is solely dependent on the transformation of the Earth and its resources from their natural forms and on the conservation of these resources for human benefit. If one accepts that the Anthropocene is the clearest expression yet of anthropocentric behaviour and its effects, and that anthropocentrism is the main cause of the current socioecological crisis as some believe it is,<sup>56</sup> an Anthropocene ethic should be discarding palliatives such as weak sustainable development and the pervasive constructions of anthropocentrism that are permeating law and other regulatory institutions, thus working to reinforce claims for a universal morality and some responsibility to care for the biosphere. This responsibility of care could usefully be considered by scholars through the lens of the Anthropocene which shows us a new living reality of human domination of the biosphere where humans are no longer external observers and beneficiaries of a vulnerable Earth and its system from which they are somehow removed. Humans have become an integral part of a vulnerable biosphere and in the process we are becoming vulnerable ourselves as a result of our own activities and the power we exert over the vulnerable biosphere and its many and varied components.

### 4.3 *Inclusivity and Representivity*

Related to the foregoing is the need for environmental law and its scholarship to more fully embrace the concerns and interests of the marginalized and the oppressed including, for example, nature, non-white people, LGBTQ people, women, children, indigenous people, the poor and more generally people from the Global South – broadly referred

<sup>55</sup> See, for example, Louis Kotzé, 'Human Rights and the Environment in the Anthropocene' (2014) *Anthropocene Review* 1–24.

<sup>56</sup> Already in 1992, Bosselmann succinctly declared that '[D]er Anthropozentrismus ist die tiefste Ursache der ökologischen Krise.' Klaus Bosselmann, *Im Namen der Natur: Der Weg zum ökologischen Rechtsstaat* (Bern: Scherz, 1992), 14.

to as the 'others'. The 'othering' tendencies of law are evident from, among others, 'the late arrival of equality and anti-discrimination laws (inadequately) addressing the oppression of "outsider" subjectivities based on gender, race, age, sexuality – and so forth.'<sup>57</sup> Grear says:

Indeed, the very existence of equality and anti-discrimination provisions are, in a sense, law's own legislative acknowledgement of law's failures of inclusion – a formal (and revealingly flawed) addressal of law's 'otherings'. Moreover, law's othering patterns are profoundly persistent. The arrival of intersectional analysis – an important attempt to expose the mutually reinforcing vectors of oppression implicated in the sheer patterned multiplicity of 'the others of law' reveals an important clue to the crux of the problem: the existence of a particularistic 'human subject' as the 'centre' around which its 'others' struggle for full legal recognition.<sup>58</sup>

Law (including environmental law) is seen to elevate the interests of certain humans (or 'particularistic human subjects') above everything and anyone else, thereby creating profound inter- and intra-species hierarchies and resulting injustices. In so doing, (environmental) law privileges a group of certain privileged humans for which it provides freedom from want and suffering, while allowing them (although I should say 'us' as I am included in this privileged category) to live in pristine environments safely enclosed and protected against the onslaughts of an erratic nature and from the perceived plundering by the poor. This 'identifiable elite' as Grear says,<sup>59</sup> is broadly characterizable as the property-owning, white masculinist legal subject of Northern descent. The fact of environmental law scholarship's own (late) admission to its failures to engender greater inter- and intra-species environmental justice, as well as the steadily emerging body of scholarship focusing on precisely this issue, is testimony to the othering, hierarchical and exclusionary tendencies of environmental law and its scholarship.

Yet, in the same way that the Anthropocene dissolves the human-nature divide, it might very well also dissolve the many privileging hierarches, or at least perceptions of such hierarchies, that are being created by law. As Chakrabarty says: 'there are no lifeboats here for the rich and the privileged.'<sup>60</sup> What would instead be crucial for any future

<sup>57</sup> Grear, 'Deconstructing Anthropos', 231.

<sup>58</sup> *Ibid.*

<sup>59</sup> *Ibid.*, 230.

<sup>60</sup> D. Chakrabarty, 'The Climate of History: Four Theses' (2009) *Critical Inquiry* 197–222 at 221.

vision of Anthropocene law and its attendant scholarship is to be far more critical towards the actual and potential tendencies of law to promote subversive forms of (neo-)colonialism, imperialism, neo-liberal capitalism and exploitation aimed at natural resource extraction for the benefit of the world's privileged. Conscious efforts will also have to be made to dissolve the North-South divide and its related hierarchies,<sup>61</sup> while embracing alternative ways of understanding and confronting the myriad injustices as a result of this divide.

## 5 Conclusion

If environmental law were to remain relevant as an area of scholarship that focuses on and informs the design of regulatory interventions to mediate the human-environment interface, the way in which scholars engage with environmental law will arguably have to become better attuned and more sensitive to the new regulatory realities that are collectively being symbolized by the Anthropocene. The term 'Anthropocene' has the potential, irrespective of its precise formal status as a term of art, to serve as a powerful discursive tool in the production of a new and groundbreaking juridical imaginary and to capture important ground in debates concerning the response of environmental law and its scholarship to human behaviour in a possibly new geological epoch.

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<sup>61</sup> See, among others, C. Gonzalez, 'Bridging the North-South Divide: International Environmental Law in the Anthropocene' (2015) 32 *Pace Environmental Law Review* 407–434.

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