Wet Ontologies, Fluid Spaces: Giving Depth to Volume through Oceanic Thinking

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Abstract

This paper expands on recent attempts to destabilise the static, bordered, and linear framings that typify human geographical studies of place, territory, and time. In a world conceptualised as open, immanent, and ever-becoming, scholars have turned away from notions of fixity towards fluidity and flow, and, in so doing, have developed networked, "flat" ontologies. Recent attempts have gone further, challenging the horizontalism inherent in such approaches by opening up a vertical world of volume. In this paper, we contend that such approaches are still somewhat lacking. The vertical element of volume is all too often abstract and dematerialised; the emphasis on materiality that is typically used to rectify this excess of abstraction tends to reproduce a sense of matter as fixed and grounded; and the temporality that is employed to reintroduce "motion" to matter has the unintended effect of signalling a periodised sense of time that minimises the chaotic underpinnings and experiences of place. We argue that the ocean is an ideal spatial foundation for addressing these challenges since it is indisputably voluminous, stubbornly material, and unmistakably undergoing continual re-formation, and that a "wet ontology" can reinvigorate, redirect, and reshape debates that are all too often restricted by terrestrial limits.

Keywords: depth, liquid, ocean, sea, volume, water

Introduction

> Since we live on land, and are usually beyond the sight of the sea, it is easy to forget that our world is an ocean world, and to ignore in practice what that means… Geographically, it is not the exception to our planet, but by far its greatest defining feature. (Langewiesche, 2004: 1)

As others have remarked, the ocean is a paradoxical space, both "capital's favored myth-element" (Connery, 1995: 56) and a site that suggests (unrealisable) potential for transcending its striations and structures (Deleuze & Guattari, 2004). Langewiesche sums up this contradiction by calling the ocean "free enterprise at its freest" (Langewiesche, 2004: 7), the paradigmatic space that binds the global political economy but that also profoundly challenges its underpinning political ontology, a designation that resonates with Peter Sloterdijk's identification of the Modern Era ocean as the "entrepreneurial-nautical yonder" (Sloterdijk, 2013: 79).

In previous works, we have chronicled how this tension has been productively exploited by a broad range of nautical entrepreneurs, from libertarian venture capitalists (Steinberg, 2011a; Steinberg et al., 2012) to hippy pirate broadcasters (Peters, 2011, 2014a). In this article, however, we direct our focus away from these individual and collective actors who, finding themselves on the sea's surface, use its liminality to engage in transgressive political practice. Rather, we turn to the ocean itself: to its three-dimensional and turbulent materiality, and to encounters with that materiality, in order to explore how thinking *with* the sea can assist in reconceptualising our geographical understandings. In short, we propose a *wet ontology* not merely to endorse the perspective of a world of flows, connections, liquidities, and becomings, but also to propose a means by which the sea's material and phenomenological distinctiveness can facilitate the reimagining and re-enlivening of a world ever on the move.

In taking this approach, we engage with the growing numbers of human geographers who are turning away from the plane geometry of points, lines, and areas that have long grounded the discipline. As Doreen Massey (2004) details, the Euclidean conception of space as a stable surface provides unwelcome constraints that separate

spaces from the matter and meanings that occur within. From a Euclidean perspective, the foundational "space" that remains after substance is stripped away is empty, abstracted, and atemporal, and this provides a poor foundation for theorising relational geographies of immanence. As an alternative, Marston et al. (2005) propose a "flat ontology" that abolishes the notion of scale and replaces places with *sites*: "immanent (self-organizing) event-spaces dynamically composed of bodies, doings, and sayings…unfolding singularities that are not only dynamic, but also 'hung together' through the congealements and blockages of force relations" (Jones et al., 2007: 265). Whilst this perspective expands the possibility of human (and non-human) interventions, it fails to account for the chaotic but *rhythmic* turbulence of the material world, in which, even amidst unique events of coming together, there is a persistent, underlying churn – a dynamic pattern of repetition and re-formation that provides stability and texture in an environment of underlying instability (Serres, 1996). The world is not divided into fixed, hierarchical strata and scales; but neither is it "flat."

Most recently, theoretical and conceptual interventions have sought to reanimate space as both context and site of politics by emphasising its verticality, its materiality, and its temporality. We draw inspiration from these efforts, but, as we detail below, we also find them somewhat lacking. The vertical element introduced by scholars of volume is all too often abstract and dematerialised; the emphasis on materiality that typically is used to rectify this excess of abstraction tends to reproduce a sense of matter as fixed and grounded – formed rather than processual; and the temporality that is employed with the aim of reintroducing 'motion' to matter all too often has the unintended effect of signalling a periodised sense of time that minimises the chaotic underpinnings and experiences of place.

If the challenge facing contemporary geographic theory is to adopt a perspective that recognises volume, matter, and emergence, the ocean would seem to provide an ideal spatial foundation for theorisation since it is indisputably voluminous, stubbornly material, and unmistakably undergoing continual re-formation. The third of these points is taken up in Jon Anderson's work on surfing when he writes that "the place of surf is the very definition of a place that is unreliable, inconsistent, wholly provisional, and unstable. It is a place that, at any moment, emerges in time and space from the web of

flows and connections meeting at a particular node" (J. Anderson, 2012: 575). Whilst our approach is broadly complementary with Anderson's, in this article we extend his focus from the immanence of the more-than-human ocean encounter to related issues of temporality, volume, depth, and flow that presently animate geographic theory. With a wet ontology, we propose, we can reinvigorate, redirect, and reshape debates that are all too often restricted by terrestrial limits.

Nothing but Waves

We begin our exploration into a wet ontology with a nod towards one of the most thoroughgoing *dismissals* of the ocean in political theory, from Carl Schmitt's (2003) *The Nomos of the Earth*. Establishing the foundational division of the planet's surface between land and sea, in which the former is the privileged space of society, Schmitt writes, "The sea has no *character*, in the original sense of the word, which comes from the Greek *charassein*, meaning to engrave, to scratch, to imprint….On the waves there is nothing but waves" (Schmitt, 2003: 42-43, emphasis in original). This viewpoint is mirrored in the anthropological writings of Claude Lévi-Strauss, for whom the ocean is "a diluted landscape" with an "oppressive monotony and a flatness" that fails to hold qualities to enliven the imagination (Lévi-Strauss, 1973: 338-339), and Roland Barthes' depiction of the sea as a "non-signifying field [that] bears no message" (Barthes, 1972: 112). For these thinkers, the ocean is a space rendered ideologically and physically insignificant in reference to socio-cultural and geopolitical concerns.

Schmitt's denigration of the ocean is rooted in his perception of its (im)materiality. He argues that the control of place, its transformation into property, and the communication and fortification of that property's limits through fences and boundaries is impossible in the unknowable, uninscribable, and uncontrollable space of the ocean. For Schmitt, the ocean's qualities (or its lack of qualities) make it an unnatural, dangerous space of occupation because it has few (earthly) connections to humans and humanity. As such the seas are *insubstantial*:

> Man [sic] is a terrestrial, an earthling. He lives, moves and walks on the firmly-grounded Earth. It is his stand-point and his base. He derives his points of view

> from it, which is also to say that his impressions are determined by it and his world outlook is conditioned by it … And since we found out that our earth is spherically shaped, we have been speaking quite naturally of the "terrestrial sphere" or of the "terrestrial globe. To imagine a "maritime globe" would seem strange, indeed. (Schmitt, 2014)

In his earlier work, *Land and Sea* (Schmitt, 2014), which Eduardo Mendieta describes as a "combination of mytho-poesis, philosophical speculation and political mythology" (Mendieta, 2011: 261), Schmitt is less dismissive, identifying a substantive logic in the ocean, as well as in each of the other three fundamental elements – earth, air, and fire. In this work, rather than portraying the sea as a space without inscription, Schmitt draws on the works of Herman Melville, Jules Michelet, and others to identify the ocean as a significant arena of agonistic struggle among humans as well as between humans and nature. *Land and Sea*, however, is an outlier in Schmitt's oeuvre, his one work of relatively pure philosophy (Mendieta, 2011). Eight years later, in *The Nomos of the Earth* (Schmitt, 2003), Schmitt's approach is more firmly rooted in political history and state theory, and as such he turns away from the "mytho-poetic" presence and meaning that he ascribes to the ocean in *Land and Sea*. Instead, the ocean is "reduced to a series of vectors that cycle in endless monotony," a space with neither a history nor a geography (Steinberg, 2011b: 270).

In this article, we consider Schmitt's admonition in *The Nomos of the Earth* that "on the waves there is nothing but waves," but we simultaneously contend that it is precisely these waves that make the ocean productive for enlivening our understanding of space, time, and motion. For Michel Serres, the monotony of waves, in their repetition but also in their individuation and variation and in the ways in which their whole is greater, but also less, than the sum of their parts, forms the *belle noiseuse*, the "nautical murmur" under which, "in the strict horizontal of it all, unstable cascades are endlessly trading" (Serres, 1996: 13). As "background noise," the *belle noiseuse* exemplified by the ocean subtly insinuates itself into the ways in which we understand and organise subjectivity, temporality, and spatiality. The *belle noiseuse* "is not a matter of phenomenology [but] a matter of being itself. It settles in subjects as well as objects, in

hearing as well as in space, in the observers as well as in the observed," even as it resists individuation into unitary components (Serres, 1996: 13). Whether one divides the ocean into its noises (Serres, 1996), its microbes (Helmreich, 2009), its molecules (Steinberg, 2011a), or its affective resonances (Bachelard, 1994; Michelet, 1861), one is continually faced by the paradox that any attempt to 'know' the ocean by separating it into its constituent parts serves only to reveal its unknowability as an idealized stable and singular object (Connery, 1996).

As Jonathan Raban describes, the interaction of the ocean's "unstable cascades" should be understood not simply as the movement of water but the mutation of atmosphere – space and time – as assembled from multiple elements:

> In the making of waves, first the air "deforms" the water, which then begins to "perturb" the flow of air across it; and it is out of this delicate intercourse … that the wave is born … That morning … the wind below down the long funnel of the strait … Waves barely formed were suddenly breaking white all around the boat. (The toppling crest of foam returns to the air a tithe of the energy given by the air to the water.) It took only minutes for the waves to find their natural periodic rhythm and build into a short, steep, lumpy sea. (Raban, 1999: 164-165)

Each wave, shaped by the wind, marks the water's surface and gives the sea not only (ever shifting) depth but also *form* – calm or angry, placid or brooding. These are variants on Serres' "nautical murmur" that are both event and atmosphere, foreground and background. The sea presents us with a space that is emergent through a particular co-composition of matter and forces. In turn, this hydro-elemental assemblage allows us to re-think motion and matter and how it shapes the world as we know it (J. Anderson, 2012; Lehman, 2013a; Peters, 2012; Steinberg, 2013).

Raban's designation of the sea as "lumpy" alludes to a sense of three-dimensional form. As he describes, waves are "bulging, heaping … an unruly brew of shifting planes and collapsing hillocks" (Raban, 1999: 165). The sea here is both planar – horizontal, "shifting" laterally – but likewise, it is vertical: moving upwards and downwards, rising and subsiding with height and depth. In the sea, multiple mobilities engage each other in

"reciprocity" (Adey, 2010: 3), opening attention to unrecognised *volumes* of hydro-space (see Elden, 2013a); a mosaic of vertical, horizontal, and angular shapes that provisionally coalesce into a spherical voluminous realm of matter (Sloterdijk, 2011).

This construction of maritime assemblages is ripe with affective resonances and haptic engagements, as is exemplified by Anderson in his discussion of "convergences" with the surfed wave:

> Surfers express their involvement with the place of the surfed wave in terms of being "at one" with the amalgam of sea and swell, of "merging" with this "medium," of being "intimately connected" to it. These affects do not refer to the execution of skills or to displaying the intense concentration that is associated with flow experiences; rather, they refer to a sense of union with the component parts of the surfed wave. (J. Anderson, 2012: 580)

Whilst rationalists "turn away from the waves to admire the wave-born" (Serres, 1996: 25) and romantics revel in the ocean's alterity (see Mack, 2011), those who actually *engage* the ocean, like sailors and, perhaps even more profoundly, surfers and swimmers, become one with the waves as the waves become one with them, in a blend of complementarity and opposition.

At such instances, the composition and power of the ocean – and the waves that constitute it – is revealed. On the waves there may indeed be "nothing but waves." But these waves pose provocative questions for those who would seek to develop an ontological perspective that problematizes accepted notions of time, space, mobility, and materiality. It is to this "wet" ontology that we now turn.

Territory, Verticality, and Volume

To explore the power of thinking through a wet ontology we turn first to Stuart Elden's (2013a) call for territory to be reconceptualised as volume. Here, Elden reflects on Eyal Weizman's (2002) work on the politics of verticality. In analysing regimes of governance and territories of warfare in the West Bank and Gaza Strip, Weizman proposes a three-dimensional perspective that "cut(s) through the landscape," shifting conceptualisations

of territory from that of a flat "two-dimensional surface" to a "multiplication of territory" formed through "three-dimensional volume." As Weizman explains,

> It was only by introducing the vertical dimension, through schemes of over- and under-passes, that linkage could be achieved between settlements and Israel, between Gaza and the West Bank … The horizon became a political boundary, separating the air from the ground. At the same time, another boundary – dividing the crust of the ground from the earth under it – has appeared. In the West Bank, the sub-terrain and the air have come to be seen as separated from, rather than continuous and organic to, the surface of the earth. (Weizman, 2002)

Elden argues, however, that Weizman's stress on the vertical projection and production of power fails to capture the complex ways in which power is exercised through, and in, space. As Graham and Hewitt (2013) note, Weizman successfully challenges the *horizontalism* inherent in geopolitical discourse. However his approach remains somewhat locked to a lateral vision. For Weizman, the vertical is opened by "severing the territory into different, discontinuous *layers*" (Weizman, 2002, emphasis added): the sub-terrain, the surface, the air. For Elden, by contrast, territory is constructed not just by projecting power upwards and downwards, between and across fundamentally horizontal surfaces. Rather, territory – a political technology that combines control of land and terrain with ideas about its capacity for organisation through calculative rationality – is achieved through the control of volumes. The notion of volume developed by Elden applies a sensibility that owes a debt to Sloterdijk's (2011) extended theorisations of interconnection (being-with) and volume. In particular, Sloterdijk's employment of (interconnected) spheres to make sense of lived reality, relationality, and geopolitical control is harnessed by Elden to alert us to the three-dimensional or orbicular shape of territory. Here, Elden (this time borrowing from Paul Virilio (1994)) contends that volume is not the opening of space to a further "axis" (the vertical). Rather, volume takes into account "reach, instability, force, resistance, incline, depth and matter alongside the simply vertical" (Elden, 2013a: 45) – the fully voluminous or spherical qualities of space.

Elden's attentiveness to volume is interwoven with his broader concern that the "geo" in geopolitics be understood as referring not to "space" (which is usually understood as area) or "the global" (which is usually understood as areal extent) but to "Earth" (Elden, 2013b). Although the technologies of territory may idealise the reduction of "Earth" to "space," critical political geographers, according to Elden, should be revealing how the technologies of territory "flatten" the world. This, in turn, requires digging deeper into its underlying volumes.

In drawing our attention to the materiality of volumes, Elden hints at an important point: the matter of "Earth" itself embodies a plethora of fluid properties. A *geo*-political understanding requires that we be attentive to the rich variety of materialities that constitute the volumes in which we live, and to how each of them enables and complicates the construction of territory whilst exerting power in multiple dimensions. As Elden explained to a conference of Arctic science and policy experts:

> We can't simply think of a straight-forward up-down vertical axis alongside this flat, planar, areal imagination. We need to think about this in terms of slopes, in terms of the materiality of these kinds of questions….We need to think about geopolitics not simply as global politics or as international politics, but very much as a politics of the earth, and thinking about that in terms of bringing the geophysical into relation with the geopolitical, thinking about the materiality of the "geo" in terms of how we think about the question of geopolitics….*[The politics that results is] not, then, simply a politics of the solid land, but politics in relation to water, ice, subsoil, and the submarine*. (Elden, 2013c, emphasis added)

Elden's appeal to the materialities of volume beyond Earth's surface (and its corresponding atmospheric, liquid, and subsurface layers) is provocative because it requires us to go beyond considering matter as static substance and leads us to consider the various ways in which matter changes physical state as it moves through, and simultaneously constructs, both space and time. In his commentary on Elden's piece, Gavin Bridge (2013) takes up this provocation, stressing how thinking of space through volume complicates any attempt to take the material seriously. As Bridge notes, the value

of matter is achieved not just through recognition of a substance's location in space but through the ways in which it persists, seeps into cracks, and transforms itself, all the whilst insinuating its material properties into the infrastructures and institutions that are established to enable the reproduction of volume as territory.

The materiality of water, and especially sea water, is particularly evocative of these differences that emerge when we think of territory as volume. As Virilio notes, what might first appear as a horizontal, still, and empty plane (the sea), can, through perspective, proximity, and angles, become fully spherical or voluminous:

> The expanse of the oceanic horizon was truly surprising: could such a vast space be void of the slightest clutter? Here was the real surprise: in length, breadth, and depth the oceanic landscape had been wiped clean. Even the sky was divided up by clouds, but the sea seemed empty in contrast. From such a distance there was no way of determining anything like foam movement … It was high noon, and luminous verticality and liquid horizontality composed a surprising climate. Advancing in the midst of houses with gaping windows, I was anxious to be done with the obstacles between myself and the Atlantic horizon; in fact I was anxious to set foot on my first beach. As I approached Ocean Boulevard, the water level began to rise between the pines and the villas; the ocean was getting larger, taking up more and more space in my angle of vision. Finally, while crossing the avenue parallel to the shore, the earth line seemed to have plunged into the undertow, leaving everything smooth, no waves and little noise. Yet another element was here before me: the hydrosphere. (Virilio, 1994: 10)

Volume in the Hydrosphere

Water is simultaneously encountered as a depth and as a surface, as a set of fixed locations but also as an ungraspable space that is continually being reproduced by mobile molecules; water has a taken-for-granted materiality (liquidity, or wetness) but it is also just one of three physical states that exist in continual interchange (the other two being ice and vapour). Each of these properties can be ascribed to land as well (land too has depth, underlying mobility, and transformation across physical states) but in water these

properties are distinct in the speed and rhythm of mobility, the persistent ease of transformation, and the enclosing materiality of depth. Thus, it would seem that water provides a fertile environment for rethinking the ways in which our political geographies emerge from – and impose themselves on – a dynamic, voluminous materiality.

Thinking of the sea as a space of volume, through a wet ontology, enables us to recognise that the form of water opens new territories of control and conflict. Whilst the legal control over seas and oceans has been much attended to, in historical and contemporary contexts (notably, see Benton, 2010; Nyman, 2013; Steinberg, 2001), apprehending its territory as volume presents new discussions. No longer are struggles for space and resources fought on a planar level, relating to the protection of coasts through the security of flat, surface-level sea-territory. Rather contestation has depth. The source of conflict is ever moving and impacted by the movement surrounding it (be it fish, oil, silt, or water molecules themselves). As Bear and Eden (2008) explore in their discussion of fishery certification schemes, the liquidity of the sea complicates control. Fishery certification zones are mapped, rendering the sea a flat space of areal dimensions. Yet these divisions fail to capture the mobility of either the water or the fish, and they reflect our inability to fully comprehend either in its essential mobility. Even attempts at mapping vertically fail. The drawing of lines through water in an attempt to constitute levels of legal authority fails to account for the dynamic fluidity of the various elements that constitute the marine assemblage.

As Bear and Eden write:

> Straight lines and 90◦ angles … bear little relation to the coastline, the sea bed, the distribution and movement of fish or the fluidity of water itself. These lines strictly define the areas in which fishing has been certified as sustainable. But how far can … strict cartographic boundaries deal with the essential fluidity of seas and oceans? (Bear & Eden, 2008: 488)

In his discussion of the processes of cartopolitical ontogenesis, by which notions of territory as calculable space are brought to the Artic seabed, Jeppe Strandsbjerg (2012) makes a similar point.This is also attended to by Steinberg in his consideration of the

complexities of oceanic governance (1999, 2011c) in studies of marine zonation from the 15th century Treaty of Tordesillas through to the legal fictions that failed to contain pollution from the Deepwater Horizon oil well or rationalise response to it. For Strandsbjerg and Steinberg, as for Bear and Eden, mapping at sea brings a cartographic logic of stasis and control, points and lines, to an ocean whose biogeophysical properties (mobile fish for Bear and Eden, unsurveyed Arctic seabed for Strandsbjerg, water and hydrocarbon molecules for Steinberg) are resistant to a terrestrial ontology of bounded zones and emplaced points of power/knowledge.

Implicit in these histories of marine policy initiatives is that social forces attempting to mark, control, and contain territory in Virilio's "hydrosphere" have had to adapt to the ocean's voluminous form. Bear and Eden note that the certification of fish stocks has emerged as a fluid process, open to change and geared into the networks of relationality that shape the territory, in turn reflecting the mobile, shifting, liquid qualities of water and its non-human inhabitants, whilst Strandsbjerg and Steinberg both note the unusual efforts at cooperation that have been occurring among states that are usually cast as competitors in maritime space (e.g. cooperation by the United States and Canada and Denmark and Canada in seabed mapping, and between the United States and Cuba in oil spill monitoring and hazard preparedness). The fluid unknowability of the ocean generates lines of *connection* that cut through classic geopolitical lines of *division*, much as the ocean similarly facilitates both connection and division in economic and cultural spheres (Steinberg, 1999).

From a related perspective, Gastón Gordillo (forthcoming) attends to the geopolitical sensibility that emerges from the voluminous depth of the seas and oceans. No longer, he contends, is "human control and navigation of ocean space … restricted to its surface." The character of the sea – its vertical depth, together and coalescing with its movement, its horizontal surface, its angled waves – is a space not moved on, but *through* (as Anim-Addo et al. (2014) note), and also *under*. These spatial dimensions unique to the sea in liquid form create distinct opportunities and complications for the projection of power (see also Peters, 2014b). As Gordillo notes, the technological advance of submarines has "penetrated" the surface of the oceans, marking "a fundamental breakthrough in the projective territoriality of ocean space." Once a *terra incognita* of the

planet, oceans now (re)present a space that can be occupied, harnessed, and utilised by different actors "in *any* direction" – up or down, ahead or behind, under or over, left or right (Gordillo, forthcoming, emphasis in original).

Yet volume is not merely encountered, governed, and employed differently in view of the sea. The term volume itself can be challenged further. Volume, in a literal sense, is well suited to describe earthly, grounded territory. If the classic definition of territory (*contra* Elden) is that of bounded area, then volume is the amount of space occupied by a three-dimensional object or region, as expressed in cubic units. Volume is the capacity of a container, and the classic "container" of political theory is the state (Giddens, 1985: 120; see also Taylor, 1994).

This state ontology, however, is profoundly terrestrial. Whilst boundaries of landed states and places may politically and materially shift and change and, in the process, alter volume, the volume of the sea shifts very differently. On a macro-scale, territorial control of the ocean is dependent on the physical state of its volume. Liquid molecules (the sea as fluid) are looser and held further apart. As a solid (the sea as ice), particles are packed together, closer, containing and constricting volume into a tighter form. Its mass becomes denser (although volume remains technically the same). This change, through the transformation of physical state, impacts directly on the plays of politics that then emerge. As Gerhardt et al. (2010) note, the externalisation of the sea within the modern state system is premised on a perceived "elemental distinction" between solid land and liquid sea. The sea as ice confuses and complicates acts of territorial and sovereign control. We return to this example in our discussion of liquidity, yet it is pertinent to note here that the sea, in comparison with other elements, shifts much more readily – and not just in physical state. Its volume can also shift spatially through the large-scale movements facilitated by tides and by other forces that are both planetary (e.g. winds, jet streams) and extra-planetary (e.g. gravity). The volume of water moves and as such its territory and its location cannot be pinned down. This challenges processes of bordering with a particular intensity not found on land.

The ocean is notable as well for the *rapidity* with which it changes states chemically – from vapour to ice – and for its fluid *mobility* (both of which are further discussed below). However, it is in particular its massive *volume* that has the potential to

impact "how we think about the politics of space" (Elden, 2013a: 35). The three-dimensional extent of the sea – its immense volume – makes observation and knowledge, and therefore geopolitical control problematic. The search for Malaysia Airlines flight MH370 (still ongoing, at the time of this writing) demonstrates this point. Whilst the vertical nature of the ocean has confounded both direct visual observation and satellite surveillance, it has been the ocean's *volume* – that is its existence as a hydrodynamic arena in which waves (of water) restrict investigators' ability to observe the reflection of other waves (of light and sound) – that ultimately, is making surveillance, and, more generally, governance, so challenging (see Peters, 2014b; Peters & Steinberg, forthcoming; but for a contrasting interpretation see Steinberg, 2014).

In various frames then, the sea is a fruitful space for revisioning volume and subsequent geopolitical order, offering a different lens for pushing understandings of space and power in new directions. It is also a useful space for reconceptualising and ungrounding notions of time.

Matter and Time

An understanding of territory that engages the dynamic materiality of Earth would seem to be particularly appropriate for understanding geopolitics in the context of anthropogenic environmental change, and indeed Elden's work on volume looms large in Simon Dalby's key intervention on the geopolitics of the Anthropocene (Dalby, 2013; see also Elden, 2013d). We, however, are sceptical of this approach. Although the turn to understanding the geopolitics of the Anthropocene shifts the meaning of "Geo" from "global" to "Earth," the "Earth" that emerges is one of geology, not geophysics. This is more than a semantic distinction. Geology is a science of strata: Both time and the verticality of Earth are divided into distinct layers; the latest layer – the Anthropocene – is yet to emerge as a geologic (i.e. subsurface) stratum but, when this happens, it will reflect human-induced changes that are already apparent on the surface.

This is a very different underlying geophysicality than the dynamic materiality of incessant movement and transformation that we have discussed above. Instead of indicating a world of perpetual immanence, the "Geo" in geology points to a material world of stable ontologies that persists in spite of transformations within either the

geophysical or social domains (Clark, 2010). Moreover, such conceptualisations are reliant on a linear trajectory of time that stabilises history into material strata and immaterial epochs that can be neatly bordered, bounded, and contained – marking one material layer and social era from another. Implicit in the idea of "Geo" as "Earth" when periodised through concepts like the Anthropocene is the notion of a solid, grounded, *earthly* materiality that can be worked on, and with, by humans. Geo/Earth is understood as bearing the *imprint* of human action (those same imprints that Schmitt deems impossible on water), marking processual yet stabilised change. As such, notwithstanding the reliance on the concept of "vibrant matter" (J. Bennett, 2010) often utilised by authors grasping the Anthropocene to give agency to more-than-human and non-human actors in shaping society and space (e.g. Clark, 2010; Yusoff, 2013), the matter referenced by those seeking to understand the geopolitics of the Anthropocene tends to lack a certain vibrancy.

As an alternative we see greater potential in engaging geophysics not through the linear and lateral narrative of geology but through the complexity-based understandings of chaos-theory-inspired geoscientists, including physical geographers (e.g. Inkpen & Wilson, 2004; Phillips, 2001; Stallins, 2012). This leads us to an 'assemblage' approach that presupposes a world of immanence and becoming (see DeLanda, 2006; Deleuze & Guattari, 2004). Such an approach configures a world that is open, porous, mobile, and changing, but concurrently one that can stabilise temporarily. An assemblage is a territorial "whole," but its territory may be anything – "someone, human or animal, 'home'", a nation, an epoch (Deleuze & Guattari, 2004: 504). The formation of that territory is one of emergence. It has no essence, and its trajectory is not linear. Rather, it is formed and re-formed by the elements that add to the assemblage (reterritorialising it) and leave the assemblage (deterritorialising it). Key to an assemblage is that the parts that compose it are heterogeneous and independent, and it is from the *relations* between the parts that the temporary, contingent whole emerges (see B. Anderson & McFarlane, 2011; B. Anderson et al., 2012).

In understanding the Anthropocene as an assemblage we necessarily move away from understanding "Geo" as "Earth" and instead, heeding Elden's (2013c) call, attend to a "politics in relation to water, ice, subsoil, and the submarine." This does not mean an

abandonment of time and temporal processes. After all, it is the movement (through space and time) of liquids – seas, rivers, streams, lakes – and also solids (i.e. ice) and gasses (i.e. wind) that deposit materials that form strata, and it is these depositions that ultimately inform the geo-logical, sequential concepts of time that emerge from current studies of the environment. But even as this occurs, resulting in horizontal sheets of materiality, it is the vertical influence of gravity that – over the process of many thousands of years – compacts the distributed matter into its geophysical form as rock that can be traced and dated.

In other words, it is the chaotic movement and reformation of matter, which is seen most clearly in the churnings of the ocean, that both enables and disrupts (or reterritorialises and deterritorialises) earthly striations. Our aim is not to reject notions of time. Indeed, "time is integrally bound up with the physicality of the sea" (Ryan, 2012: 12). However, the ocean suggests that we think with a different, non-linear, non-measurable notion of time (Steinberg, forthcoming(a)). As Jessica Lehman notes in response to Dalby, the ocean's physicality, and its shaping by human influence, "cannot be fully captured by scientific measurements." Rather, it "contains potential for rethinking histories of land-based governance and conquest…[not least because of] the types of encounters, negotiations, connections, and politics that these volumes engender" (Lehman, 2013b: 52).

We therefore align ourselves with Jason Dittmer's (2014) call for an understanding of geopolitical assemblages that incorporates the geophysical not as a material foundation but as a series of interwoven and unpredictable dynamic forces. As Andrew Barry (2014) argues, the linear calculative logic of Anthropocene scholars, which divides time into strata, is itself a function of the anthropocenic age, not the means of its diagnosis. We therefore argue for an alternative perspective in which time, as expressed through *assembled* matter, is non-linear and fluctuating, and matter is mutable and leaky – part of a process of on-going re-formation. As Anna Ryan notes, drawing on Rachel Carson (1999), "[In] the time-frame of…shorelines, sea levels and continents… 'there is no finality, no ultimate and fixed reality – earth becoming as fluid as the sea itself'" (Ryan, 2012: 13).

Liquidity

In advocating a political ontology that takes as its starting point flows, circulations, and the destabilising immanence of liquid, we share the critique levelled by Marston et al. (2005) at those who would reduce all global processes to flow. Indeed, a conceptualisation of the world as fundamentally consisting of fluvial social processes, if made without reference to the spaces within which those flows occur, can promote a turn *away* from the material. For example, Manuel Castells' (1996) work on the "space of flows" focuses almost exclusively on infrastructure and nodes and not on what he calls the "first layer": the material surfaces (and volumes) that the flows actually cross. In Castells' vision, the "first layer," unlike the other, urban layers, appears to exist prior to and independent of the flow's dynamism and in a separate sphere of immateriality, what he tellingly calls a "hyperspace of pure circulation" (for further critique, see Steinberg, 2001). An alternative, shifting from the abstract concept of "flow" to the material entity of "water," does not necessarily provide a more nuanced angle. As Marston et al. (2005) note in their critique of Swyngedouw (2004), water is often understood, especially in the urban context, as something that is simply consumed, not produced or encountered, an essence that lies apart from and prior to the "places" within which it is incorporated.

We also distance ourselves from those who reduce the fluidity of the ocean to a dematerialised abstraction (e.g. Irigaray, 1993; see critiques in Helmreich, 2011; Sutherland, 2014). Whilst a central purpose of this article is to think *with* the ocean as a theoretical tool, we do so with particular attention to its materiality, which can never be separated from either the experience of the ocean or the meanings that we attach to oceanic experiences. To return to Serres, the repetitive, but dynamic drone of the ocean is "not a matter of phenomenology [but] a matter of being itself" (Serres, 1996, 13), not a metaphor but a "thing in the world" (Helmreich, 2011; see also Blum, 2010; Steinberg, 2013), a volume of vibrant matter that is enlivened and made forceful through its *relation* with human life (J. Bennett, 2010; Whatmore, 2006).

Thus we propose as a starting point for thinking with water the concept of the dynamic assemblage in which mobile human and non-human (including molecular) elements and affects are not merely passively consumed but imagined, encountered, and produced. Within an assemblage, materiality persists and is re-formed amidst constant

processes of "arranging," "gathering," "mixture," and "turbulence" (B. Anderson & Wylie, 2009: 321). For Anderson and Wylie, materiality has *matter*, a vibrancy and vitalism that, to follow Jane Bennett, brings it "alive with movement and with a certain power of expression" (J. Bennett, 2005: 447), creating a productive, if unstable, *frisson* of matter and meaning.

Stephanie Lavau's (2013) analysis of sustainable water management in Australia embodies this "wet ontological" perspective in which flow is, on the one hand, a singular force but, on the other hand, composed of multiple, chaotic processes. For Lavau, water, in both its singular and multiple existences, incorporates and confounds human intervention. In her work, Lavau moves discussions of water flow beyond consumption (although this features) to how different rivers are produced and engaged. Lavau stresses how multiple ontologies of thought can co-exist in management strategies, reflecting water's persistence as a vibrant matter that has agency in its "unruliness, variability, mobility and fluidity" (Lavau, 2013: 3). Thus, from water's stubbornly liquid flow, ontological multiplicity emerges:

> An ecological river (as opposed to an irrigated river) is produced in [the] ordering of materially heterogeneous relations, in patterns of association and disassociation, presence and absence … Recorded as unconstrained variability, river flow is performed as wild. Mapped as breeding cues, nutrient transfer, and migration paths, flow is performed as life-giving … Legislated as "stressed" and underrepresented in the bulk entitlement, flow is threatened, vulnerable … *embracing relational materiality leads us to ontological multiplicity, to attending to the different realities that are produced in particular, socio-material orderings.* (Lavau, 2013: 8-9, emphasis in original)

Although Lavau's narrative, like Jon Anderson's (2012) interpretation of the surfed wave, is, at one level, about the materiality of water, it is also about water's immaterial power to shape the way we think about stasis and movement in time and space. This is a perspective that we take to heart when turning to the sea as a site for reinvigorating a discussion of fluidity and connection further still.

To be sure, as Stefan Helmreich reminds us, there are dangers in employing the ocean as a "theory machine." Through focusing on the ocean as a fluvial, dynamic space that exists in opposition to the static categories of land, we may end up fetishising the ocean as a space of "pure" natural processes, seamless transport, or romantic escape, or we may forget the ongoing connections between land and sea that make the sea much of what it is (Martin, 2013; Spence, 2014; Steinberg, 2008, forthcoming(a), forthcoming(b)). It is not the liquidity of flows, in the material sense, that allows us to overcome land-based thinking. Indeed, as we have noted, seawater is not always liquid. Rather, our theoretical insights emerge from being attentive to how this materiality has itself been discursively placed within (and outside) terrestrial ontologies. The ocean's value as a "theory machine" lies not in its existence as an object of alterity (whether real or imagined) but in the ways in which its materiality intersects with global political economies and territories, constructing a "world interior of capital" that both facilitates and disrupts the flows that constitute expansive capitalism (Sloterdijk, 2013; see also Steinberg, 2009).

Churnings, Driftings, and Reborderings

Up to this point in this paper, we have stressed how the ocean is both voluminous and liquid, and how recognition of these properties and using them to frame the world enables us to revisit assumed ontologies of space, time, and mobility. In this final section of the paper we take a new cut on the concept of a "wet ontology" by focusing on various dimensions of the ocean's *dynamism*.

Drawing on insights from Lagrangian fluid dynamics, we understand the ocean not as a space of discrete points between which objects move but rather as a dynamic environment of flows and continual recomposition where, because there is no static background, "place" can be understood only in the context of mobility:

> [From] a Langrangian perspective…movement, instead of being subsequent to geography, *is* geography. Oceanographers working from this perspective trace the paths of "floaters" that travel in three-dimensional space, with each floater representing a particle, the fundamental unit in Lagrangian fluid dynamics.

> Movement is defined by the displacement across space of material characteristics within mobile packages, not abstract forces, and these characteristics are known only through their mobility (A. Bennett, 2006). In other words, objects come into being as they move (or unfold) through space and time. Conversely, space ceases to be a stable background but a part of the unfolding. The world is constituted by mobility without reference to any stable grid of places or coordinates. From this perspective, movement is the foundation of geography. (Steinberg, 2013: 160)

Although this perspective resonates with how Massey (2004) uses the mobility of plate tectonics to destabilise notions of place on land (as well as with Manuel DeLanda's (2002) application of Riemannian differential geometry to instrumentalise Deleuzoguattarian thought; see also Shields, 2013), there are three key differences. One difference is temporal; there is a vast difference between the geological time referenced by Massey (which is removed from human experience and cognition since it is not actually experienced) and the real-time, encountered mobility of the ocean. One can hike on a mountain trail without realising that one is traversing a landform whose existence is the result of tectonic subduction. It is much more difficult to step into the surf without encountering and reflecting on both water's mobility and its depth. The second difference lies in the voluminous verticality of Lagrangian motion, which stands in contrast to the essentially horizontal movement of plates (even if this can lead to vertical phenomena such as subduction and uplift). The final difference is that plates, even amidst their movement, retain an ontological stability in their state of being which contrasts with the continual re-formation of water molecules into both different forms (droplets, streams) and states (ice, vapour).

All of these differences are encapsulated in Ryan's description of the specificity of the sea's motion:

> In this space of the open sea … the spatial configuration of surface and depth are in constant flux, with one becoming the other in continual intensity of motion. Depth rises to surface only to be returned below once again. Surface is

> submerged, becoming depth … this flowing materiality of merging and folding presents the open sea as an elemental experience. (Ryan, 2012: 1)

Thus, we see the ocean as a space of *churning*, where, after Anderson (2012), place is provisional and forever being (re-)produced. Echoing our prior critique of geology, as well as Elden's critique of Weizman, it would be a mistake to apply contemporary insights on volume and verticality to the ocean in a way that conceptualises it as a space of fixed horizontal strata (e.g. Lin & Schofield, 2014). Of course, legal institutions will always attempt to delimit volumes into strata just as they will always attempt to delimit horizontal spaces into areas (see Bear & Eden, 2008; Peters, 2014; Steinberg, 2011c; Strandsbjerg, 2012). But the nature of territory as a *political* technology means that this process will always be met with a resistance that reflects underlying dynamics that are both social and geophysical.

Yet churning occurs not just at the level of law and regulation; it also is embodied by individuals in their ocean encounters. We have referred already to Jon Anderson's work on the immanent production of place through surfing, but this can also be seen in the practice of diving. Diving involves a complex mix of, on the one hand, turning place into nothingness as one descends into the light-deprived abyssal zone (Alaimo, 2014), and, on the other hand, turning nothingness into place, as one constructs human and more-than-human relations at various depths that, in turn, make connections through time. The latter practice in particular is illustrated by Stephanie Merchant's (2014) discussion of the embodied sensation of moving *in* a body of motionful water. Her ethnographic accounts alert us to the affects of movement through a material form that challenges our usual elemental enclosure in air. The mass of water creates new sensations of weight and buoyancy. Merchant describes the water as having "overbearing surroundings" through its depth and the motion through it. Moreover, in her analysis of shipwrecks under the sea she presents a churning from present to past, and from above to below, with each dive initiated.

This reorientation from a world of stable surfaces to one of three-dimensional mobilities does not even require complete immersion. As Jon Anderson elaborates with reference to his experiences kayaking:

> The first thing you sense is your new orientation to the world. I'm now at "ground" level. As adults, when do we ever see the world from this perspective? My familiar compass bearings become disoriented by this straightforward change in vantage point. Re-positioned to the land, I cast myself adrift from it with two simple strokes – left, right. How does this engagement with the sea change my senses? As I'm floating here a child's snow globe comes into my mind. On land, my life is set in such a hemisphere, and I am grounded, in the centre, at the bottom. The ground rarely moves, I take it for granted, and I have floating flakes above me. On the sea it is different. The hemi-sphere is wholed. My "globe" is now a perfect sphere, partially filled with water, and I'm now floating in the middle, with a world around me. I become aware of the world of sky above, and the world of water below. Unlike the ground, the water beneath me isn't static. It's moving … This morning the surface has small cats paws from the squall across the water, fractal mini waves on the surface, gathering into small waves, which will eventually become a series. Due to this surface movement, even when I do nothing, just sitting here with hands in the water, I move. The boat revolves to face the waves. They lap around me, slowing inching me backwards. I become aware of the easy but strengthening wind … I'm the join between the sea and sky. My body could become a sail, my paddles too; catching the wind and moving me whether I want to or not. (J. Anderson, 2014: 107-108)

This leads us back to the spherical (see Sloterdijk, 2011) and Elden's (2013a) take on three-dimensional territory (see also Bridge, 2013). Whilst for Elden volume is of note because it *exceeds* the vertical, volume also allows for dimensions and forces that are, in a sense, less-than-vertical. Volumes have the capacity to support mass, and in this sense they take on a horizontal as well as a voluminous dimension. Thus, just as the ocean is a space of churning it is also a space of *drifting*, in which vertical forces get translated into horizontal motions that often supersede both legal logics and human intentions (Peters, 2014b; Steinberg, 2011c). Whether resisting, reflecting, or responding to the forces of

churning (as well as those of stasis and implacement), drifting is another facet of the ocean that informs a wet ontology (see Peters, forthcoming).

Finally, a perspective informed by a wet ontology suggests that as we turn our attention to the volumes within which politics is practiced and territory is produced we must continually rethink the borders that we apply to various materialities and their physical states. Grundy-Warr et al. (forthcoming) make this explicit in their application of insights from Elden (2013a) and Dalby (2013) to the Cambodian village of Kampong Phluk that for part of the year is on dry land and for part of the year is a seemingly exotic "water village." Of course, to the villagers neither environmental condition is considered exceptional. The two physical states are understood as reflecting the "natural" temporal fluctuation of a single place (much as how, within a given twenty-four hours, we accept that a single place undergoes natural fluctuation between day-time and night-time environments). But the village's temporal rhythms force us to rethink unquestioned understandings of the relationship between land, water, society, and place (as well as the categories of "disaster" and "exceptionality") and to pay attention to how these relationships are reinscribed through constructions of verticality and notions of volume as they are projected onto space and implemented as territory.

Work on the mobilities and immobilities that occur on ice similarly leads us to consider the changes of elemental state that occur when one adopts a wet ontology that challenges the static notions of extent that underpin an areal perspective on territory. In the Arctic in particular, the fundamental idealised divide between land (which can be transformed into territory) and water (which cannot) that underpins the modern system of territorial state sovereignty has little relation to actual uses of and encounters with space. The phenomenology of sea ice, as a particularly dynamic form of water, simultaneously destabilises conventional understandings of both geopolitics (as areal) and geophysics (as static), contributing to an ontological confusion that underpins much of the ongoing debate over the Arctic's future (Bravo, 2009; Gerhardt et al., 2012; Steinberg et al., 2014). This example reveals connections between the materiality of the ocean, the practice of ocean encounters, and debates over policies to regulate these encounters: a confluence of materiality, phenomenology, and policy that speaks to the political power of a wet ontology.

Conclusion

We conclude by returning to Carl Schmitt. Even though *The Nomos of the Earth* stresses a fundamental binary opposition between land and water, with only land facilitating the essential processes of territory, the ocean emerges in Schmitt's writings as a key arena for the formation of the world's geopolitical ontology in large part because the ocean is, for Schmitt, a space that lacks its *own* politics. In this article, we have suggested that this oceanic *absence* can instead be conceived of as a *presence*, with a *different* politics. This oceanic politics emerges from its materiality as a space of fluidity, volume, emergence, depth, and liquidity, properties that are all at the forefront of debates presently animating a new materialism in cultural and political geography.

But what might be the nature of this politics that emerges from ocean space? In his work on Zomia, in the highlands of Southeast Asia, James Scott (2011) demonstrates the impacts that geophysical qualities have on the art of governance and the practice of politics. For Scott, the dimensions of space are paramount to political control, and crucially, the avoidance of control. In Zomia where transient but highly productive populations live on the hillsides, above the lowlands of state surveillance, elements of the physical landscape – namely terrain and altitude – contribute to the shape of the political landscape. Scott rejects narratives that describe populations as having been driven upwards from the "civilised" lowlands. Instead, for Scott, the residents have chosen their locations as advantageous for evading governance. The conditions of the highlands produce "frictions" that thwart the effective governance of lowland states (where geopolitical control can spread quickly over flat, easily accessible dimensions of space).Indeed, Scott (2011: 57) suggests that by taking a map (a flat representation of lived, lively, and dynamic space) and tilting it in accordance with the contours that alert us to changes in height and depth we can gain a sense of the challenges faced by those seeking to project power laterally. Altitude, along with other geophysical factors – rivers, marshes, swamps, and so on – are generative of alternative geopolitical arrangements.

Might the ocean, when understood through a "wet ontology," generate a "wet" politics similar to the politics of altitude and terrain identified by Scott in Zomia? For Scott, attentiveness to the geophysicality of the hillside produces a radically different

interpretation of space, and an alternate understanding of who holds power and how they project and reject it. We suggest in a similar vein that attentiveness to the sea as a space of politics can upend received understandings of political possibilities and limitations. The ocean, as we have argued – through its material re-formation, mobile churning, and non-linear temporality – creates the need for new understandings of mapping and representing; living and knowing; governing and resisting. Like the ocean itself, maritime subjects and objects can move across, fold into, and emerge out of water in unrecognised and unanticipated ways.

It is in this context that we advocate thinking from the ocean as a means toward unearthing a material perspective that acknowledges the volumes within which territory is practiced: a world of fluidities where place is forever in-formation and where power is simultaneously projected on, through, in, and about space. A wet ontology can bring geographic theory to the sea, and bring the sea to geographic theory.

On the waves there may indeed be "nothing but waves." But if waves are understood in all their complexity – as forces, as vectors, as assemblages of molecules and meanings, as spaces of periodicity, randomness, instability and transformation, and as volumes (depths) and areas (surfaces) – then waves, and the wet ontology they exemplify, may be exceptionally well suited for understanding the politics of our watery planet.

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