Obligations in the Anthropocene

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Abstract

The Anthropocene is a term described by Earth Systems Science to capture the recent rupture in the history of the Earth where human action has acquired the power to alter the Earth System as a whole. While normative conclusions cannot be logically derived from this descriptive fact, this paper argues that law and philosophy ought to develop responses that are ordered around human beings. Rather than arguing for legal rights or extending rights to nature, this paper focuses on obligations. Drawing on Hans Jonas, it argues that obligations are a more appropriate tool for cultivating human plurality, restraining human action and protecting future generations.

Keywords Anthropocene · Earth systems science · Hans Jonas · Legal rights · Obligations · Rights of nature

Future historians may need to develop expertise in different parts of 2020. Whether examining climate induced disasters such as the Australian bushfires or COVID-19 they will find evidence of the extraordinary impact human beings are having on the planet. Looking more broadly, data continues to be collated showing that we are contravening planetary boundaries and making irreversible changes to the Earth system. Will Steffen (2020a, b), the former Executive Director of the International Geosphere-Biosphere Programme, provided a sobering assessment of our current situation:

Given the momentum in both the Earth and human systems, and the growing difference between the ‘reaction time’ needed to steer humanity towards a more sustainable future, and the ‘intervention time’ left to avert a range of catastrophes in both the physical climate system...and the biosphere...we are already deep into the trajectory towards collapse.

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These comments would not have surprised anyone that has chronicled the rapid deterioration of the planet. And yet it is important to underline that Steffen is not giving an update about increased environmental harm. As one of the key scientists whose work has informed our understanding of the Anthropocene, he is articulating his concern that we have entered a new and dangerous phase in the evolution of our planet. A time when human beings became powerful enough to disrupt the biosphere and set off tipping points that cascade for years to come. This is the context in which human action takes place today and it will remain with us regardless of whether the International Commission on Stratigraphy (ICS) formally adds the Anthropocene to the geological time scale. As noted by the ICS Anthropocene Working Group: 'The Anthropocene already has a robust geological basis, is in widespread use, and indeed is becoming a central, integrating concept in the consideration of global change' (Angus 2016, p. 58).

Because of its widespread currency, the Anthropocene has also given rise to a variety of responses. Focusing just on law, there are proposals related to the rights of nature (Robinson 2014), new approaches to environmental stewardship (Knauß 2018) and a renewed focus on eco-constitutionalism (Kotzé 2019).¹ This essay does not expand on these ideas. Instead, while acknowledging that normative claims cannot be derived from descriptive facts, I argue that the Anthropocene encourages us to think about law and philosophy in a way that is ordered around human beings. Against the current trend toward legal rights, I argue further that obligations are a more appropriate and potentially powerful response to the Anthropocene.

To make this argument my paper proceeds in four sections. First I examine how environmental thinkers like Aldo Leopold draw on the science of ecology to describe human beings as part of a broader living system. Inspired by this work the first wave of environmental lawyers argued that nature had intrinsic value and ought to be recognised as having legal rights. However, while environmental lawyers tend to describe rights of nature in idealistic terms (an idea whose time has come), I argue that there is a political explanation for the proliferation of rights. Specifically, I connect the development of rights of nature to the broader history of rights in the twentieth century and argue that they offer a minimalist alternative to environmental justice claims and can be accommodated within the parameters of extractive capitalism. In support of this argument, I also argue that laws granting rights to nature have proved ineffective in slowing down development and the flow of capital.

Following this analysis, I present a descriptive analysis of the Anthropocene that is grounded in Earth systems science. My intention here is not to foreclose other discourses of ways of thinking about the Anthropocene. However, I contend that any account of the Anthropocene ought to engage the relevant science. Following this, I argue that the Anthropocene challenges some fundamental notions in traditional environmental law. For example, while many environmental lawyers argue against anthropocentrism, I argue that the Anthropocene presents human uniqueness as a descriptive fact. We are the only animal with the power to influence the Earth

¹ For a broader survey of legal responses see Kotzé (2017) and Lim (2019).

system. We might lament this fact, but we also need to come to grips with our power and find ways to exercise it with humility, responsibility and caution.

Legal rights are ill-suited to this task. Rights enable us to externalise the problem and project concepts onto nature. But the problem is not ‘out there’. The problem is with us and we need to place human power at the centre of our legal and ethical frameworks. One way to do this is through obligations. Following Matthews (2019) I argue that obligations are prior to rights and fundamental to human plurality and sociality. To help us grapple with this task, I argue that there is value in looking back to past writers like Hans Jonas. Jonas was one of the first writers to understand how technology had empowered humans to radically alter the biosphere. Traditional ethics are insufficient to manage this shift in the human condition. Rather than seeking protection in rights, Jonas argued that obligations must grow apace to human power and that we need to cultivate deep notions of responsibility for the planet, each other and future generations. In making this argument, I do not present Jonas as sufficient for legal thinking in the Anthropocene. Rather, I argue that he is a ripe and undervalued conversation partner that can help us respond to this most challenging moment in the history of the planet.

Ecology and Legal Rights

In the environmental context, rights-based arguments fall into two main categories: environmental rights (rights of nature) and environmental human rights. Both position legal rights as the mechanism to protect the environment or respond to justice claims around environmental degradation. However, they also have different histories and intellectual underpinnings. Rather than lump them together into a single analysis, in this section I focus on how the science of ecology influenced the movement to recognise nature as a legal person with rights (Burdon and Williams 2016). To be clear, I am not suggesting that ecology prescribed legal rights or that normative statements could be derived from science. However, environmental philosophers and lawyers drew heavily on concepts from ecology when making arguments about the value of nature, its personhood and status as a rights-holder. If this sounds odd it is only because those same thinkers tend² to frame arguments about legal rights in terms of the moral evolution of human consciousness. This presentation is often couched in quasi-religious tones, as can be seen in this statement from Lawrence Tribe (1997, p. 81):

What is crucial to recognize is that the human capacity for empathy and identification is not static; the very process of recognizing rights in those higher vertebrates with whom we already empathize could well pave the way for still further extensions as we move upward along the spiral of moral evolution. It is

² One notable exception is the school of environmental philosophy influenced by Holmes Rolston III. See for example Rolston (1989) and Bosselmann (1995).

not only the human liberation movements—involving first blacks, then women, and now children—that advances in waves of increased consciousness.

Roderick Nash (1989, pp. 5–6) makes a similar argument in his classic text on the rights of nature. For Nash, environmental rights are an extension of human liberation movements and part of the expanding circle of ethics. Moreover, while Nash identifies the 1970s as the key decade when arguments for environmental human rights proliferated, he does not link that to broader trends in politics and political economy. Instead, he offers an idealist explanation that highlights the influence of ecology on law and environmental thinking. Because of the dominance of this narrative it is useful to look briefly at how this argument is presented and survey other key texts that reflect this view.

It is difficult to overstate the influence that the ecological sciences had on environmental legal thinking. The word ecology derives from the ancient Greek οἶκος (oikos) meaning house or home. We can stretch that definition further to incorporate the idea of belonging to a family of kin or intimates (Liddell and Scott 2007, p. 477). One of the first scientific statements of this term came from English botanist Arthur Tansley in 1935. Tansley resisted interpretations that imputed anthropomorphic or familial ideas onto the environment. He grounded his research in hard science and spoke about how energy and chemicals moved through living things (Nash 1989, p. 57).³ Instead of describing these processes in terms of a biotic community, Tansley used the word ‘ecosystem’. The name stuck and was developed further by a host of ecologists that included Eugene and Howard Odum (1953) and Gates (1973).

These pioneers were grappling for language to describe the mutually dependent relationship they observed between living things, non-living matter and solar energy. Very quickly, policy makers took hold of these descriptions of fact and sought to draw out ethical implications. According to Nash (1989, p. 58) the first attempt was made with respect to policies on culling large predators such as ‘wolves, coyotes, mountain lions, bears, and even eagles and prairie dogs.’ In response, advocates like Charles Adams argued that large predators had a right to exist and human beings needed to find a way to co-exist with them (Nash 1989, p. 58). For Adams, the term ‘right’ was a moral claim that was based on the integral role that apex species play in an ecosystem. We are more accustomed to such arguments today. However, it should be stressed that Adams was presenting a new kind of argument that was distinct from anthropocentric justifications for environmental protection.⁴

Human superiority was challenged further by the ecological concept of interdependence. William Wheeler was an early proponent of this idea (Nash 1989, p. 59). His research into ants and termites led him to argue that there existed ‘an inexplicable “social” tendency for wholes to combine...with wholes to form wholes of higher orders’. Wheeler argued that this could be observed at the molecular level and in

³ This is what Aldo Leopold (1993) called the ‘round river.’

⁴ An example can be noted in the writing of wildlife ecologist Olaus Murie (1954): ‘we should go beyond proving the rights of animals to live in utilitarian terms. Why don’t we just admit we like having them around? Isn’t that answer enough?’ Even though Murie is an ecologist, his argument stresses human pleasure and enjoyment.

the social formation of complex organisms such as human beings. Wheeler (1926, p. 434) described this as an ecological community and argued that it created bonds of mutual dependence amongst the constituent parts. Here again we see a slippage from a description of fact and into a moral claim. This is more pronounced in thinkers like Alfred Emerson (1946, p. 9) who argued that ecological insights into interdependence could provide ‘a scientific basis for ethics’.

Such statements reflect a common problem with early approaches to environmental law and ethics—that is, the extent to which they violated Hume’s law (2002) which states that one cannot derive normative conclusions from descriptive facts (Hume 2002, p. 302). We can see the tension here more clearly if we look more closely at environmental thinkers like Aldo Leopold who is arguably the most important theorist for first wave environmental legal thinking.⁵ Leopold’s seminal *A Sand Country Almanac* is explicit in drawing ethical prescriptions from ecology. ‘All ethics’, he argues, ‘rest upon a single premise: that the individual is a member of a community of interdependent parts’ (Leopold 1949, p. 203). This is an organic conception of nature and it proposes that every part has value and contributes to the good of the whole.

Leopold articulated this idea further in a chapter called ‘The Land Ethic’. Here Leopold embodies the voice of an ecologist⁶ and argues that human beings need to shift their perspective from conquerors of the land to ‘plain member and citizen of it’. Ecology, in this interpretation, is a leveller and requires that human beings have ‘respect’ for all parts of the land community. With reference to Hume’s law we might break this argument into the following syllogism: (i) the environment is an interconnected whole; (ii) human beings are part of the environment; (iii) therefore human beings *ought* to behave in a manner that respects the land community. The problem with this reasoning is that the conclusion contains a copula not contained in the premises, namely, ‘ought’. While we might regard Leopold’s advice as sensible and prudent he has missed a critical step in logical deduction.

The missing copula is a common problem in environmental philosophy and law. Subsequent writers have sought to overcome it by reading Leopold as a natural law theorist (Engel 2010, p. 35; Rolston 1986). This overcomes Hume’s law because naturalists draw on moral facts to derive normative conclusions (Shapiro 2011, p. 48). Thus, in this instance, Leopold’s (1949, p. 263) injunction that human beings ‘exercise the same constraints on our relation to the other members of the land community—soils, waters, plants and animals—as we do in our relation to other people’ could be added as a moral fact that completes his syllogism. This is a neat solution; however, it is worth pointing out that Leopold himself never identified as a natural law thinker in any of his writing or public statements.⁷

⁵ Donald Fleming (1972, p. 18) described Leopold as ‘the Moses of the New Conservation impulse of the 1960s and 1970s, who handed down the Tablets of the Law but did not live to enter the promised land’.

⁶ Susan Flander (1979, p. 143) argues that Leopold wrote ‘in a strikingly different manner’ not as an ethicist but as an ecologist.

⁷ Natural law thinking also opens a series of additional problems. See Shapiro (2011, pp. 49–50).

Alongside these statements on ‘respect’, Leopold also promoted the more radical idea that all components of an ecosystem have intrinsic rights. For example, in ‘The Land Ethic’ Leopold (1949, p. 204) argued that soil and water had the ‘right to continued existence’. This was not a utilitarian or an instrumental argument. Instead, Leopold (1949, p. 209) argued that all parts of an ecosystem should be allowed to thrive ‘as a matter of biotic right, regardless of the presence or absence of economic advantage to us’. In this sense, existence determines whether an entity has intrinsic value⁸ and human beings are encouraged to see ourselves, not as unique but as an equal part of a greater whole. In more concrete terms, Leopold (1949, p. 211) argues that humans have ‘obligations to land over and above those dictated by self-interest’.

This notion of a biotic right was ‘intellectual dynamite’ for environmental lawyers and philosophers (Nash 1989, p. 70). And while Leopold himself never turned his moral argument into advocacy for legal rights, subsequent writers developed his ideas in this direction. It is not my intention to provide a descriptive summary of how this argument developed from the 1970s (Burdon and Williams 2016). However, arguably the most important writer to advocate for rights of nature was Christopher D. Stone. Like Leopold, Stone’s ethical worldview was saturated in ecological thinking (Nash 1989, p. 85). However, in the thirty years that separate Leopold and Stone, ideas like interconnectedness and mutual dependence had become normalised amongst environmental thinkers. Stone writes with those assumptions in place and focuses on the moral and legal requirements for expanding legal rights to include ‘forests, oceans, rivers and other so-called “natural objects” in the environment—indeed, to the natural environment as a whole’ (1972, p. 456). His argument also draws explicitly on past liberation struggles and how anthropocentrism has diminished our ability to see nature as anything but a resource for human exploitation. This leads Stone to ponder the conditions upon which those with privilege can see an entity as a subject, worthy of legal rights:

The fact is, that each time there is a movement to confer rights onto some new ‘entity,’ the proposal is bound to sound odd or frightening or laughable. This is partly because until the rightless thing receives its rights, we cannot see it as anything but a thing for the use of ‘us’—those who are holding rights at the time. (Stone 1972, p. 455).

In this passage, Stone is trying to imagine a legal arrangement in which nature was regarded as a legal person. While his argument is grounded in ecology he also puts those ideas into conversation with Lockean social philosophy and American liberalism to argue for an expanded conception of community. This leads to several noteworthy arguments such as suggesting that the State of Alaska should have more congressional representatives because of ‘all those trees and acres, those waterfalls and forests’ (1972, p. 487). And lest readers respond with incredulity, Stone (1972, p. 487) reminds them that the United States’ political system ‘once counted each slave, as three-fifths of a man.’ Nature, according to Stone’s ecological worldview, deserved at least as much.

⁸ See also Berry (2006, p. 149).

It took over thirty years for Stone's argument to gain some traction in law. However, since 2006 we have seen a gradual expansion of rights of nature legislation in county ordinances, state law and even in national constitutions (Burdon 2010; Burdon and Williams 2016; Boyd 2017). While advocates regard rights of nature as a natural corollary to ecocentric law (Cullinan 2011; Berry 2006)⁹ I turn now to consider political factors that explain the rise of legal rights as a tool for responding to the environmental crisis.

Rights and Contingency

As noted in the previous section, advocates for rights of nature tend to ground their argument in ecological thinking and an expansion of human morality. The argument can be summarised as follows: human beings exist as one part of a mutually dependent ecosystem. If we have inherent value and the capacity for legal rights, then so does the rest of nature. Or to quote Thomas Berry (2006, pp. 17–18): 'the world is a communion of subjects, not a collection of objects'.

What this argument tends to obscure is the way rights of nature arguments have been swept up in a broader political turn towards legal rights. This is not because legal rights are always the most appropriate tool for protecting the environment, but because they offer a minimalist alternative that can be accommodated within the bounds of industrial capitalism. Connected to this, advocates for rights of nature also presume that they can mould legal rights to nature without also bringing in ideas such as individualism or dividing the world into discrete parts. These ideas have been connected to legal rights since their inception and exist in tension to the ecological worldview described in the section above. These omissions are understandable. When something is in ascendancy, it can be hard to see the forces that are propelling a movement forward. It is easy to think that you are riding a wave of inevitability and history is propelling the cause forward.¹⁰ However, waves crash and it is important for the long-term health of a movement to have a richer account of the intellectual foundations upon which it is resting.

My starting point for this analysis is recent histories and critiques of human rights law. While I do not want to conflate the history of human rights with rights of nature they are both examples of the ascendancy of legal rights in the second half of the twentieth century. Samuel Moyn (2012), for example, argues that human rights took hold in the 1970s as a counter to other, more radical, demands that were being made by the anti-colonial movement or international communism. Jessica Whyte (2019, p. 6) goes further and argues that human rights 'became the dominant ideology of a

⁹ The other major justification frames rights of nature as a liberation struggle (Campbell and Linzey 2016).

¹⁰ Engel (2014, p. 9) captures this sentiment in his description of the Earth Charter Movement: 'When I put myself back in the heady days of the 1990s, following the Rio Earth Summit and the end of the Cold War, when we seemed to be riding the crest of a wave for growing international cooperation on issues of the environment and sustainable development, and we dared to hope that the Charter might be further negotiated and endorsed by the United Nations General Assembly in the new millennium...'

period marked by the demise of revolutionary utopias and socialist politics'. Further to this argument, Whyte also describes how neoliberal thinkers in the Mont Pelerin Society worked to position human rights as a protection for the market and private sphere (family and church) from social democratic movements. For Whyte (2019, p. 12), human rights are not only compatible with neoliberalism, they were actively promoted to encourage individuals toward self-interest, family responsibility and submission to 'the impersonal results of the market process'. In this way, Whyte (2019, p. 28) argues, human rights became the 'moral language of the competitive market'.

The same thing could be said in response to rights of nature laws. For example, in countries where rights of nature have been legislated, advocates have not sought to challenge fundamentally the prevailing economic system. This presents a significant problem because it is difficult to see how to protect the environment within the confines of capitalist economies. This tension has erupted in countries like Ecuador which, despite its constitutional recognition of nature's rights, continues to extract oil from the Amazon and Yasuni National Park. Similarly, Bolivia has struggled to reconcile legislation for rights of nature with its desire to exploit the 5.4 million tons of lithium that sits below the Salar de Uyuni salt flat. Clearly in these contests, rights of nature arguments are not a substantive or transformative alternative. They are not about displacing growth economics or democratising power in a way that empowers communities or builds resilience. Rather, a right of nature represents a minimalist alternative and seeks to mitigate environmental damage from firmly within the coordinates of the current system. And, to date, it is proving radically ineffective.

This leads to my second point. Contemporary legal rights are fundamentally liberal rights and they took shape alongside the birth of the individual (Siedentop 2015, p. 333), an abstract commitment to formal equality (Eleftheriadis 2008, p. 2) and the rise of legal positivism.¹¹ This latter point is neatly captured by Bentham's description of natural rights as 'nonsense upon stilts'. Increasingly during the eighteenth century, rights were formalised in legislation and national constitutions to limit the role of government and protect the sphere of the individual (Siedentop 2015, p. 334). A lot has changed about the nature and function of legal rights but this basic goal remains true today. Thus, for example, Joseph Raz (1986, p. 250) contends that rights 'mark matters which are of special concern' to the individual and are special for this reason.

With that background in mind, it is unsurprising that they have been ineffective in slowing the lawful activity of corporate persons or representing the interests of interconnected systems (Livingston 1994, p. 173). While this is never explicitly stated, advocates for rights of nature present rights as a tool that can be shaped into any form and suggest that environmental protection can arise with equal force as the protection of individual human or corporate interests. This is a significant assumption and an example of what Susan Marks (2009, p. 1) calls 'false contingency',

¹¹ For the transition from 'ius' to 'right' as a moral power ('*facultas*') or a 'liberty' see Finnis (2008, pp. 206–210). See also Bentham (2002, p. 317).

the notion that our thinking can be constructed outside of ‘systemic constraints and pressures’.

For our purpose, it means that lawmakers do not have boundless freedom to determine who or what is a rights holder and the content of those rights. One way those limits are revealed is in the way that rights for nature has shown itself to be conducive, not to environmental protection, but to a narrow conception of human flourishing. The ‘nature’ instantiated within rights of nature discourse should also be understood not as exhaustive but as a ‘reflection of extant power relations’ (Golder 2015, p. 87). Thus, when New Zealand declares that the Wanganui river is a legal person with rights, those rights must be interpreted and enforced within existing power relations. While the interests of nature might make inroads at the margins,¹² there has not been a single case where they have challenged economic interests in the river.¹³ Moreover, the definition of the legal person captured by the *Te Awa Tupua (Whanganui River Claims Settlement) Act* (2017) cannot exhaust the meaning of the river itself or the latent possibilities of interpretation which are practiced by the local Maori Iwi.

Advocates of rights for nature omit to engage with the problem of ‘false contingency’ and the material constraints that prevent certain ideas about nature as a rights holder from being realised. Or to express this point differently, while the idea of ‘nature’ that emerges from rights of nature discourse is open to contestation and diverse interpretations, a ‘legal right’ is a specific modality that shapes and limits the definitional possibilities of nature as a rights holder. Advocates of rights of nature cannot offer a blank slate because legal rights are bounded by the modality of rights and the historic meaning that people have brought to that term. This is true for any legal idea we seek to apply to the environment but ‘rights’ appear particularly limited and susceptible to be arranged in a way that promotes economic growth over environmental protection.

The Anthropocene

Having described the influence of ecology on rights of nature advocacy and the limitations of that approach I turn now to the Anthropocene.¹⁴ In this section, my primary objective is to describe the Anthropocene from the perspective of Earth systems science. In so doing, I also contend Earth systems science has superseded many of the insights from ecology in which advocates of the rights of nature ground their advocacy. I also contend that most advocates of ecological law tend to use the term ‘Anthropocene’ as a synonym for the extreme impact human beings are having on the environment. Few go further and consider whether the

¹² To date the only development that has engaged the *Te Awa Tupua (Whanganui River Claims Settlement) Act* (2017) has been the Te Rata Bridge suspension bridge. For details see Clark et al (2019).

¹³ This is also true in Ecuador which has had a constitution protection for the rights of nature since 2008. See Berros (2017) and Burdon and Williams (2016).

¹⁴ A shorter version of this descriptive account of the Anthropocene can also be found in Burdon (2020).

intellectual foundations or prescriptive proposals of ecological law have been challenged by Earth systems science.

A lot of ink has been spilled defining the Anthropocene. Perhaps the best and most succinct statement is provided by Clive Hamilton. Hamilton (2017, p. 9) defines the Anthropocene as a ‘recent rupture in Earth history arising from the impact of human activity on the Earth System as a whole’. There is a lot to unpack just in this sentence. Starting with the first word—most accounts date the origin of the Anthropocene from 1950s (Angus 2016, pp. 38–47). Moreover, human beings have only been able to study the Earth as a system since the 1980s. Prior to this we could grasp aspects of the Earth system through systems modelling and arctic ice-core drilling (Hamilton 2017, pp. 10–11; Angus 2016, pp. 29–38). The study of the Earth systems required new technology, such as satellites capable of gathering data around the world and computers that could analyse and transmit that information (Angus 2016, p. 30).

One of the earliest bodies to begin processing and analysing this data was the International Geosphere Biosphere Program (IGBP) which was initiated by the International Council of Scientific Unions in 1986. Drawing on this research, Frank Oldfield and Will Steffen provided the first sophisticated definition of the Earth system. Here is an extract: ‘...the Earth System has come to mean 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’ (Oldfield and Steffen 2004, p. 7). The Earth System also incorporates the metabolism of industrial culture. As the authors note:

Human beings, their societies and their activities are an integral component of the Earth system, and are not an outside force perturbing an otherwise natural system. There are many modes of natural variability and instability within the System as well as anthropogenically driven changes. By definition, both parts of variability are part of the dynamics of the Earth System. They are often impossible to separate completely and they interact in complex and sometimes mutually reinforcing ways. (Oldfield and Steffen 2004, p. 7)

This definition has ideas in common with those articulated in ecology. For example, it articulates our profound connection and ability to influence the health and functioning of the Earth system. And yet it is important to draw distinctions. Ecology studies local and regional ecosystems and presents human beings as a dominant animal. By contrast, Earth System science conceives of the Earth as a total system and presents human beings as capable of influencing and disrupting that whole. This point was captured and expanded upon by Will Steffen (2004, p. 1):

the Earth itself is a single system, within which the biosphere is an active, essential component...Second, human activities are now so pervasive and profound in their consequences that they affect the Earth at a global scale in complex, interactive and accelerating ways; humans now have the capacity to alter the Earth System in ways that threaten the very processes and components, both biotic and abiotic, upon which humans depend.

We can take this one step further to argue that the Anthropocene affirms one aspect of anthropocentrism—human beings are a unique species of animal (Burdon 2020). This does not mean that we are the most important thing in the Earth system—that system will continue to evolve and reproduce itself without us. But claiming human uniqueness as a descriptive fact is a reasonable conclusion to draw from the fact that human beings (the *ἄνθρωπος* in anthropo-centrism) have become a geological force. Even the most committed deep ecologist must either concede this point or mount a scientific argument against a major finding in Earth systems science. It is this fact that has led commenters to insist that the Anthropocene ought to be compared to a paradigm shift (Hamilton 2017, p. 13) or the second Copernican revolution (Angus 2016, pp. 27 & 32) in terms of its importance. Thus, Hans Schellnhuber (1999, p. 23) from the Potsdam Institute for Climate Impact Research stated: ‘This new revolution will be in a way a reversal of the first: it will enable us to look back on our planet to perceive one single, complex, dissipative, dynamic entity, far from thermodynamic equilibrium—the “Earth system”’.

Rather than retreat into an ecological worldview and notions of inherent value and legal rights, I contend that the Anthropocene encourages us to develop environmental ethics and law that begin from and are ordered around human beings. This does not mean that we need to embrace hubris or arrogant statements of human power such as those presented in the eco-modernist manifesto.¹⁵ As discussed in section 3, Hume’s law prevents us from drawing any normative conclusions from descriptive statements of fact. Thus, our response to Earth systems science could also be to develop environmental ethics and law that are grounded in humility, precaution and obligations. Or to put this another way, the Anthropocene simply recognises that human beings are the supreme power in the Earth system. It is up to us to work out ‘what kind of human being stands at the center of the world’ (Hamilton 2017, p. 43).

Obligations in the Anthropocene

So, what would radial reorientation of the human look like in environmental law and philosophy? There is no syllogism that can help us develop policy in response to Earth systems science—a multitude of possibilities are possible. For example, those guided by deep notions of human emancipation (Marx 1978) might recommend strategies to democratise decision-making power or redistribute land so that more people can enact sustainable land-use practices (Rameau 2012). Others have described the importance of empowering first nations people to broaden traditional land practices such as fire farming (Yunkaporta 2019). And there are also multiple proposals to lift legal restrictions on environmental protest (Reynolds et al. 2019) or simply ban new fossil fuel developments (Steffen 2020a, b). Each of these ideas take us beyond the ambit of legal rights which, as Wendy Brown (2004, p. 461) has argued, can ‘organize political space, often with the aim of monopolizing

¹⁵ See <https://www.ecomodernism.org> (accessed 29 October 2019). See also Bennett et al (2016).

it'. Following on from this, I explore the prospects of legal obligations in the Anthropocene.

To date, the foremost exponents of this shift are Kylee McGee (2017, pp. 117–144) and Daniel Matthews (2018, 2019). For McGee (2017, pp. 123–124), obligations arise out of a deeply felt connection to place and the bonds of dependence that are created in a collective. By way of example, McGee (2017, pp. 121 & 132) discusses the fiduciary duty of the Crown to protect Aboriginal title and the public trust doctrine which has found renewed interest in current climate litigation.¹⁶ Matthews takes this analysis further and positions obligations as a tool for responding to the emerging climactic regime. In doing this, he offers a novel reading of Simone Weil's (2001, 2005, pp. 221–230) argument for 'priority of obligations'. While rights and obligations are correlates (Hohfeld 1917), Weil (2005, p. 86; Matthews 2019, p. 13) argues that rights 'hang in the middle air, and for this very reason they cannot root themselves in the earth'. If rights contribute to the 'up rootedness' of the human condition, obligations have the capacity to ground us in place and community. Commenting on the priority of obligations, Weil (2001, p. 2) commented: 'The notion of obligations comes before that of rights, which is subordinate and relative to the former' (2001, p. 2).

While Weil was not writing in the context of the environment, her reasoning has profound implications for our work (as Matthews has identified). For example, in her 'Draft Statement on Human Obligations', Weil (2005, pp. 224–225) wrote:

Obligation is concerned with the needs in this world of the souls and bodies of human beings, whoever they may be. For each need there is a corresponding obligation; for each obligation a corresponding need...Anyone whose attention and love are really directed towards the reality outside the world recognizes at the same time that he is bound, both in public and private life, by the single and permanent obligation *to remedy, according to his responsibilities and to the extent of his power, all the privations of soul and body which are liable to destroy or damage the earthly life of any human being whatsoever*.¹⁷

This is an example of how obligations might root our thinking in place and community. Weil is describing obligations as part of the basic and reciprocal bonds that are necessary for collective living. This is fundamentally a moral point, but Weil argues further that it is a crime to refuse those obligations (2005, p. 225) and that any legal system that does not protect them 'is without the essence of legality' (2005, p. 226). Matthews (2019, p. 12) does not address these aspects of her thinking but he affirms that the privileging of obligations 'offers a radically different "legal screen"...to that offered by rights, mediating social relations in a distinct configuration' (2019, p. 13). I think that this overstates the case and does not engage thoroughly enough with the work on obligations that can be found in positive law.¹⁸

¹⁶ For an overview see <https://climatecasechart.com/principle-law/public-trust-doctrine/>.

¹⁷ The original text is not italicised.

¹⁸ See for example *St. Lawrence Cement Inc. v. Barrette* [2008] 3 S.C.R. 392, 2008 SCC 64. At 976 the Canadian Supreme Court was required to interpret Sect. 976 of the Quebec Civil Code. I am grateful to Robert Gordon of McGill Law School for this reference. For further examples see Raff (2003) and Bur-

and environmental theory.¹⁹ However, his provocation toward obligations as part of the ‘living law’ (Ehrlich 1975, p. 17) that sustains communal relations is a serious contribution to how law might respond to the Anthropocene.

Rather than follow Matthews directly, I want to emphasise the way the Anthropocene can be interpreted as presenting a challenge to enlightenment notions of freedom and morality. While Kant considered freedom to be essential to morality and the human condition, such a pure dichotomy no longer holds (Hogue 2008, p. 191). Earth systems science describes a human subject that is embedded in an earth system—not just a localised ecosystem. This subject has more power than ever before and our freedom is being exercised on a planet that is not passive, but increasingly hostile and unpredictable. This is an anti-humanist perspective in so far as it recognises that our future will be determined as much by the Earth system as by our own choices (Hamilton 2017, p. 54).

We can push this point further to say that in the Anthropocene, the consequences of human agency are planetary. *Contra* Kant, morality is not rooted in freedom but in our embeddedness within the Earth system (Hamilton 2017, p. 52). The accompanying responsibility to care for the Earth is much greater than traditionally expressed in ecological law and it must be actively discharged. It is insufficient to project inherent rights onto nature or look for answers outside of the perpetrators of harm. Human beings must come to terms with our new-found power and concomitant obligations. These elements—power and obligation—can be viewed as two sides of the one coin. And while this reading underlines human uniqueness, it does not celebrate it or view human beings as having exclusive moral standing. As Hamilton (2017, p. 54) explains: the Anthropocene ‘elevates human specialness in order to highlight our powers and their dangers, and so the obligations that go with them’.

In response to this challenge, the weight of current scholarship has looked for answers in ‘post-humanist’ and ‘new-materialist’ studies. Unlike Hamilton (2017),²⁰ I think that there is considerable value in exploring the ways law has emerged from ‘non-hierarchical relationships between persons and things’ (Davies 2017, p. 72). Leopold (1949, p. 241) attempted a similar exercise in natural history. However, in this article, I am immediately concerned with the potential of law to be orientated around human beings and with the obligations we owe to each other and the broader living system. I do not think this focus is negated by the descriptions of entanglement put forward in new-materialist scholarship. As noted above, my contention is not that human beings are the most important element in the Earth system but that we are a unique species with immense power. Whatever complex relations make up the Earth system it is vitally important that we come to terms with this and grapple with its normative implications. To do otherwise would be, as Nietzsche (1989, p. 119) argued, to ‘castrate the intellect’.

Footnote 18 (continued)

don (2014, pp. 101–134). This approach is also implicit in social relations theories of property (Nedelsy 2011, p. 267) and in property theory (Lametti 2003; Babie 2010).

¹⁹ Matthews (2019) implies that rights of nature is axiomatic with Earth Jurisprudence. In contrast see Burdon (2014, pp. 104 & 107).

²⁰ Hamilton (2017) presents a disingenuous and overtly masculine reading of key feminist scholars such as Donna Haraway. This is not a unique observation (Rickards 2017).

To move forward I propose Hans Jonas as a thinker that might fruitfully be put in conversation with current theoretical approaches that are emerging in response to the Anthropocene. Jonas is uniquely placed to contribute to this debate because of the understanding he developed on how technology had unleashed unprecedented human power²¹ and the way he places human beings at the centre of his ethical framework. His book, *The Imperative of Responsibility*, was written at the dawn of the Anthropocene and was one of the first texts to clearly articulate the need for human beings to take responsibility for the future of the biosphere (1979, pp. 7, 136–137). His appreciation for the vulnerability of life was etched into his consciousness during the Second World War. Here Jonas was a member of the Jewish Brigade of the British Army and volunteered for combat duty. Commenting on this experience, Jonas (1980, p. xii) wrote:

The apocalyptic state of things, the threatening collapse of a world, the climatic crisis of civilization, the proximity of death, the stark nakedness to which all the issues of life were stripped, all these were ground enough to take a new look at the very foundations of our being and to review the principles by which we guide our thinking on them.

Influenced by these experiences, Jonas sought to construct a theory of moral responsibility that was applicable to both the public and the private sphere. As noted, Jonas recognised that new technologies have given humanity power to cause enormous harm to other humans, to future generations and to the balance between humans and nature. In language that prefigures the Anthropocene, Jonas wrote:

Modern technology, informed by an ever-deeper penetration of nature and propelled by the forces of market and politics, has enhanced human power beyond anything known or even dreamed of before. It is a power over matter, over life on earth, and over man himself; and it keeps growing at an accelerating pace. (1979, p. ix).

Jonas correctly identified that Kantian notions of freedom and morality provided an insufficient response to these circumstances. ‘All previous ethics’, argued Jonas (1979, p. 1)

had these interconnected tacit premises in common: that the human condition, determined by the nature of man and the nature of things, was given once and for all; that the human good on that basis was readily determinable; and that the range of human action and therefore responsibility was narrowly circumscribed.

By the 1970s the ground had already shifted out from under each of these ideas. Moreover, since ethics is about human action, Jonas argued that the ‘qualitatively novel nature of certain of our actions has opened up a whole new dimension of

²¹ On Heidegger’s influence on Jonas see Wolin (2001). It is interesting to compare Jonas’s views here alongside his contemporary, Hannah Arendt (2006, p. 273).

ethical relevance for which there is no precedent in the standards and canons of traditional ethics' (1979, p. 1).

Rather than advancing a theory of rights, Jonas focused on restricting human action. This is a challenging endeavour because Jonas felt that our glorification of science and technology had led to an ethical vacuum: 'A nihilism in which the near-omnipotence is paired with near-emptiness, greatest capacity with knowing least for what ends to use it' (1979, p. 23). We are in a state of emergency, but without the tools to deliver ourselves from it. However, despite this, he argued that the 'lengthened reach of our deeds' pushed obligations into the 'center of the ethical stage'.²² Put another way, the 'ought' or 'obligation to do' or 'restrain from doing' arises when we consciously exercise self-control: 'In sum: that which binds (free) will and obligation together in the first place, power, is precisely that which today moves responsibility in[to] the centre of morality' (1980, p. 130). In addition to this, Jonas argued that the human capacity to take on obligations for others, placed us in a unique position to care for and maintain the world for future generations. He called this the 'ontological imperative' or 'man's ought-to-be' (1996, p. 108).

Who or what are the objects of obligation? Jonas argues that we owe our first duties to other living things. In saying this, he recognises the value and moral integrity of life. However, Jonas stops short of claiming that inanimate objects or the planet can be a subject of moral concern. Rather, to be an 'object' in moral terms, Jonas (1980, pp. 86–90) maintained the traditional claim that the object must have the capacity for reciprocity and moral reasoning. Thus, his extension of obligations to the environment does not depend on an expansion of moral subjectivity. Instead, Jonas put forward a 'speculative' account of the human condition that is secular and commensurate to our power (1980, p. x). Central to this image is a human being whose survival, humanity and dignity are both dependent on and developed in association with the environment. Environmental destruction not only jeopardises our future flourishing but leads to an atrophy of our essence (1980, p. 136).²³ Jonas argued further:

Ourselves being among [Nature's] children, we owe allegiance to the kindred total of her creations, of which the allegiance to our own existence is only the highest summit. This summit, rightly understood, comprises the rest under its obligation.

Jonas thus avoids the need to make inanimate things the objects of moral responsibility by constructing a view of the human condition that is embedded and integrative. Human beings remain the central objects of moral concern but we can only discharge our responsibilities and obligations by having concern for the whole. Prue Taylor (2010, p. 209) captures this point as follows: 'rediscovering our own dignity

²² Jonas always describes responsibility and obligations as an option (1996, p. 108). This means that he does not contravene Hume's law as described in Sect. 2.

²³ This line of reasoning is reminiscent of Locke (1996, p. 90) who argued against animal cruelty because it 'will, by Degrees, harden their Minds even towards Men'. For a similar analysis of Kant see Ott (2008).

within nature requires us to care for nature's integrity over and above utilitarian needs'.

In making these arguments, Jonas was at pains to describe responsibility and obligations as an 'option' (1996, p. 108). He was too shrewd a philosopher to contravene Hume's law and position obligations as a syllogistic response to human power. To activate this option, Jonas relied on human emotion and imagination. He recognised that we can intellectually comprehend the need for obligations, but ultimately, our hearts and minds must actively respond. To this end, Jonas (1979, p. 85) wrote:

Not duty itself is the object; not the moral law motivates moral action, but the appeal of a possible good-in-itself in the world, which confronts my will and demands to be heard—in accordance with the moral law. To grant that appeal a hearing *is* precisely what the moral law commands: this law is nothing but the general enjoinder of the call of all action-dependent 'goods' and of their situation-determined right to just my action. It makes my duty what insight has shown to be, of itself, worthy of being and in need of my acting. For that enjoinder to reach and affect me, so that it can move the will, I must be receptive for appeals for this kind. Our emotional side must come into play. And it is indeed of the essence of our moral nature that the appeal, as insight transmits it, finds an answer in our feeling. It is the feeling of responsibility.

Thus, while obligations can be rationally advanced, their acceptance and enactment ultimately depends on cultivating feelings of care and concern for the plurality in which we are immersed. Jonas's focus on other human beings has been criticised for its anthropocentrism (Morris 2013, pp. 129–130; Taylor 2010, p. 209). However, that is not a problem for my argument because I contend that the Anthropocene encourages us to develop theory that is ordered around human beings.

In advancing Jonas's writing on obligations, I am not holding him out as a panacea to our problems. Rather, I position his writing as part of the lost narrative on obligations that was pushed to the side with the rise of rights-talk. There is also much in Jonas that we might jettison—for example, his advocacy for the intrinsic value of nature and an almost teleological description of the 'phenomenon of life'. Moreover, while Jonas understood how technology had increased human power, his writings do not fully come to terms with the power and agency in the Earth system. He may also overstate the extent of human agency and freedom in the context of an Earth system that is increasingly unpredictable. In these respects, Jonas (like Simone Weil) is a thinker of his time. And yet, I contend that his work has a lot that it can teach us about responsibility and obligations that is relevant to how law might respond to the Anthropocene.

Conclusion

In this essay, I have argued that environmental law and philosophy should shift from focusing on rights and towards obligations. To make this argument, I examined how environmental law took inspiration from the science of ecology and presented human beings as an equal part of a broader ecosystem. Drawing on these descriptive

facts, environmental lawyers and philosophers sought to project notions of intrinsic value and legal rights onto the environment. While this started as a discrete movement, advocacy for the rights of nature was swept up in the broader ascendancy of legal rights in the latter part of the twentieth century. However, while examples of rights of nature can be found in law around the world, to date, the idea has had minimal impact on environmental protection. I argued that this was because rights are a minimalist tool that perpetuate individualism and can be accommodated within the bounds of industrial capitalism.

Following this analysis, I presented Earth systems science as a paradigm shift in terms of importance. It encompasses notions of localised interdependence and presents human beings as subjects with the power to alter the Earth system as a whole. In the Anthropocene, human beings have more power than ever before and our actions are hosted by an Earth system that also has more power circulating through it and is increasingly volatile. Faced with these circumstances, I argued that environmental lawyers and theorists ought to embrace elements of anthropocentrism and develop responses to the Anthropocene that place human beings at the centre of our thinking. This does not mean that human beings are the most important element in the Earth system. However, it recognises our uniqueness as a species of animal. Moreover, in making this argument I sought to differentiate a descriptive affirmation of human uniqueness from the normative claim that only human beings have value or are subjects worthy of moral concern.

This provocation opens numerous possibilities beyond the horizon of legal rights. However, in this article I focused on the potential of legal obligations to restrain human action and guard against hubristic responses to the Anthropocene. While there is a significant literature on obligations in environmental philosophy and political theory, I focused on the work of Hans Jonas. Jonas is complex thinker and his scholarship is especially sensitive to the ways technology and human power have created new ethical challenges that cannot be accommodated in traditional ethics. In this context, Jonas provides insight into how norms of responsibility and obligations could be cultivated for the protection of our planet, communities, and future generations. He is also a useful counter to arrogant descriptions of human power that are being perpetuated in response to the Anthropocene. Indeed, unless we learn to temper our power with humility, responsibility and obligations for others, we will fall prey to our power as geological agents.

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