FROM GLOBAL TO ANTHROPOCENIC ASSEMBLAGES: RE-THINKING TERRITORY, AUTHORITY AND RIGHTS IN THE NEW CLIMATIC REGIME

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Mass extinctions, the melting of ice caps, rapid acidification of the oceans, and extreme weather events all signal the gravity of the contemporary climate crisis. So great has the human impact on the earth's natural systems become that many suggest that we have entered a new geological epoch: the Anthropocene (from *anthropos* 'human' and *kainos* 'recent'). This postulated 'human age' speaks to the dominant role that human activity – in the form of production, consumption and habitation practices – now has within the planetary climate system. The vast scale of human activity is now thought to rival the 'great forces of nature in its imprint and functioning of the earth system'[2] and the trace of these activities will be readable within the earth's deep history for millennia to come. Whilst this new epoch is yet to be formally recognised within the official fora of stratigraphic and geological science, the contention that human action has taken on a planetary significance, able to shape the earth's biogeochemical systems and processes, has stirred widespread debate across the natural sciences, social sciences and humanities, testifying to the fact that the newly volatile climatic system heralded by the Anthropocene thesis presents human civilisation with unprecedented challenges. And yet, in the context of legal and political theory, these challenges are only beginning to be addressed.[3] As accounts of the changing nature of legal and political forms in the prevailing conditions of globalisation continue to proliferate, commensurate energy has not been dedicated to the challenges augured by the 'dark side' of globalisation: the reality of a dramatically changing planet.

In recent years vast literatures have formed that assess alterations to social life under the conditions of neoliberal globalisation. This scholarship has generally focused on changing governmental competencies, tracking the various powers that have been ceded to a range of non-state actors. Studies have traced the plurality of jurisdictions that have become more or less unmoored from state law; the rise of supranational structures that 'pool' state sovereignty; and the increasing significance of private power in the administration of once public services like

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[2] Will Steffen et al., 'The Anthropocene: Conceptual and Historical Perspectives' *Philosophical Transactions of the Royal Society* (2011) 369, 842-867.

[3] There are, of course, exceptions. Within politics and political theory see (indicatively): Jedediah Purdy, *After Nature: A Politics for the Anthropocene* (Cambridge MA: Harvard University Press, 2018); Elizabeth Johnson, Harlan Morehouse (eds.) "After the Anthropocene: Politics and Geographic Inquiry for a New Epoch" *Progress in Human Geography* (2014) 38(3), 439-456; Elizabeth L. Povinelli, *Geontologies: A Requiem to Late Liberalism* (Durham: Duke University Press, 2016); William E. Connolly, *Facing the Planetary: Entangled Humanism and the Politics of Swarming* (Durham: Duke University Press, 2017); within international law and legal theory see (indicatively): Davor Vidas *et al*, "What is the Anthropocene – and why is it relevant to international law?" *Yearbook of International Environmental Law* (2016) 25(1), 3-23; Davor Vidas, "The Anthropocene and the International Law of the Sea" *Philosophical Transactions of the Royal Society* (2011) 369, 909-925; Anna Grear, "Deconstructing *Anthropos*: A Critical Legal Reflection on 'Anthropocentric' Law and Anthropocene 'Humanity'" *Law and Critique* (2015) 26(1), 225-249; L. J. Kotzé (ed.) *Environmental Law and Governance for the Anthropocene* (Oxford: Hart, 2017); Margaret Davies, *Unlimited Law: Materialism, Pluralism and Legal Theory* (Abingdon: Routledge, 2017).

education, health, prisons and security.[4] Though offering an analysis of purportedly new developments in law and politics, these debates rely on a conceptual framing that continues to bear the distinctive hallmarks of modern political thought. Neil Walker makes this point explicit in his survey of 'global law',[5] arguing that postnational constitutionalism (with its emphasis on the constitutive, social and cultural forces that produce legitimacy) and postnational public law (with its emphasis on the forms of constituted regulatory schemes in new 'state-like' sub- and supra-national institutions) both remain committed to an expressly modernist horizon. These globalist schemes champion individual autonomy and equality whilst seeking to limit any encroachment on such freedom and equality through general norms and objective standards.[6] The enduring force of this modern heritage goes further still. As Walker comments: 'in the final analysis, the global division of the world into particular polities remains inevitable, but the particular form that such a division takes is not so; rather it is contingent upon shifts in the underlying circuits of social and economic power'.[7] This view retains the contention, distinctive to the legal and political presuppositions of modernity, that human actors have the capacity to break free from a range of 'natural attachments' in order to create new political forms that respond to the shifting sands of social and economic life. 'The world', in Walker's view, is something *on which* human communities live and something *over which* human polities of the future might claim control. In this sense, Walker continues to work within what Peter Sloterdijk has called the 'backdrop ontology'[8] that defines the moderns' worldview: the natural world is conceived as a largely immobile scenography that simply provides the staging for human political dramas. But the Anthropocene tells us that the backdrop is beginning to move, the scenery and props have come to life.

The Anthropocene thesis contends that human communities are acting *within,* not *set against*, a range of biogeochemical processes revealing the earth's capacity to both affect and be affected by human collective action. As the climate system becomes increasingly unstable, and vertiginous change becomes possible as predetermined 'thresholds' and 'tipping points' within the earth system are liable to be crossed, many of the conceptual and theoretical co-ordinates that have structured debates concerning the changes associated with globalisation are coming under enormous pressure, calling for the development of new theoretical resources to both characterise the problem at hand and indicate paths towards possible action. In this article I unpack some of these challenges by subjecting *territory, authority* and *rights* – three of the fundamental tenets of modern legal and political thought – to renewed critical attention.

In her widely read study, Saskia Sassen relies on the *territory, authority, rights* (TAR) triptych to assess the changing nature of social, legal and political forms across a broad sweep of European and North American history, assessing how each element of TAR has been reconfigured and reassembled as the West has migrated from 'medieval' to the 'global' assemblages that define

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[4] On these themes, see (indicatively): Saskia Sassen, *Losing Control? Sovereignty in an Age of Globalization* (New York: Columbia University Press, 1996); Yves Dezalay and Bryant G. Garth, *Dealing in Virtue: International Arbitration and the Construction of a Transnational Legal Order* (Chicago: Chicago University Press, 1996); Neil Walker (ed.), *Sovereignty in Transition: Essays in European Law* (London: Hart, 2003); Wendy Brown, *Walled States, Waning Sovereignty* (New York: Zone Books, 2014); Wendy Brown, *Undoing the Demos: Neoliberalism's Stealth Revolution* (New York: Zone Books, 2017).

[5] Neil Walker, "Postnational Constitutionalism and Postnational Public Law: A Tale of Two Neologisms." *Transnational Legal Theory* (2012) 3(1): 61-85; Neil Walker, *Intimations of Global Law* (Cambridge: Cambridge University Press, 2014).

[6] Neil Walker, "Postnational Constitutionalism," 84.

[7] Ibid., 82.

[8] Peter Sloterdijk, "The Anthropocene: A Process-State at the Edge of Geohistory?" (trans.) Anna-Sophie Springer in Heather Davis and Etienne Turpin (ed.), *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (London: Open Humanities Press, 2015), 327-340.

the contemporary moment.[9] Her approach aims to show that what we call 'globalisation' involves the reformation of the capacities and capabilities of TAR at multi-scalar registers including the national, the sub-national and the supranational. By analysing how the parameters of social and political life have been recomposed along these three trajectories, Sassen is able to avoid treating the *national* and the *global* as discrete, though complex, objects that can be subject to comparative analysis. As she suggests:

> Rather than starting with these two complex wholes – the national and the global – I disaggregate each into these three foundational components [TAR]. They are my starting point. I dislodge them from their particular historically constructed encasements – in this case, the national and the global – and examine their constitution in different historical configurations and their possible shifting across and/or insertions in various institutional domains.[10]

In what follows I show how these 'foundational' and supposedly 'transhistorical'[11] components of social and political life lose their supremacy in the context of the new climatic regime. Indeed, the forces and relations that ought to command our attention within our Anthropocenic present are routinely dissimulated if we continue to rely on *territory, authority* and *rights* as ciphers for understanding social change. I argue that the TAR framework needs to be supplemented and extended in ways that help attend to the complex interactions between human social forms and a range of material, biogeochemical processes and systems within which, the Anthropocene thesis tells us, human life is tightly knit.

At the heart of the issues discussed below is the intrusion of *the earthly* into prevailing debates about the evolution of legal, political and social life under the conditions of globalisation. Where the tensions and interactions between *the global* and *the national* have dominated accounts of the changing nature of sovereignty, and the state's ever-greater integration in transnational systems of governance, the emergence of the Anthropocene highlights the limitations of this bifurcated frame of reference, forcing an encounter with a set of earthly forces and processes: rising sea levels; shifting ranges of habitability for basic food stuffs; the changing dynamics of oceanic currents; alterations in the phosphorous, nitrogen and carbon cycles; rates of ocean acidification; the changing nature of fresh water systems; and the viability of a range of ecosystems. These material, biogeochemical forces – often crossing presumed divisions between the human and the nonhuman – are at the heart of the legal and political challenges associated with the Anthropocene. In order to examine the theoretical significance of the newly dynamic, earthly, forces that are increasingly pressing in on our sense of the present, I argue that we cannot rely on the co-ordinates that have helped in the analysis of the transformations of social life in the conditions of late modernity. In this sense, the Anthropocene heralds not another *global* problem – like migration or the free flow of capital – that supposedly requires solutions at the level of *global* governance. The *global* is simply the wrong frame of reference. New modes of analysis, conceptual tools and interdisciplinary orientations are needed as we seek to assess the challenges augured by the new climatic regime in which we find ourselves.

Assessing each of Sassen's three components in turn, I examine how the TAR framework might be re-orientated in order to meet these challenges. In place of territory, I explore the purchase to be found within theories of *terrain* that emphasise the dynamic and processual qualities of lived and material space, rather than the abstract uniformity characterised by modernity's spatial imaginary. In lieu of scales of authority at national and/or global registers,

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[9] Saskia Sassen, *Territory, Authority Rights: From Medieval to Global Assemblages* (Princeton: Princeton University Press, 2008).
[10] Sassen, *Territory Authority Rights*, 5
[11] Ibid., 4.

and forms of authority exclusively defined by human power, I examine the emerging importance of *the city* in the context of the Anthropocene problematic, both as an alternative scale to the global/national but also as a means through which we can explore the interweaving of human and nonhuman agencies that is increasingly shaping the parameters of political life. Finally, instead of a focus on rights, I suggest shifting attention to the discrete register of *obligations* through which we can reanimate nonmodern accounts of normativity that stress an existential and material rootedness in place, environment and social relations in ways that an ever-expanding 'rights talk' fails to capture.

Of course, assemblages of territory, authority and rights will continue to play a significant role in shaping our apprehension of, and structuring our responses to, the changing climatic situation. However, it is my contention that the Anthropocene dramatizes the limitations inherent within the TAR framework and forces us to examine how we might move away from these co-ordinates, which have largely defined the scope of modern legal and political thought. Sassen's suggestion that TAR refers to a set of '*transhistorical* components' is, in this respect, revealing. Where all societies – modern and otherwise – may well rely on some notion of *authority* (understood as a generally recognised locus of legitimate power), *rights* and *territory* are distinctly modern constructions. If the Anthropocene thesis heralds a rupture within the modern imaginary, it calls for modes of thinking that do not remain bound to the co-ordinates that have defined that worldview. My focus on *terrain*, *the city* and *obligations* seeks to modify the TAR framework in an effort to develop resources from which legal and political thought might develop in the context of the new climatic regime.

The argument proceeds by first introducing the Anthropocene thesis, popularized by Paul Crutzen and Eugene Stoemer in 2000, and subsequently taken up in a range of contexts.[12] I argue that the crucial contribution that the Anthropocene literature makes for legal and political thought is its ability to bring what I call *earthly life* into view. This refers not to an understanding of human life at *global* or even *planetary* scales, but seeks to capture the human entanglement within the vast web of systems and processes that sustain the conditions for continued human habitation of the planet. In order to unpack the meaning of *earthly life* in the new climatic regime, I rely less on the stratigraphic literature that is often associated with the Anthropocene thesis, turning instead to the cross-disciplinary field of Earth System Science (ESS) and some of the more heretical lines of flight associated with this conception of the earth as an integrated, and highly complex, system of biogeochemical relations. In particular I draw on Bruno Latour's recent readings of James Lovelock's 'Gaia Theory' in order to supplement some of the insights of ESS. This initial exploration of the Anthropocene allows us to sense how *the earthly* differs from concerns usually addressed at a *global* scale or understood as aspects of *globalisation,* and therefore demands discrete modes of analysis. I then turn to the three components of Sassen's TAR schema in order to substantiate my argument, illustrating how the earthly forces that the Anthropocene brings into view fail to translate along the three 'foundational' lines that Sassen identifies. I conclude by offering some reflections on how this analysis contributes to contemporary debates concerning the changing nature of social and political life in late modernity.

[12] Paul Crutzen and Eugene Stoermer, "The Anthropocene" *IGBP Newsletter,* 41. (2000), 17-18. A number of studies assess the Anthropocene in relation to a diverse range of subjects such as art, architecture, and literary studies, signaling the concept's power to engage scholars from across the disciplines. See: Etienne Turpin (ed.), *Architecture in the Anthropocene: Encounters Among Design, Deep Time, Science and Philosophy.* (Michigan: Open Humanities, 2013); Heather Davis and Etienne Turpin (ed.), *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (Michigan: Open Humanities, 2015); Tobias Menely and Jesse Oak Taylor (eds.), *Anthropocene Reading: Literary History in Geologic Times* (Pennsylvania: Pennsylvania State University Press, 2017).

It should be noted at the outset, that the scope of the challenges that I outline in what follows are wide-ranging and the engagement with each of the three aspects of the TAR framework is necessarily truncated. My approach to these issues is more exploratory than it is prescriptive and whilst this inevitably leads to a rather suggestive and tentative tone, by drawing attention to the importance of the conceptual frameworks that we deploy in an effort to disassemble the challenges that the Anthropocene brings into view, I hope to outline three trajectories for further thought and inquiry as we strive to assess the legal and political implications of living in a dramatically changing climatic system. In this way, the analysis that follows can be understood as constituting the groundwork for future research agendas that will, in greater depth and complexity than is possible here, examine the unique challenges that the Anthropocene thesis poses to legal and political thought, with the aim of developing a new, ecological attuned, critical jurisprudence.

The Anthropocene and *earthly life*

Three approaches have dominated debates on the postulated Anthropocene epoch. First, an 'official' geological Anthropocene, debated within the relevant sub-committees of the International Commission on Stratigraphy and in the pages of specialist books and journals.[13] The Anthropocene, in this context, is understood through the presence (or not) of a globally significant marker in the Earth's strata, readable many thousands of years into the future, that signifies a shift away from the prevailing conditions of the Holocene. The key issue that preoccupies this approach concerns the temporal scope of this new epoch, particularly the question of the Anthropocene's inauguration. Defining a geological epoch requires agreement on a globally readable marker in stratigraphic material such as rock, sediment, or glacier ice. This marker is known as the 'Global Stratotype Section and Point' (GSSP) or, more colloquially, as a 'golden spike'. Very often the GSSP will refer to a mass extinction event, the emergence of new species or widespread volcanic activity, all of which leave clearly observable traces in the strata. Debate concerning the nature of a relevant marker continues and a range of potential start dates to this new epoch have been proposed, from the early 17th to the mid 20th century.[14]

A second approach entails a far more expansive reading of the Anthropocene problematic, seeking to situate the near-dominant role that human societies now have in shaping planetary life within the context of modern social relations. This broader understanding of the Anthropocene is less concerned with the geological traces that might evidence a shift away from the Holocene than it is with the social, economic and political forces that have caused wide spread disruption to our climatic conditions. This literature has focused on the histories of early-modern colonialism and modern industrial capitalism in order to unpack the modes of production, extraction and exploitation that have triggered the onset of the Anthropocene epoch. These inquiries have largely been undertaken by those working within the humanities and social sciences. In this context, various neologisms have emerged that seek to counter the limitations of

[13] For overviews of this expansive literature see: Jeremy Davies, *The Birth of the Anthropocene* (Oakland: The University of California Press, 2016); Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene* (London: Verso, 2017); and Simon L. Lewis and Mark A. Maslin, *The Human Planet: How We Created the Anthropocene* (London: Pelican, 2018).

[14] Simon L. Lewis and Mark A. Maslin, 'Defining the Anthropocene' *Nature* (2015) 519, 171-180; Jan Zalasiewicz et al., 'Colonization of the Americas, "Little Ice Age" Climate and Bomb-produced Carbon: Their Role in Defining the Anthropocene' *The Anthropocene Review* (2015) 2(2), 117-127; Jan Zalasiewicz *et al*, "When did the Anthropocene Begin? A mid-twentieth century boundary level is stratigraphically optimal" *Quaternary International* (2015) 383, 196-203.

the 'Anthropocene' nomenclature. The 'Capitalocene',[15] 'Technocene'[16] and 'Plantationocene'[17] have all been offered as correctives to the supposed scientism of the Anthropocene thesis, which is often accused of ignoring the historically contingent social relations that are at the root of climatic change, implicitly ascribing responsibility for environmental harm to an abstract and unified humanity (*anthropos*) rather than the particular classes, regions and social relations that have tipped the earth system into its newly warm and unstable state.

A third approach constitutes something of a 'third way' between the stratigraphic and socio-political accounts of the Anthropocene. Taking in a more holistic view than the rather restricted focus on geological strata and 'golden spikes', the cross-disciplinary field of Earth System Science (ESS) approaches the Anthropocene as a generalised shift within a number of the Earth's biogeochemical systems and processes. Emerging in the 1980s, ESS understands all components of the earth as forming an integrated dynamic system and takes as its object of study the interactions between all of the earth's elements: water; ice; atmosphere; organic life; the earth's crust, its tectonic plates, and core; the moon's gravitational pull; and the flow of energy from the sun. Within this expansive scenography, the Anthropocene is understood by reference to transformations within a variety of systems and cycles, beyond the conditions of Holocene variability. It is ESS, and related theories of an integrated web of planetary life, that provides resources through which we can bring what I am calling *the earthly* into view.

The new 'meta-discipline' of ESS approaches the earth not as a collection of 'ecosystems' (which would only attend to the interaction between organism and their local environments) but involves embracing a scalar shift in which both biotic and abiotic elements are understood to be operating in a single system.[18] John Lawton offers a helpful definition:

> ESS takes the main components of planet Earth… and seeks to understand major patterns and processes in their dynamics. To do this, we need to study not only the processes that go on within each component (traditionally the realms of oceanography, atmospheric physics, and ecology, to name but three), but also interactions between these components. It is the need to study and understand these between-component interactions that defines ESS as a discipline in its own right.[19]

It is key to grasp the 'gestalt shift'[20] that ESS proposes. The postulated epochal transition away from the Holocene to the Anthropocene does not claim that human activities are or have been re-shaping the earth's *landscape*, disturbing its *ecosystems*, or even simply polluting the *atmosphere*; though all this is clearly true. The key point is that a range of human actions have become a significant force within *the Earth System as a whole*, thus affecting the Earth's systemic functioning beyond the parameters established within the Holocene. And these parameters, it should be emphasised, describe the climatic conditions in which human civilisation emerged. The Anthropocene thesis claims, therefore, that through human action the various systems and processes that constitute the Earth a lively planet, and on which the evolution of human civilisation has depended, are now entering uncharted territory.

In order to bring out the significance of the *earthly* forces that are at stake in this conception of our changing planetary condition, I want to turn to Gaia, a figure that is emerging

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[15] Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (London: Verso, 2015).
[16] Jean-Luc Nancy, "The Existence of the World is Always Unexpected" (trans.) Jeffery Malecki in Heather Davis and Etienne Turpin (ed.), *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies* (London: Open Humanities Press, 2015), 85-92.
[17] Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016).
[18] Clive Hamilton, *Defiant Earth: The Fate of Humans in the Anthropocene* (Cambridge: Polity, 2017), 9-21.
[19] John Lawton, 'Editorial: Earth System Science' *Science* (2001) 292(5524), 1965.
[20] Hamilton, *Defiant Earth*, 14.

as a central actor in the theoretical debates on the Anthropocene. The Gaia hypothesis, developed by James Lovelock in the early 1970s, is a forerunner to contemporary ESS; initially shunned by scientific orthodoxy, Lovelock's thinking is today widely recognised as offering important contributions to our understanding of the planetary climate system. Despite frequent mischaracterisation, 'Gaia' is a theory about biogeochemical processes, not a postulation about some new age 'Goddess' or 'Mother Earth'. The theory does not posit any agency *in addition to* the interactions between various elements within the biosphere, lithosphere and so on; these interactions simply are what Lovelock calls 'Gaia'.[21] Writing with biologist Lynn Margulis, Lovelock suggests that the totality of organisms (including, of course, humans), surface rocks, oceans and the atmosphere are bound up in a series of feedback loops that regulate the surface conditions on earth. One of the novelties in Lovelock's early account of Gaia was the role he assigned organic life in the functioning of geochemical processes, something that until the 1990s, was rejected by mainstream geochemists who understood life as little more than a 'passenger' on earth and simply subject to the evolutionary pressures of the environment. Lovelock was amongst the first to argue that without the intervention of living organisms, the chemical composition of the atmosphere, lithosphere and oceans would be radically different. In this way organic life (the biota) is integrated into geochemical processes (the abiotic elements of the earth), making Gaia – in Bruce Clarke's terminology – 'metabiotic'.[22] Lovelock's thesis suggests that organic life has *the capacity to shape* geochemical forces, rather than simply be subject to them.

Bruno Latour has recently developed an extended reading of Lovelock's work, firstly in his 2013 Gifford Lectures at the University of Edinburgh and subsequently in an expanded book-length study, *Facing Gaia*. In his reading of Lovelock, Latour consistently emphasises that Gaia ought not be understood as a totality or a unity; or, perhaps better, Gaia forces us to understand such notions in new ways. Diverting from the conventions of ESS, Latour contends that Gaia is non-systemic – it is, for Latour, the 'anti-system'[23] – because it is incommensurate with a thinking of 'parts' that aggregate into a 'whole'. In the Gaia-view of the earth, everything is *always already in relation*. All human and nonhuman, biotic and abiotic forces can only be understood through their relations with others: each singularity (an organism or some other entity) can only be grasped though the existence of other singularities with which it is always already bound. Any effort to isolate or disentangle one agent or function – any effort to isolate a single 'part of the system' – is futile. To isolate a single element involves artificially circumscribing its borders, severing the constitutive relations it has with others. Crucial to this view is the innovation introduced by Margulis, who jettisons an understanding of 'environment' as a background *in which* an organism resides and *to which* it adapts.[24] The 'outside' (environment) is also 'inside' (organism), with each actant *always in relation*. In this way, Margulis and Lovelock insist that we cannot start with the organism and work out how it fits with its environment; nor vice versa. Gaia describes a network of relations where there is no discernible centre or end, no easy division between the biotic and abiotic elements, and where each attempt at enclosure or isolation forces us back within an on-going play of actants.

If there are no clearly individuated 'parts', they cannot coalesce into a 'whole'. This point is borne out in Lovelock's own methodology which slowly assembles the various agents within

[21] James Lovelock, *The Revenge of Gaia: Earth's Climate Crisis and the Fate of Humanity* (New York: Basic Books, 2006).
[22] Bruce Clarke, 'Rethinking Gaia: Stengers, Latour, Margulis' *Theory, Culture and Society* (2017) 34(4), 3-26, 13.
[23] Latour, *Facing Gaia*, 87.
[24] Lynn Margulis, *Symbiotic Planet: A New Look at Evolution* (New York: Basic Books, 1998).

the biogeochemical scene. It is only by refusing to transcend the particular interactions he observes and make a claim about the functioning of *planetary life as a whole* that Lovelock is able to show the specific roles that given organisms and ecosystems play in the production of the geochemical conditions on earth. It is this that allows Lovelock to think in terms of a '*connectivity without holism*'.[25] As Latour argues, if we view the earth's functioning as a system in which *parts fulfil a function in relation to a whole*, we are 'inevitably bound to imagine, *also, an engineer* who proceeds to make them work together'.[26] Indeed, the 'systems analogy' views the earth's dynamic operations as being predictable and mechanistic, as if fulfilling the design of a blueprint or use-plan. Latour doesn't deny the allure of the metaphor but simply underscores its status *as a metaphor*. Though the earth might function *like* a system, a system it does not make. The technological metaphors to which systems-thinking will always return posits a set of rules (the so-called 'laws of nature') to which the various elements within the system submit. But this prematurely unifies the earth's functions rather than attends to its qualities of emergence and creativity. As Latour suggests:

> Those who accuse Lovelock of conceptualising a unified whole fail to say that they too use an extraordinarily powerful unifier, since they have attributed to the laws of nature – in practice, to equations – the task of compelling obedience everywhere, on every point. The problem is how to dispense completely with the theme of obedience and mastery – that is of government (the etymology of cybernetics).[27]

If the 'systems approach' urges a kind of *transcendence* where the particularity of the connections between singularities within the earth's functioning are overlooked in favour of a 'whole which is more than the sum of its parts', Gaia calls for a kind of *subscendence* in that it finds something greater, both more numerous and more significant, in the plurality of connections 'within' than we do in the apparent unity of the whole itself.[28]

The systems view encourages us to see the earth as something that is already unified and enclosed, something 'over there' from which a human observer can, through a movement of thought, detach themselves. Gaia insists on an earth that is irreducibly 'down here' in a mess of hybrid interactions with which we humans are always already engaged. This makes the preeminent political task for the Anthropocene one of *assembly* and *composition*:

> It is… [the] total lack of unity that makes Gaia *politically* interesting. She is not a sovereign power lording it over us. Actually in keeping with what I see as a healthy Anthropocene philosophy, She is no more unified an agency than is the human race that is supposed to occupy the other side of the bridge… This is why Gaia-in-us or us-in-Gaia, that is, this strange Moebius strip, is so well suited to the task of composition. It has to be composed piece by piece and so do we.[29]

The plurality of elements within Gaia only come to be known through careful composition, by tracing the relations and slowly assembling the networks. Likewise with the *geo-bio-political* formations of the future. The political task as we turn to 'face Gaia' lies in assembling and composing new allegiances and alliances across assumed divisions between human and nonhuman, biotic and abiotic forms, bringing into the *polis* the very forces and relations that the modern political imaginary keeps resolutely 'off stage'.

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[25] Bruno Latour, "Why Gaia is not a God of Totality" *Theory, Culture & Society* (2017) 34(2-3): 61-81, 70.
[26] Latour, *Facing Gaia*, 95.
[27] Latour, *Facing Gaia,* 97, n. 71.
[28] I borrow the notion of 'subscendence' from Timothy Morton, *Humankind: Solidarity with Nonhuman People* (London: Verso, 2017), 101-120.
[29] Bruno Latour, "Waiting for Gaia: Composing the common world through arts and politics: A lecture at the French Institute, London" (November, 2011), 10. Available online: http://www.bruno-latour.fr/sites/default/files/124-GAIA-LONDON-SPEAP_0.pdf . Accessed, 19 December 2018.

Through Lovelock, Latour is able to resituate the human within a series of biogeochemical loops and connections, over which, in the prevailing conditions of the Anthropocene, human agency has assumed enormous power. It is this uncanny encounter between the human and a set of biogeochemical forces, once considered a mere backdrop to human histories but that are today increasingly shaping our contemporary condition, that defines the peculiarity of what I am calling *earthly life*. I have in mind here a certain resonance between this characterisation of *earthly life* – referring to the human entanglement within a set of metabiotic forces that shape planetary climatic conditions – and what Eric Santner has called *creaturely life*, naming the distinctly human capacity to encounter its own animality.[30] In an extraordinarily rich study, Santner elaborates on *creaturely life* through highly insightful readings of early twentieth century German (and above all German-Jewish) philosophy and literature. As Santner shows, the work of Rainer Maria Rilke, Walter Benjamin and W. G. Sebald constitutes an archive of creaturely life, an extended meditation on encounters with human-animality. Creaturely life emerges at the outer most reach of our symbolic and representative orders, constituting a limit point to the properly 'human' at which the human momentarily 'touches' or 'encounters' a creaturliness within. Santner traces the contours of creaturely life through a range of theoretical traditions but it is most clearly associated with moments at which human life is exposed to sovereign violence in the state of exception:

> Creaturely life is the life that is, so to speak, called in to being, *ex-cited*, by the exposure to the peculiar 'creativity' associated with this threshold of law and nonlaw; it is the life that has been delivered over to the space of the sovereign's 'ecstasy-belonging,' or what we might simply call 'sovereign *jouissance*'.[31]

Santner here follows Giorgio Agamben's characterisation of sovereign power as emerging at the threshold of law and nonlaw and having the capacity to produce a form of life that exists within a zone of indistinction between bare life (*zoe*) and political life (*bios*).[32] It is within this interstitial space, where human life becomes subject to the seemingly 'a-legal' power of the state, that we most clearly encounter *creaturely life* as a recognisable form. As should be clear, there is a *biopolitical* dimension to Santner's characterisation of human creatureliness. What is at stake is less a sense of a common 'animality' between human and nonhuman life than an attention to the uniquely human capacity to encounter, articulate and archive the (biopolitical) practices through which a division between the human and the creaturely is installed and, under certain conditions, becomes indistinct.

What I am calling *earthly life* refers to the no less uncanny, and decidedly human, encounter not with a nascent creaturliness or animality within the human, but with a set of *earthly,* biogeochemical forces within which human life is enmeshed. It is an encounter, at the very limits of modern symbolic and representational systems, with a *human earthliness* that is at stake here. This is characterised by what Latour calls the 'strange Moebius strip' in which the human, nonhuman, biotic and abiotic are enfolded within a complex set of relations that resist systemic closure. The encounter with earthly life that the Anthropocene augurs forces us to rearticulate 'the social domain' as a series of linkages that gather together a variety of *earthly* not simply *human* actors. In this sense, *earthly life* invites a mode of self-reflection where we see ourselves – and the collective force of human action – as taking on an earthly significance, comparable to shifting tectonic plates, meteor strikes or massive volcanic eruptions. It is the

[30] Eric L. Santner, *On Creaturely Life: Rilke, Benjamin, Sebald* (Chicago: University of Chicago Press, 2006).
[31] Santner, *On Creaturely Life*, 15.
[32] Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Stanford: Stanford University Press, 1998); Giorgio Agamben, *State of Exception* (Chicago: Chicago University Press, 2005).

human *becoming-earthly*, to adapt a Deleuzian expression, with which we have to contend as we face the prospect of living in the Anthropocene. Timothy Morton captures this peculiar condition when he reminds us: 'every time I start my car… I don't *mean* to harm the Earth, let alone cause the sixth mass extinction event in the four-and-a-half billion-year history of life on this planet… but harm to the Earth is precisely what is happening'.[33] It is the uncanniness of *earthly life* that Morton draws out here, highlighting how the most quotidian of acts is immersed within a set of biogeochemical relations, underscoring that everyday life in the Anthropocene, strange though it may seem, takes on a planetary and geological significance.

It is my contention that as legal and political thought turns to address the multiple challenges associated with the Anthropocene, it must grapple with the implications of *earthly life*, as I have sketched it here. This vast web of relations within which the human is imbricated needs to be dis- and re-assembled in ways that help us articulate the unique challenges that the new climatic regime poses to our understanding of our social forms. As I suggested at the outset, existing techniques through which social change has been understood offer limited help in this respect: the TAR framework that Sassen develops in tracing the transition from medieval to global social forms, offers limited guidance as we seek to understand the Anthropocenic assemblages of the present. As should be clear, *the earthly* has very little to do with *the global* scale which dominates contemporary debates about the changing nature of our legal and political forms under the conditions of globalisation. The *global* refers to interactions within and across human social groupings in disparate parts of the planet and the legal, political and technological infrastructures that facilitate such relations. The *earthly* forces that the Anthropocene brings into view are of a completely different order. The uncanny encounter with *earthly life*, just outlined, needs to be transposed into conceptual forms that offer resources with which legal and political theorisation and experimentation in this context might proceed. It is this task to which I now turn by assessing each aspect of Sassen's TAR schema, offering some alternatives to this approach that aim to bring the contours of *earthly life* into view.

From territory to terrain

Though territory is one of the key elements of Sassen's study, she offers no conceptual history of the term. For Sassen, territory is largely synonymous with the spatial extent of legal and political power, with the focus of her analysis on how power and authority have been re-formed at various historical junctures at distinct scales: imperial, national, global and so on. In contrast, Stuart Elden's seminal work on the conceptual scope and historical trajectory of territory seeks to unpack territory as a unique mode by which the relationship between place and power has been understood.[34] Elden has done invaluable work in situating territory as a *sui generis* concept, distinct, though related, to other key terms in our spatial lexicon: land, place, terrain, and territoriality. The urge to understand the complex interrelations amongst these various elements is of course only natural – and something to which we will return below – but Elden argues, in the interest of analytic clarity, it is the discrete labours and unique history of territory that deserve primary attention. As a genealogical approach to the concept shows,[35] far from referring to a 'transhistorical' mode through which place and power are brought into relation, the modern

[33] Timothy Morton, *Dark Ecology: For a Logic of Future Coexistence* (New York: Columbia University Press, 2016), 8.
[34] Stuart Elden, *The Birth of Territory* (Chicago: Chicago University Press, 2013); Stuart Elden, *Terror and Territory: The Spatial Extent of Sovereignty* (Minneapolis; University of Michigan Press, 2009); Stuart Elden, "Thinking Territory Politically" *Political Geography* (2010) 29(4), 238-41; Stuart Elden, "Land, Terrain, Territory", *Progress in Human Geography* (2010) 34(6), 799-817.
[35] Elden, *The Birth of Territory*.

understanding of territory emerges within seemingly esoteric debates concerning the nature and limits of papal authority in late medieval Europe. The question of how to define the contours of an emergent secular (or 'temporal') power was later combined with geometric and philosophical innovations in early modernity that fed directly into the early treatises that elaborated a putatively 'modern' form of sovereignty. By the end of Elden's study, territory can be characterised as a 'political technology, or perhaps better a bundle of technologies'[36] that draws on a range of practices (mapping, surveying, measuring), knowledges (juridical, geometric, geographic) and forms of power (martial, jurisdictional, political), testifying to a rich and varied conceptual history. Territory, in this sense, is not simply a 'container' for political life, or an uncontested 'object' to which (more or less contested) rights and duties are attached, but is itself *constantly being produced* through a range of legal, geographic and political practices.

Having passed over the technical and intellectual labour spent in the production of territory, Sassen then projects the concept back in time as a means of understanding social forms 'transhistorically'. In this way, Elden's account of territory ends where Sassen's approach begins, with Elden underscoring – rather than effacing – the contingency of territory as a mode by which legal and political space has been apprehended. If, as Hans Lindhal has stressed, territory is '*but* one of the historical permutations' of a more general relation between place and power, [37] it remains an open question whether contemporary political challenges require us to shift away from this distinctly modern articulation and develop alternative means by which the place/power nexus can be understood. It is my contention that the Anthropocene urges such a transition.

One of the distinctive aspects of territory is its reliance on, and reproduction of, what Henri Lefebvre has called 'abstract space'.[38] Indebted to renaissance geometry, territory developed hand-in-glove with a conception of space which is reducible to *extension*, where space is defined not by its materiality, dynamism or particularity but through a set of points and positions on a single plane. This *res extensa* is at the heart of the spatial imaginary of modernity and is an important aspect of modern governmental practices that are able to 'see like a state' through techniques of calculation, surveillance, cartography, and surveying.[39] Territory depends on technologies that re-present a material and dynamic earth in static, polygonal forms, bracketing the raw materiality of the earth, and its various biogeochemical cycles and systems, in order to render visible an 'abstract space' over which exclusive legal and political power can be claimed. Whilst we all know that rivers, coastlines and mountain chains are undergoing slow transformations, we understand these changes as operating at a temporal rhythm so different from our own political-spatial histories, and the forms of representation on which they rely, as to be conceptually irrelevant.[40] The Anthropocene challenges this presumption and dramatically brings a material and increasingly mobile *terrain* into view.

Though a widely used term within strategic studies and the geophysical sciences, terrain has received scant theoretical attention in legal and political thought. Two recent studies by Gaston Gordillo and Stuart Elden have begun to address this.[41] For Gordillo, terrain is the only

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[36] Elden, *The Birth of Territory,* 322.
[37] Hans Lindhal, "Book Review: *The Birth of Territory* by Stuart Elden" *Political Theory* (2015) 44(I), 144-145.
[38] Henri Lefebvre, *The Production of Space* (London: Wiley-Blackwell, 1992).
[39] James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).
[40] On this point see: Dipesh Chakrabarty, "The Climate of History: Four Theses" *Critical Inquiry* (2009) 35(2), 197-222.
[41] Gaston Gordillo, "Terrain as insurgent weapon: An affective geometry of warfare in the mountains of Afghanistan" *Political Geography* (2018) 64, 53-62; Stuart Elden, "Legal Terrain – The Political Materiality of Territory" *London Review of International Law* (2017) 5(2), 199-224.

term which indicates that 'space is made up of folds, textures, depths, and volumes'.[42] If territory flattens space to understand its *extension*, terrain reintroduces the lumpy complexity of space in an effort to understand its *intensity* and *dynamism*. In his study of American soldiers operating in the Korengal valley in Afghanistan, Gordillo emphasises the material, processual and emergent qualities of space, assessing the affective force that the terrain had in the course of military conflict in the area. For Gordillo, terrain refers to a 'non-representable multiplicity of forms' that, however static they may seem, are forever in a state of becoming; landscapes that shift with changes in temperature, precipitation patterns, erosion, the presence of crops, livestock, wildlife and so on.[43] In this sense, terrain describes not simply various landforms but brings to the fore the 'affective geometry'[44] of a place, describing how human actors affect and are affected by a number of the earth's material processes. Significantly, terrain approaches space in volumetric, atmospheric and material registers, foregrounding the 'thickness' of space and the rhythms and patterns to which it is subject. As Gordillo makes clear, terrain does not simply refer to 'natural' objects or processes but embraces 'human-made materialities':[45] bridges, roadways and dams are all elements of terrain as much as valleys, littoral zones, or the specific rock types and weather systems that predominate in a given place. Crucially for Gordillo, where territory is eminently representable through a range of surveying and cartographic techniques, terrain is essentially *opaque* to the technologies of modern governance and representation. In this way, terrain refers to a kind of *earthly excess* that will always transcend or interrupt modernist schemes by which space is represented.

In an effort to understand *earthly life* in the prevailing conditions of the Anthropocene, terrain becomes an indispensable means through which we can approach juridico-political space. As the earth system becomes more volatile, with extreme weather events more likely and the prospect of dramatic alterations to sea-levels, river systems, rainfall patterns, and the navigability of trade routes widely predicted, the moderns' predominant spatial imaginary appears largely blind to the forces that are today giving shape to social life. Let me identify two ways in which a focus on terrain directly challenges the modes of apperception associated with territory and helps foreground the material, biogeochemical forces with which human agency is increasingly entangled.

Projections suggest that by 2070 the mean global temperature will be higher than it has been since the human species evolved.[46] Clearly this presents unprecedented strain on the conditions for continued human habitability in many areas of the globe. Competition for natural resources, migration to more temperate regions, and increased pressure on soil, water and air will lead to the jealous protection of resources in climatically benign regions by territorially sovereign states; all of which increases the likelihood of militarized interstate conflict.[47] We can look to the increasingly controversial regimes for the processing and internment of refugees within and at the peripheries of Europe, USA and Australia as an indication of the kinds of state responses that we can expect as eco-migration adds to today's already vast flows of people worldwide. The scope of these emerging challenges and controversies is articulated at the intersection of territory and terrain as the formal equivalence of states confronts the fact of their

[42] Gaston Gordillo, "Opaque Zones of Empire: Notes Toward a Theory of Terrain" (2013), 2. Available online:https://www.academia.edu/3795770/Opaque_Zones_of_Empire_Notes_Toward_a_Theory_of_Terrain. Accessed 20 September 2018.
[43] Gordillo, "Terrain as an insurgent weapon", 56.
[44] Ibid., 57.
[45] Ibid.
[46] Anthony D. Barnosky et al., 'Approaching a State Shift in Earth's Biosphere', *Nature* (2012) 485, 52-58, 54.
[47] Harald Welzer, *Climate Wars: Why People Will Be Killed in the 21st Century* (London: Polity, 2012).

geophysical and meteorological differentiation, emphasising the fact that the earth's *intensity,* at the level of terrain – rather than simply its *extension*, at the register of territory – shapes the capacity for political action. To address these changing dynamics, further work is therefore needed on the conceptual history of terrain, its relation to territory, and on the ways in which the 'affective geometry' of terrain increasingly shapes the contours of contemporary political disputes.[48]

A second issue returns us to Gaia and ESS. As theorised by Gordillo, terrain is deeply resonant with these accounts of the earth as an integrated set of relations between atmosphere, lithosphere, hydrosphere, cryosphere and biosphere, embracing both biotic and abiotic planetary forces, and focusing on the *dynamic* and *emergent* qualities of the earth's material fabric. But, as Gordillo suggests, these relations are largely *opaque* in the context of our prevailing representational schemas. How can we represent or visualise the complex interweaving of the geophysical, the legal and the political that the Anthropocene demands?

The predominant mode of visualising political power in modernity has been through modern cartographic representation. The relationship between maps and the modern state has been widely commented on, with Richard Ford going so far as to describe cartography as 'the midwife to the administrative state'.[49] The ambitious surveying projects undertaken under the auspices of the French *Academie des Sciences* throughout the 17th and 18th centuries are indicative of the deep connections between the state as an institutional, ideational and aesthetic project. As Jerry Brotton suggests, the political message of the maps produced in this period was unmistakable: '*whatever the terrain*, every corner of the kingdom could now be mapped and represented according to the same principles… the map established that nowhere was exceptional'.[50] Modern cartography depicts a unitary, homogenous and evenly applied legal force across the entire sweep of a nation, the reality of which can be apprehended in a single glance. The pressing challenge for contemporary legal and political life is how to develop alternative conceptual and representational techniques that offer a greatly expanded vision of the geo-political than that installed through the methods of modern cartography. Attention is clearly needed to the volumetric dimensions of space and the cycles and rhythms that takes place within a given terrain. As Alexandra Arènes et al have recently shown, orthodox methods by which the earth has been represented – whether through classical cartography or as a 'blue planet', viewed from outer space – render strangely invisible the unique forces and relations that make the earth a living planet.[51] If our legal and political thinking is to become attuned to the geophysical forces that are today shaping, and are shaped by, human social forms in the Anthropocene, representational innovations that seek to capture the 'multiplicity of forms' that characterise the earth as a *living and dynamic* space*,* and the 'affective geometry' of human interactions within the environmental envelope in which we live, are urgently needed if we are to grasp the emerging risks, harms and possible responses to the challenges the Anthropocene presents. This will necessitate new interdisciplinary collaborations between legal and political theory, geography and the arts.

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[48] This is the work that is called for in Elden, "Legal Terrain".
[49] Richard T. Ford, "Law's Territory (A History of Jurisdiction)" *Michigan Law Review* (1999) 97(4), 843-930, 870. On the relationship between cartography and the state more generally see: Christian Jacob, *The Sovereign Map: Theoretical Approaches in Cartography throughout History* (Chicago: Chicago University Press, 2006); Jerry Brotton, *Trading Territories: Mapping the Early Modern World* (London: Reaktion Books, 1997); James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).
[50] Jerry Brotton, *A History of the World in 12 Maps* (London: Penguin, 2014), 325, emphasis added.
[51] Alexandra Arènes *et al* "Giving depth to the surface: An exercise in the Gaia-graphy of critical zones" *The Anthropocene Review* (2018) 5(2), 120-135.

Sassen's reliance on territory as a central component in understanding social change obscures the contingency of territory as means of understanding the relation between place and power and forecloses any assessment of alternative modes by which this relation might be conceived. In the context of the Anthropocene, territory appears largely outmoded as it renders *invisible* the very forces that are today at the heart of so many of our political challenges, which increasingly urge a confrontation with material, geophysical, *earthly* forces and relations.

From scales of authority to earthly forms

In Sassen's analysis, 'authority' poses both questions of *form* and *scale*. The shift from medieval to modern, and from modern to global assemblages can be traced through the transformation of authority in both these registers. The *monarchical* authority of the medieval period, emanating from the king's personal power, is described as being in a constant tension not only with the spiritual authority of the church but also the rival claims of other temporal powers both within and outside a given sphere of influence. The emergence of *popular* sovereignty in the early modern period and consolidated in the seminal declarations of the late 18th century, took a radically different form and operated at a distinct scale. Theoretically at least, popular sovereignty is dispersed amongst the general populace, with 'the people' rather than God or the prince representing the locus of supreme power. As is well known, these innovations concerning the form of authority coincided with the growth of the nation state as the preeminent scale at which authority was administered. In the context of the *global* assemblages of the 20th and 21st centuries, Sassen argues that state authority retains a central role but is today in tension with a range of transnational scales of authority like global capital markets and supranational institutions.

As one form of authority gives way to another, the question of political *ethos* is at stake in the these changes. This refers not only to a dominant set of values within a given geographic and historical context but also a sense of *attachment* or *belonging* to set of institutions that predominates at a given place and time. For instance, the *ethos* that prevails within monarchical rule – where the king's word has the force of law and the monarch's personage is the chief means of mediating collective life – is clearly quite distinct from that which emerges in the context of popular sovereignty. The sense of *to what* and *to whom* one is attached and the relevant principles that underpin political community are clearly transformed in this context where nationhood and a set of supposedly democratic and impersonal institutions install a distinctly modern political *ethos*. And, as Neil Walker has suggested, in the context of our increasingly globalised political order, many contemporary citizens feel a sense of belonging to a 'global community' and set of 'global values' that rival more parochial national or ethnic identities and political claims.[52]

As intimated at the outset, it is my contention that if we retain a modern political *ethos* we are unable to attend to those forces and relations that are at the heart of the Anthropocene problematic. In order to effect such a shift, I argue that we should focus less on the *re-scaling* of authority at global, national and regional registers and address, instead, the question of *social form*. I draw inspiration in this regard from Lilian Moncrieff's recent work on the geological life of corporations.[53] Developing a novel account of what she calls 'le-geology', Moncrieff re-situates the corporation in relation to the material affects that it has within the earth system, tracing the geological 'legacies' that contemporary corporations leave within the earth's strata and the

[52] Neil Walker, *Intimations of Global Law* (Cambridge: Cambridge University Press, 2015), 1-28.
[53] Lilian Moncrieff, "On the Company's Bounded Sense of Social Obligation" in Daniel Matthews and Scott Veitch (eds.) *Law, Obligation, Community* (Abingdon: Routledge, 2018), 73-100.

ecological and human devastation that corporate profit maximising practices so often leave in their wake. Moncrieff offers a novel perspective on the corporation, emphasising less its *legal form* than, what I would call, its *earthly form* by tracing its material entanglement within the biogeochemical life of the planet. It is this shift of perspective that is needed in the context of our new climatic regime where attention is directed less towards the legal architecture that produces given social forms than it is towards the material, geological and ecological imprint that such forms have within the earth system. It is against this background that I want to turn to the city as a discrete *earthly form* in the Anthropocene.

The city is a red thread running through Sassen's analysis of the changing shape of legal and political authority. Medieval cities, which often retained a high degree of autonomy from both monarchical and ecclesiastical power and were frequently run as oligarchic institutions to the benefit of an emergent bourgeoisie, are characterised by Sassen as prototypical of the structures that would be installed at the scale of the state in early modernity. In a classic case of the return of the repressed, the city – subsumed within a strict hierarchy of competencies, as the modern nation state assumed supremacy – has emerged again as a key source of authority within the globalised context of late modernity. As Sassen has detailed in her widely read studies of 'global cities',[54] it is by virtue of transnational urban networks that capital, knowledge, and people are able to circulate at a 'global' scale. As a range of studies have shown, cities are playing an increasingly important role in the context of international affairs often taking the form of transnational, inter-city diplomacy and policy formation.[55] In the context of environmentalism such inter-city networks are at the forefront of contemporary debate with networks like C40 and ICLEI emerging as key sources of authority in the global climate change discourse.[56] These networks have led to the emergence of what Jolene Lin has called a transnational 'urban climate law'.[57] Through the development of voluntary standards, efforts to harmonise environmental policies across cities and the pooling and dissemination of knowledge, the internationally networked city has become a key site at which the global scale is articulated and reproduced. This situates the city as an emergent locus of authority within global affairs, particularly in the context of the climate change agenda.

Less attention has been paid, however, to the question of *form* in this context. Literature on the urban form has tended to focus on, and celebrate, what Nicholas Blomley calls a type of 'civic humanism'.[58] From Georg Simmel to Jane Jacobs, the city is often presented as a site of human encounter where disparate classes, ethnicities and forms of life mingle. The city street, in this sense, becomes something of a training ground for a set civic virtues where a sense of etiquette, civility and public morality is nurtured. Recent literature in urban studies offers a radically different vision of the city as an 'infrastructural assemblage' where attention is directed less towards inter-human encounters than to the various nonhuman materialities that are

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[54] Saskia Sassen, *The Global City: New York, London, Tokyo* (2nd Edition) (Princeton: Princeton University Press, 2001); Saskia Sassen, *Cities in a World Economy* (4th Edition) (New York: Sage Publications, 2011).
[55] Janne E. Nijman, "Renaissance of the City as Global Actor: The Role of Foreign Policy and International Law Practices in the Construction of Cities as Global Actors" in G. Hellman, A. Fahrmeir and M. Vec (eds.), *The Transformation of Foreign Policy: Drawing and Managing Boundaries from Antiquity to the Present* (Oxford: Oxford University Press, 2016), 209-241; Ilena Porras, "The City and International Law: In Pursuit of Sustainable Development" *Fordham Urban Law Journal* (2008) 36, 537-601.
[56] Sofie Boutlegier, Cities, Networks and Global Environmental Governance (Abingdon: Routledge, 2012); Jolene Lin, *Governing Climate Change: Global Cities and Transnational Law Making* (Cambridge: Cambridge University Press, 2018), 105-126.
[57] Lin, *Governing Climate Change*.
[58] Nicholas Blomley, *Rights of Passage: Sidewalks and the Regulation of Public Flow* (Abingdon: Routeldge, 2011), 17-28.

manipulated in order to produce the urban environment.[59] Embracing a broad definition of 'infrastructure' to include both the material and immaterial networks that facilitate urban flow, Ash Amin and Nigel Thrift have argued that in order to 'see like a city' we need to turn our attention away from the realm of human socialisation and towards a more expansive vision of transportation, energy and waste systems as well the networks in which money, information and desire circulates. This work on the urban form resonates with our Anthropocenic present by both encouraging us to attend to the complex interactions between the human and nonhuman (perhaps the *sine qua non* of the Anthropocene problematic) but also situating the urban itself as a key agent of planetary climatic change. The city, read through its material infrastructure and geological imprint situates the urban *within* rather than *set against* a set of biogeochemical forces and relations. This represents an all-important shift of perspective in which the city is understood neither as a node within the networks that form the global economy, nor as a site of institutional experimentation that challenges the composition of the geo-political scene, but instead approaches the urban as an expression of *earthly life*, a peculiar entanglement of human and non-human agencies that is a crucial force within the plenary climatic system. This in no way renders redundant the myriad studies that analyse the city as an economic, juridical and political actor in the context of globalisation but instead insists on a third, earthly, dimension to this analysis that seeks to add depth and materiality to abstract and flattened world that the global scale so often evokes.

One way of grasping this altered mode of perception is through attention to the city's role within the earth's *technosphere*; that is, the humanmade elements of the earth system, akin to the biosphere, cryosphere, atmosphere and lithosphere that constitute the fundamental elements of the earth system.[60] The technosphere refers to the 'summed material output of the contemporary human enterprise' and includes any technological material 'within which a human component can be distinguished, with part in active use and part being a material residue'.[61] And as Zalasiewicz et al have shown, urban infrastructure (roads, buildings, docks, runways, landfills, metro systems and so on) – despite covering as little as 2% of the earth's surface – constitutes over a third of the earth's technosphere.[62] The global explosion in urban population since the middle of the 20th century directly corresponds to the wide ranging transformations to the earth's biogeochemical systems that signals our arrival in the Anthropocene epoch. Indeed, urban infrastructure has also been referred to as a key marker for the earth system's transition away from the Holocene variability: stratigraphers of the future will be able to point to deep scars in the earth's strata and a range of 'technofossils' left behind by *homo urbanus* as evidence of our transition into the Anthropocene epoch. Furthermore, cities are key nodes in the contemporary fossil economy, responsible for 60-80% of global energy consumption and approximately 75% of global CO2 emissions;[63] and many cities are uniquely vulnerable to climatic change, particularly rising seas levels.

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[59] For a survey of these approaches see: Ash Amin, "Lively Infrastructure" *Theory, Culture & Society* (2014) 3(7/8), 137-161, 137-140.

[60] Peter Haff, "Technology as a geological phenomenon: Implications for human well-being" in C. Waters, et al (eds.), *A Stratigraphical Basis for the Anthropocene* (London: Geological Society Special Publications, 2014), 301-309; Jan Zalasiewicz et al, "Scale and Diversity of the physical technosphere: a geological perspective" *The Anthropocene Review* (2017) 4(1), 9-22.

[61] Zalasiewicz et al, "Scale and diversity of the physical technosphere", 11.

[62] Ibid., 12.

[63] R. Burdett and P. Rode. "Living in an Urban Age" in R. Burdett and D. Sudjic (eds.), *Living in the Endless City* (2011). Quoted in Amin and Thrift, *Seeing Like a City*, 13.

As work on the global city has shown, the city is key means by which we can understand the recoding of human life at a global scale. The primary concern in this literature is not the city as a unique socio-political *form* but with the role that cities play in producing *global scales* of authority. By focusing on form, an alternative set of issues are brought into focus by resituating the city in direct relation to *earthly life*. As the planetary urban population continues to grow and cities become increasingly significant sites of legal and political authority, we need to understand the city as a distinct *socio-bio-geo-chemical* form within the earth system that plays a profound role in shaping planetary life. Such an approach to *earthly forms* in the Anthropocene is directly concerned with the question of *ethos*. If, as Louis Kotzé has argued, the aspirational project of an international environmental constitutionalism lacks a sufficient 'global' or 'planetary' *ethos* that connects citizens to regimes of global governance,[64] it is within contemporary urban forms that such an ethos might well be nurtured. In this sense, it is the emerging role of the city as an *earthly form* that deserves our attention. This would entail a move away from a bifurcated analysis that stresses either *the national* and *the global* in an effort to understand the contemporary political scene in which our *urban forms* are increasingly shaping the earth's systemic functioning.

From rights to obligations

Rather like her reliance on territory as a supposedly 'transhistorical' component by which we can disentangle the transition from medieval to global assemblages, Sassen's reliance on 'rights' is anachronistic. Rights only emerge as a fundamental means through which political claims are articulated with the advent of modernity. That rights discourse has greatly expanded and diversified over this period is uncontroversial but to accord rights a priority within the political sphere is a distinctly modern manoeuvre. As A. P. d'Entrèves puts it, the prioritisation of natural right – and the institutionalisation of rights in the seminal declarations of the late 18th century – 'marks the end of an era and the beginning of contemporary Europe'.[65] The modern theorists of natural rights rearticulated the political as a matter not of *obedience* and *obligation*, the prevailing principles of the time, but in terms of 'inalienable rights', attached to individuated subjects and justified by reason alone. As Martin Loughlin has argued, the institutionalisation of natural rights constituted a fundamental shift in the nature of political life, leading to the legalisation of the political and the politicisation of law; as he suggests, once basic rights are encoded in positive law, 'citizens need no longer appeal to a set of political values and argue for their truth; they can now demonstrate their authority by referring to the normative framework of the law'.[66] It is this 'age of rights' that continues to define our contemporary condition with almost all political and moral claims increasingly drawing on the language and conceptual schema of rights in order to find purchase in public discourse.

In the context of environmentalism this urge towards an ever more catholic conception of rights has led many to advocate for rights to be extended to the natural world. Some of the prominent work in this vein has been conducted under the auspices of 'earth jurisprudence'.[67] As articulated by Cormac Cullinan, the principles of earth jurisprudence contend that 'all beings that

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[64] Louis J. Kotzé, "The Anthropocene's Global Environmental Constitutional Moment" *Yearbook of International Environmental Law* (2015) 25(1), 24-60.
[65] A. P. D'Entrèves, *Natural Law: An Introduction to Legal Philosophy* (London: Hutchinson & Co., 1964), 48.
[66] Martin Loughlin, *Sword and Scales: An Examination of the Relationship Between Law and Politics* (London: Hart, 2000), 208.
[67] Peter Bourdon (ed.), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (Mile End: Wakefield Press, 2011); Anne Schillmoller and Alesandro Pelizzon, 'Mapping the Terrain of Earth Jurisprudence: Landscape, Thresholds and Horizons' *Environmental Law and Earth Law Journal* (2013) Vol. 3, 1-32; Peter D. Bourdon, *Earth Jurisprudence: Private Property and the Environment* (Abindgdon: Routledge, 2015).

constitute [life on earth] have fundamental 'rights', including the right to exist, to a habitat or a place to be and to participate in the evolution of the Earth community'.[68] Cullinan has been involved in the formalisation of these rights, helping draft the 'Universal Declaration of the Rights of Mother Earth', adopted by the Peoples World Conference on Climate Change and the Rights of Mother Earth in April 2010. Some of the impetus behind the earth jurisprudence movement has been reflected in recent legal developments, particularly on the question of legal personality. In New Zealand, for instance, the legal personality of Te Awa Tupua (Whanganui River) has recently been recognised and a statutory framework established by which the rights of the river can be represented and defended.[69] This approach, whilst seemingly radical, is really a continuation of one of the central tenets of the modern project that sees the institutionalisation of a justiciable right as a fundamental goal of political action. But why afford rights this priority? If the Anthropocene challenges some of the basic co-ordinates that structure the modern project and worldview, perhaps a shift in register is warranted.

Despite the best efforts of modern political thought, there are good reasons to affirm the priority of *obligations* rather than *rights*. There is, as we have already indicated, a historical dimension to this: rights only assume a privileged status with the onset of modernity whereas obligations have a much longer heritage. But obligations also assume a logical priority in the sense that rights are articulated within social contexts that are already saturated with obligations.[70] In this sense, obligation refer to a register of normativity that exceeds a correlative function with rights. Simone Weil, who railed against the abstraction and individualism of the 'mediocre' discourse of rights, reminds us that 'the notion of obligations comes before that of rights, which is subordinate and relative to the former'.[71] Obligation – with its root in *ligare*, to bind – is connected to what Weil identified as the 'rootedness' of the human condition. It is this 'rootedness' that offers some clues towards why a thinking of obligation is particularly apposite in the context of the Anthropocene.

In a recent re-engagement with the theme of obligation Scott Veitch has explored the question of obligation's *priority* that so animated Weil. Drawing on the work of Viscount Stair, the great 17th century Scottish jurist, Veitch examines how obligations are fundamentally grounded in a set of existential conditions:

> In this [Stair's] schema primacy was given to those laws and duties 'written on men's hearts' by God which Stair called 'obediential obligations' (differentiating them from conventional ones, i.e. those made up by human conventions). Such obligations are for Stair pre-contractual, pre-institutional, pre-experiential. They do not gain their force from positive laws, nor from human agreements.[72]

The religious framework that contextualises Stair's view of obligations is clear enough to see. But Veitch ponders the extent to which these 'pre-institutional' obligations continue to function in the changed circumstances of contemporary secularism. At work here is a form of *substitution* in which the justification for a set of norms might fundamentally change but the formal structures that underlie these norms stay in place. Veitch argues that the pre-given, non-negotiable norms that Stair ascribed to divine power are today increasingly structured by market forces: 'if in one period citizens could not step outside of the realm of religion, now it seems impossible to step out

[68] Cormac Cullinan, 'A History of Wild Law' in Peter Bourdon (ed.), *Exploring Wild Law: The Philosophy of Earth Jurisprudence* (Mile End: Wakefield Press, 2011), 12-23, 13.
[69] Te Awa Tupua (Whanganui River Claims Settlement) Act 2017.
[70] Daniel Matthews and Scott Veitch, "Introduction" in *Law, Obligation, Community*, ix-xvii, ix-x.
[71] Simone Weil, *The Need for Roots* (London: Routledge and Kegan Paul, 1952), 3.
[72] Scott Veitch, "The Sense of Obligation" *Jurisprudence* (2017) 8(3), 415-434, 427.

of the marketplace'.[73] There is much to concur within in this view, and Veitch points to the enormous expansion of debt as a mechanism of social control as a powerful exemplar of this broader trajectory.[74] Retaining a focus on the *existential*, *non-negotiable*, *pre-institutional* character of obligation that Veitch sees subtending contemporary rights discourse, I want to draw out an alternative trajectory for a thinking of obligation in the context of the Anthropocene.

As articulated at the opening of this article, the Anthropocene's uncanny power rests on its ability to re-situate the human *within* a set of biogeochemical loops and connections, thereby *re-attaching* human social life to a set of 'natural forces' that the political theorists of modernity sought so hard to transcend. As is well known, the modern political sphere comes to be defined by the ability for rational actors to *escape* a natural condition ('the state of nature' as Hobbes, Locke, Kant and others have it). The Anthropocene in this sense heralds a new age of attachments as political life comes 'back down to earth'. Latour, who helped us at the outset get sense of 'earthly life', describes this condition as that of being 'Earthbound', referring to an emergent subjectivity brought into being by the new climatic regime. Latour distinguishes between the *Humans of the Holocene*, and the *Earthbound of the Anthropocene*:

> Every conception of the new geopolitics has to take into account the fact the way the Earthbound are attached to Gaia is totally different from the way Humans were attached to Nature. Gaia is no longer *indifferent* to our actions. Unlike the Humans in Nature, the Earthbound know that they are contending with Gaia. They can neither treat it as an inert and mute object nor as supreme judge and final arbiter… The Earthbound and the Earth… both share the same fragility, the same cruelty, the same uncertainty about their fate.[75]

The Earthbound grasp what it means to be living in the Anthropocene. They know that the most basic legal and political questions need to be re-posed: *To whom are we bound? To what are we attached? How are we assembled?* The Humans of the Holocene like to think that they already know the answers to such questions and will continue to rely on the basic co-ordinates that have defined social life in modernity as they face the Anthropocenic challenges to come. It is an effort to re-articulate our condition as primordially *bound-beings* that is at stake in Latour provocation here. A renewed critical discourse of *obligations* can find some purchase in this context. As Weil argues, obligation assumes a precedence ahead of right because obligations correspond directly to those needs that *enroot* human subjects in material, communal and ethical life.[76] The translation of such primary obligations into the 'middle range' of justiciable rights occludes the existential dimension from which the impetus for rights ultimately springs. By insisting on the priority of obligations we can re-animate this existential dimension in the context of legal and political thought, opening space for an inquiry into the fragile nature of our *rootedness to the earth* in the context of the Anthropocene.

This shift in register to obligation has been fruitfully explored by Kyle McGee who argues that whilst many within the environmental movement (most notably Naomi Klein) advocate a politics that privileges a 'connection to place',[77] the nature of this *connection* remains elusive. Seeking to characterise the normative force that might inhere such a 'connection to place', McGee turns our attention to the work of late medieval and early-modern jurists who sought to ground law's normativity on the pre-institutional obligations that arise out of a given place and a network

[73] Veitch, "The Sense of Obligation", 429.
[74] On this theme see: Maurizo Lazzarato, *The Making of Indebted Man: An Essay on the Neoliberal Condition* (Los Angeles: Semiotext(e), 2012).
[75] Latour, *Facing Gaia*, 281.
[76] Weil, *The Need for Roots*; see also: Simone Weil, 'Human Personality' in Sian Miles (ed.), *Simone Weil: An Anthology* (London: Penguin, 2005), 69-98.
[77] Naomi Klein, *This Changes Everything: Capitalism vs. The Climate* (London: Penguin, 2014).

of situated and affective relations. As Sir Edward Coke articulates it in *Calvin's Case* (1608), the law's capacity to bind subjects emerges from the '*ligaments* that connect minds and souls to one another' that both exceed and precede the positive law.[78] Similarly, Sir John Fortescue writing in the fifteenth century, found the etymological origins of law in *ligando* (binding), rather than *legendo* (reading) and analogised the ligaments of law with the nerves that unify the physical body.[79] It is this notion of the bonds that emerge out of the primary situatedness of human life and the web of relations through which the conditions of habitability can be maintained that are arguably lost with emergence of a juridified rights discourse that came to define modern political life. In characterising the normative charge of these forms of obligation McGee suggests:

> I can find no more adequate term for the connection that we have attempted to define than *ligature*, a term that not only gathers the relevant senses of binding, tying, and holding together, but also, through its medial dimension (that is, its lexical, typographical, literary dimension), registers the circuits of becoming in which heterogeneous agencies and modes of existence are entangled, and, importantly, extends from the same root as obligation, liability, and alliance.[80]

McGee understands such ligatures to be the very building blocks of law's capacity to bind subjects in community and attach them to a complex environmental scene. Such a reading that stresses the priority of obligations aims to re-attune political life to the bonds that transcend assumed divisions between the 'social' and 'natural'; 'human' and 'non-human'. It is these lines of inquiry that return the issue of law's normative force to a set of existential questions that *precede* the register of rights that seem particularly significant in the context of the Anthropocene. Given that rights today have become indelibly marked by a juridical discourse, a shift to the register of obligation invites a broader inquiry into our contemporary 'earthbound' condition at the level of the existential, pre-institutional and pre-contractual. To foreground the distinct work of obligation in this context is to contend that these challenges have to be approached within a normative register, thereby engaging fundamental questions for legal history and theory.

Conclusion

As James C. Scott has famously argued, pre-modern states were 'partially blind' to the nature and composition of the people, land and things that they purported to govern.[81] Modern states were built on a newly discovered administrative perspicacity that was able to catalogue the identity, wealth and health of its subjects. This distinctive capacity to 'see like a state', however, goes beyond bureaucratic and administrative innovation. A suite of concepts and modes of thinking – from popular sovereignty to nationalism, from linear temporal progress to fiscal and juridical autonomy – provide the co-ordinates that define the visive power associated with modern statehood. *Territory*, *authority* and *rights* are three immensely important concepts in providing this kind of visual and conceptual clarity, allowing us grasp the contours of not only the state but also the changing fortunes of social life more broadly. The TAR framework is frequently presupposed in order to think about something like 'the social' or 'the political' at all; and as Sassen's study amply demonstrates, through a sensitivity to the interdependence and on-going re-configuration of the constitutive elements of this rubric, we can apprehend the continuities and discontinuities that define legal and political change. In the context of the Anthropocene, however, we are becoming aware of the *partial blindness* that inheres this prevailing outlook. The

[78] *Calvin's Case* (1608) 7 Co Rep 1a, 77 E. R. 377.
[79] Sir John Fortescue , *De Laudibus Legum Anglie* [*The Commendation of the Laws of England*], trans. and ed. S.B. Chrimes (Cambridge: Cambridge University Press, 1942), 31. Quoted in Kyle McGee, *Heathen Earth* (New York: Punctum Books, 2017), 124.
[80] Kyle McGee, *Heathen Earth* (New York: Punctum Books, 2017), 128.
[81] Scott, *Seeing Like a* State, 2.

provocation of *earthly life* that the Anthropocene brings into view fails to be apprehended from within the co-ordinates that Sassen identifies, calling for new conceptual tools that will help draw attention to the material, biogeochemical relations within which, the Anthropocene thesis tells us, human life is intricately enfolded.

The TAR framework, in this sense, loses its analytic purchase because it fails to render us sensitive to the very forces that are becoming increasingly significant in the context of the changing climatic system. The technologies that produce *territory* render invisible the dynamic materialism of the earth's terrain, which is already shaping contemporary political disputes; by focusing on *scales of authority*, particularly at a global register, we fail to see the *earthly forms* that are playing an increasingly significant role in the planetary system; and by relying on the register of *rights* we continue the modern project of juridifying politics, whilst leaving untouched the question of our existential, and 'inalienable', attachments, ligaments and obligations to the earth. The three lines of inquiry discussed above – *terrain, the city, obligations* – posit alternatives to the predominant framing of social life in modernity. There are doubtless alternative avenues still. The crucial point that remains, however, is that the Anthropocene exposes stark limitations with the framing devices that so often structure our view of social change and the nature and scope of political community. Indeed, the TAR framework is only efficacious in the context of our modern social forms and under the tutelage of the 'background ontology' that has largely defined modern political thought. As I indicated at the outset, it is this mode of perception and the very sense of being-in-the-world which it infers that is shaken by the Anthropocene thesis as *earthly life* intrudes into the social domain.

In recent years, the analysis of social change has largely been approached through the processes associated with 'globalisation'. A range of studies have reflected on the changing contours of political community, with many suggesting that globalisation signals the end, or at least a reformation, of modern sovereignty. The intrusion of *earthly life* into these debates represents a far more radical challenge than the postulation of the supposedly 'post-sovereign' conditions of late modernity. The emergence of discourses of globalisation in the 1990s have often been understood through processes of *de-* and *re-territorialisation*: as the state's capacities have been *de-territorialised* – that is, increasingly dislocated from national borders – new forms of *re-territorialisation* have taken hold, at global, regional, and sub-national scales. Despite early eulogies for sovereignty,[82] the state has clearly not withered away; and in the context of burgeoning ethno-nationalisms in Europe and beyond, the affective allure of, and conceptual disputations over, sovereignty remain as potent as ever.[83] The changing fortunes of sovereignty and novel forms of *de-* and *re-territorialisation*, in this sense, remain at the forefront of contemporary political debates. What is at stake in the issues raised in this article is a *completely different form of re-territorialisation*. One in which it is the material fabric of the earth system itself comes into view.

The processes of *de-* and *re-territorialisation* that have been charted in the literature to date have taken for granted the stable climatic conditions of the Holocene. The earth itself is seen as little more than a spatial extension over which different modes of human power can lay claim, administer and exploit. But the Anthropocene directly challenges this view, insisting that the materiality of the earth's biogeochemical relations become part of our political imaginary. As I have intimated throughout, this challenges some of the fundamental co-ordinates of the modern

[82] For instance, see: Neil MacCormick, "Beyond the Sovereign State" *Modern Law Review* (1993) 56(1), 1-56
[83] For a detailed assessment of this point in relation to British constitutional theory see: Martin Loughlin and Stephen Tierney, 'The Shibboleth of Sovereignty' *Modern Law Review* (2018) 81(6), 989-1016.

worldview. Where modern thought has consistently held that political community is formed by over-coming our 'natural attachments', the Anthropoceneic assemblages of the present urge a reconnection to, and an on-going negotiation with, these putatively 'natural' forces and relations. It is grappling with this new condition that I have described as a confrontation with *earthly life*. The three lines of inquiry articulated in this paper – *terrain*, *the city*, *obligations* – suggest the means by which the complexity of *earthly life* might be disassembled and through which we can begin to unpack the challenges that the Anthropocene prompts for legal and political thought.