

Petrified Legality, Percolating Sovereignty: Entropic Aesthetics in Laws of Ice

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entropic aesthetics in laws of ice

Lucy Finchett-Maddock

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I stood withholding nothing but a thin sliver of existence, where my feet crunched into neither earth nor sky. A meeting point of myself that only could have been felt on and within that very coordinate, where nothing and everything, meant all and sundry.

The temperature drops, the timepiece clatters to a halt, or an apparent standstill. As if grasped by the very mucus of air, where the atmosphere is so cold it breaks into stills. A second, a scene, a long chance to inhale the frozen chronology. Where each breath rests on a translucent shelf, so stunned by the gelid heavens. Heavens, where are we? Where am I? Cut loose on a dream that sat at the end of my bed for many years, tugged at my heart with Rapid Eye Movement to animate.

Animating the animated. She said that. Who said that. A thinker I know well but fractured brain cells dance past one another, as if meeting on the street, on the way to different neurological convenience stores, always bumping into one another, but never quite getting beyond the cerebral chit-chat.

I was here. I was on a glacier. With a brain full of compost – busy composting. This vast sleeping beauty. If I could slow down, I may be able to hear her breathing. I may be able to witness the movement in and out of petrification and percolation, the trickle of meltwater as

lucy finchett-maddock

PETRIFIED LEGALITY, PERCOLATING SOVEREIGNTY

*entropic aesthetics in laws
of ice*

*it moves between the crystalline walls
that make up this natural pavement to
walk on.*

ice-breaker

*Instead of imposing a form upon a matter:
what one addresses is less a matter sub-
mitted to laws than a materiality possess-
ing a nomos.¹*

These writings and their accompanying images emanate from a journey with ice that started

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Fig. 1. Perito Moreno Glacier, Patagonia, Argentina from a distance.

back in 2019 (and yet one beginning with entropy for several years prior)² – a sojourn to Argentinian Patagonia that allowed a meeting with a glacier – and one that brought me to thinking of law, its movements and how ice may help me understand legality's processes. I had the privilege of visiting its Southern region, where I met the formidable *Perito Moreno*, a glacier formation found in Los Glaciares National Park in south-west Santa Cruz Province, not too far from Parc Torres Del Paine in Chile, and the edge of the world at Ushuaia.

This is a glacier famous for its fantastically viewable façade, and its consistent state of freezing and melting that makes it less dangerous to visit with less likelihood of falling ice. This petrification of equilibrium and balance within these forms kept me mesmerised and entranced as I stood in (and on, at times), its presence. Since then, it feels as if time has warped, where even the formally balanced *Perito Moreno* is now in question – from 2020

it appears to have been in retreat, where the entropic feedback of freezing and melting between the ice and the glacial lake is no longer in equipoise.³

Back then and even now, I was moved by the aliveness of this being, my seeming inability to compute its vastness, whilst also the painful awareness of using environmentally unfriendly airways to get to see it – combined with the palpable scarcity of ice; there was a story that I perceived this ancient majestic entity trying to tell me as I stood before it.

But what was it trying to say, and was there really a story that was being told by this beautifully fierce azul creature? Could the supposedly inanimate world tell stories and fables. And if it were to speak, how could I possibly understand what it was saying? Was I listening to something I could not really hear. What possibly could it tell us of anything relating to law?

I put on my glacial listening device.

She burped and gurgled, bubbles of air blipping to the surface, to pop and spit at

the glassy walls as they slid and bounced through and along the chiselled cuts of the frosted form.

There is apparently nothing more human than the telling of stories, sitting around a fire, on the edge of a little one's bed, passing on tales, spoken or otherwise, from one generation to the next. Indeed, storytelling is a creative event through which we come to understand not just the human, but the environment around us. And yet in Julia Cruikshank's *Do Glaciers Listen? Local Knowledge, Colonial Encounters & Social Imagination*, she repeats how Athapaskan and Tlingit cultures' oral traditions see glaciers as social landscapes, both generative of, and generating, stories: "glaciers take action and respond to their surroundings. They are sensitive to smells and they listen. They make moral judgments and they punish infractions."⁴ How can a glacier repeat a narrative, a form, an exquisite movement of communication that we may find more immediately within human language? Perhaps we must require a re-understanding of the world as animated, everything alive with either a core vitalism, a spirit or a psyche, which funnily enough there has been a movement and epistemological focus in recent years to embrace – less ontological perhaps – as we dance between normative rulings of what is and is not the Anthropocene, an eviscerating historical mirror of human-made harm – whilst increasingly aware of the helplessness of the species in the face of nature's primordial decision-making – and our role within it.

Apparently, we are not in the Anthropocene. This does not exist.⁵ All that post-human hoo-ha the past few years, and there is no such thing. Or is the fact there is no such thing, just the very confirmation of this chronostratigraphic book-marking, that it really is a thing? A reality quite clearly existing beyond the human quabbles of procedure and pure discourse, where even the geological working groups may give off enough greenhouse gases (GHGs) themselves to be eligible for non-climate friendly status.⁶

It is not in words – but what material evidence may there be? What witnessing is found within

the conglomerates of matter we wade through, we perch on, we put our ice crampons on.

This disjunct between discourse and materiality is not settled of course. Tectonic plates, solid and ephemeral, shifting and moving. Even as we consider language itself, a move and shift from post-structural assertions to one that has been echoed between decolonial ethnobotany, to speculative thought, such as Robyn Wall-Kimmerer's *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* in which she relays the "grammar of animacy" locating the power of stiffness and "nounness" in language, as that which directly impacts the ways of being and colonial relations of taxonomy in the world.⁷

Law is a structuration of nouns, a freezing and a fixation of form. Language and matter have come together, they came together, they are as one. An open-ended series of prompts, instructions and formulations that bring the next day into being. For accounts before and beyond post-structuralism, it is somewhat more than language which determines the next course of human action, and yet worlds can be made with words, said in Haraway's formulation, "World is a verb [...] stories are of the world, not in the world. Worlds are not containers, they're patternings, risky co-makings, speculative fabulations."⁸

If worlds and stories are fabricated, then what better a story than **Law = LORE**.

Perito Moreno prompted my fascination for ice as a materiality, how it may allow for understandings of law, how it may teach us of the way it exists as itself, as fixation and form. As a legal pluralist, this is a natural assumption, that law can be found within supposedly non-legal places.⁹ This is a simple assumption and one that fits with a polycentric notion of law, supporting a material generation of law, through events, consequences, the passing on of traditions and customs via, of and in the world around us. As aboriginal scholar C.F. Black states, "Are we not defined by our totems, and are not our social relations and marriage laws historically woven together by powerful animal ancestors?"¹⁰



Fig. 2. Perito Moreno Glacier, Patagonia, Argentina from the lakeside.

But how might we locate ice within law? What are the legal frameworks which relate directly to the formation of ice? What is it that makes ice, ice?

What if we are to break it down and consider what really are the legal frameworks with which we may be relating when thinking through, being with, ice?

Of course it is water.

A phase state of water.

And we all know we are however many percentage water.

And we all know the earth is whatever percentage ocean-based.

And therefore there will be ice in the ocean, where it freezes.

Perito Moreno is a land-based, freshwater glacier, as part of the Southern Patagonia Ice Field, stretching to 258 km². And yet seemingly a vast array of juridical contemplation of ice comes with the areas of the cryosphere forming from, morphing along, the edges of the sea. It appears most of the law that relates directly to ice, is that of the sea.

thalassic legality

It would make sense to start with a reminiscence of Schmitt.

The Nazi jurist, concerned only with the land.

Alluvial vision.

As we increasingly understand ourselves as beings emanating from yeast, as perturbations defying any deductive breakdown of matter, even sound emanated within the whirlpool as cilia growing within bacterial life in order to pick up vibrations across waves, within fibres to connect and feel and hear without ears.¹¹ Water and sea are the “mysterious and primordial source of all life.”¹² Where are we, if we are not the essence of ice, where all is preserved in water.¹³

There is a mystery to the ocean which we are yet to delineate – at least, Western epistemologies of land that are still fathoming, legally, politically and scientifically, the altered realms of the seas; the imposing doctrine of *terra nullius* appearing to remain a framework for legislators and thinkers unfamiliar with the teeming life *always already* inhabiting, trading and being, on the waves.¹⁴ Much like the now (in)famous *Mabo* ruling, affirming the existence of native title in the common law jurisdiction of Australia, *prior* to that of an assumption of the land as void and ready for the taking by Captain Cook and his fleet.¹⁵ Infamous as it has barely since been enforced.¹⁶ Schmitt spoke of *nomos* juridical, political,

economic, and yet what of the eco-social and eco-cultural? There is a nomadism to water (and subsequently, ice, of which we shall see) that property finds challenging. We see that today on dry water, but it exists on wet water (if we are to invert dichotomies of land and sea, ignore divisions of liquids and solids). There are still great swathes of underwater depths not yet traversed by humans, yet it feels in recent years even this is becoming less of an assumption, as what were realms of untouchable water bodies increasingly accessed for their abundant natural resources, coupled with the outstretching of landed sovereignties like “curved predatory fingers [of] the blazing blue [...]”¹⁷

How have the great water bodies of the world’s oceans featured within maritime legal history? Although this assumption of a great void, an emptied out world missing its grounded familiarities, has been eloquently revealed as specious, where the Indian, Pacific and Atlantic bodies of the planet have been populated by its littoral sea-faring communities since ancient times. *Littoral* in its *literal* sense meaning, “of or pertaining to the shore; existing, taking place upon, or adjacent to the shore.”¹⁸ A first indicative consideration of the question of land and water, at what point does one or the other become accessible by right, an edgework of legal maritime and landed innovation.

What sanctimony of colonialists to see nothing within and of the “myth and narrative [...]”¹⁹ of the sea. Tracking the path of the vessel *Komagata Maru* across the Pacific and back again, Renisa Mawani reveals not only the absent narration of anything other than Eurocentricity within Westphalian and international legal impositions, but also the narrow-mindedness of any critiques. Marx and Engels premise what she terms as their “double erasure” of the spread of capital across the Atlantic, and the Pacific to follow, explaining: “They say nothing of indigenous peoples or of the Indian Ocean arena. Just as Europeans never arrived on empty lands, they also did not sail on vacant seas.”²⁰ Mawani quotes Tonga-Fijian writer, Epeli Hau’ofa,

describing the Pacific as, “a large world in which peoples and cultures moved and mingled, unhindered by boundaries of the kind erected much later by imperial powers.”²¹ It is this intermingling and cross-hatching of lives and livelihoods that give presence to non-Western legalities unhindered by state sovereignty and a concern for private property. Mawani makes reference to the Black Atlantic, the hidden rebellions and insurrections of Afro-Caribbean Slaves that were the true and untold end to slavery, unravelled by Paul Gilroy’s *The Black Atlantic: Modernity and Double Consciousness*,²² through the histories from below re-archived in Peter Linebaugh and Marcus Rediker’s *The Many-Headed Hydra*.²³ As much as the oceans have alternate characters and lineages, what is clear within Mawani’s account is a pluriversal, legal plural aqua-realm, where there is no grid, no straight line of the geometer’s rule – vessels as polyps of not just one indigenous culture’s customs and traditions, but criss-crossing other vessels of other traditions, within and amongst one another in a nonlinear chronology. Dynamisms of legalities, traversing waves, that are at once as moving with time and space itself, as the law that rides, and exists within and of, them. In contrast, the colonial shipments are also described as spaces of imperial rule, Common law moving upon and within the juridical gestures of the waters.

A breaking down of the Schmittean “clear” [pure] thinking, a reaction against the “terra-centrism” guiding legal-political assumptions of the sea, there are geographers, legal historians, indigenous scholars and thinkers beyond, making up the now established realm of the “blue humanities.” This piece feels somewhat hinged to, and somewhat less informed, by the vast amount of scholarship stretching the sciences, social sciences and humanities that are joining forces to converge and undo old taxonomies of knowing, and create new epistemologies accounting for human correlations and onto-epistemes – new cosmolegalities.²⁴ What has been referred to as a call for “amphibious legal geographies” by Irus Braverman,²⁵ a burgeoning corpus of research by

critical legal theorists and lawyers, explores what it may mean to cross the land–sea divide, understand the limits of sovereign frameworks of the sea based on extractions of property – simultaneously occurring as the capitalist creep into “the high seas”²⁶ ensues. The specific geomorphology of the Polar regions,²⁷ and what is known as “the area” under the UN Convention on the Law of the Sea (UNCLOS),²⁸ are at the edge of international law, where it breaks down – in reality and metaphorically.

A canonical vision of the oceans as vast and unfathomable, unnameable – (a)legal – has somewhat come at loggerheads with the chequered chronosphere of complex national and international laws ebbing from coastlines, to deep sea shelves, protected reefs – hiding in underwater currents. A conceptual vacuum, the *terra nullius* of the sea, prevaricated by Grotius, has been split open, decanted in full view as a **pure** emptiness that obscures the *[impure]* lifeworlds teeming on and of the waves.

An “old law” of the sea, inviting in extraction where these watery realms of the oceans are nothing more than a playground for economic gain, the removal and abandonment of peoples to and from unknown shores. This “freedom of the seas” or *mare liberum*, has been superimposed by the “new law” of enclosure, UNCLOS as an intricate treaty system withholding its own court of arbitration and various other protocols and conventions. Interestingly enough, Grotius’ understanding was in response to the *mare clausum* of Portuguese claims to the Indian Ocean, whilst acting as counsel to the Dutch East India Company in 1608.²⁹ The conceptualisation of closed sea similarly came as a response to the Dutch precluding dominance over the Indian Ocean, after the Treaty of Antwerp in 1609. Disagreements over the free or closed sea of the Indian Ocean were embedded in proprietorial claims, where the English East India Company sought access to the same trade routes, prompting James I to seek legal advice as to accessing those waters. In 1619, after ten years of tension between the English and Dutch over the

freedom to fish and trade around the North Sea and beyond, he turned to John Selden,³⁰ who submitted the work *Mare Clausum (Of the Dominion, or Ownership of the Sea)* to the king.³¹

Over time these two doctrines of commons and enclosure, have remained in a fluid jigsaw, within the confines and structures of the contemporary laws of the sea through UNCLOS, and existing on its edges as it demarcates its limits and remits – indeed, 40 per cent of the earth’s surface is made up of the high seas, as defined under international law. The liberty to take the sea is replaced, according to commentary from international lawyers, by “a merge of Grotius’ free sea and Selden’s enclosed sea concepts. For these reasons, some have characterised the modern history of ocean governance as a ‘seesaw’ – an oscillation between free and enclosed regimes.”³²

Perhaps this seesaw may not come to be for much longer, as closed and open regimes of property (as commons are still a form of property, an etching, a making and resource management system) are shifting in response to further extraction and resource needs. As “the area” and the “high seas” become increasingly open to contestation for economic exploration of the seabed, ocean floor and its subsoil, this meeting point of free and closed seas may be a relic of colonialist philosophy and heritages, to be furthered by those of new complexity and stealth. Under a series of UN General Assembly resolutions relating to UNCLOS and the “area,”³³ there have been moves to develop a regime of interrelated state and international organisational governance of the “area beyond national jurisdiction” (ABNJ).³⁴

Schmitt inferred a “characterlessness” of the sea, a space that remained out of bounds of the *telluric* friend and enemy relations of landed war, a lack of character as an etymological removal of naming, etching (*charassein*, as to engrave, to scratch, to imprint).³⁵ Yet the ocean is brimming with ontologies that may or may not be engraved as such, an unfixedity or custom and legal plurality that causes uncomfortability for European mariners and a compulsion to control – and yet a liquidity

integral to the way of life as those that make the waters their home, both human and otherwise. De Lucia considers the meaning of ethos arising out of dwelling, following Heidegger who “explicitly observes man’s abode, the ‘open region in which the human being dwells, and one directly linked to one’s character.’”³⁶ However, what of the influence of character by the environment in which one is “born and raised, with all its particular climatic, geophysical, and ecological conditions. One’s abode, family, and community have a significant influence on one’s character.”³⁷ What of an aquatic upbringing, a natatory family of origin. It is bound to make for a characterful sea, but perhaps one not of the laws foreseen by enclosers.

Does the sea merely reproduce visibly what is happening within us, within solid structures that appear as unbreakable as the next, and yet we are as billowing and undulating as the very waves of the oceans themselves? And yet what of sea ice? And yet what of sovereignty?

And we speak of water as a body. Surely does that mean the body before the law? Habeas corpus as H₂O itself? [=] It is in the sea where ice and sovereignty are as one.

percolating sovereignties

*The modern state system is based on a fundamental distinction between solid land (which is divided into state territories) and liquid ocean (which is beyond territory).*³⁸

Ice has never been too far away from questions of sovereignty – whether it be the Third Reich’s fascination for ice cosmology,³⁹ to the geopolitical emplacement of Greenland between the United States and Russia during the aptly named Cold War, and its helpful icy building material for US constructed bases in Camp Century, known as the “City under the Ice,” an experimental military American city built entirely inside the ice sheet in 1959–60.⁴⁰ As maps become redrawn through the alteration of cryospheric landscapes due to changes in climate, so too will remnants of wars gone by be revealed.⁴¹

During the Cold War, under the High Arctic relocation, Canada sent Inuit families to the far north in the High Arctic relocation, partly to establish territoriality.⁴² Ice and sovereignty are thus integrally linked – as to ice and domination. The ice and those who have been indigenous to its fluid constructs and nature, are inherently bound and constituted, whereby the material livelihoods and traditions



Fig. 3. Close-up of Perito Moreno Glacier ice field.

entangled with violently and forcibly removed customs and traditions, denote the weaponisation of ice's integrality with indigeneity.

As temperatures increase, large parts of our cryospheric zones are melting and diminishing, and even on a more visible day-to-day level, we are able to see less snow on the hills in places that used to be covered, and experience milder conditions that make freezing increasingly less likely.⁴³

SEAWATER FREEZES AT A LOWER TEMPERATURE THAN FRESHWATER, 1.8 DUE TO THE AVERAGE 3.5 PARTS PER THOUSAND SALINITY

Where the sea rests, so does its frozen formations. But the salt waters are unique in their consistency and capacity to not just freeze, but to create variant formations of ice. There are differences between “icing conditions” that produce ice, requiring some level of freezing when water freezes. However, sea ice forms at a lower temperature than freshwater due to its weight, consistency and its constitution via salinity. The World Meteorological Organisation (WMO) has defined categories from first year to multiyear ice, with variant stages in between such as grey ice and grey-white ice – new ice from ten centimetres to multiyear ice that has survived a summer melt season and ranges in thickness from two to four metres.⁴⁴ Sea ice can formulate and appear altered, as it moves and shape shifts with the plundering waves – segmented off like floating pitta. There are small needle-like ice crystals called “frazils” that expel the salt until there are enough frazils that gather together at the water's surface to form more solid layers of sea ice – the very morphology of ice via salt.⁴⁵

What is it about this process that brings to life the juridical form? Not least that of sovereignty?

As has been eloquently surmised:

sea ice is never just “frozen water,” as expressed in the hundreds of local names used to distinguish sea ice types. It is always in a process of becoming and

*dissolution across space and time, undergoing continuous structural alterations through snow accumulation, lead formation, wind advection, brine rejection, and countless other ice processes.*⁴⁶

These observations of the ICE LAW Project⁴⁷ were gathered over the course of five years, accounting indigenous Inuit communities' integrality with the cryosphere and their having to adapt to a changing environment due to climatic change, coupled with a lack of cogency for international law regimes to account for the dynamic nature of frozen forms within its juridical frameworks.⁴⁸ Their observations form a body of interdisciplinary research spanning international law, border studies, political theory and cryospheric science, sheds light on the terra-technicalities of ocean morphology, indigeneity and sovereignty, as climate-induced sea ice melting ensues – with consequent opening of sea routes in the Arctic having increasing interaction between shipping or resource development activities and traditional uses of the sea by indigenous peoples in the Arctic.⁴⁹ The extent to which a “right to be cold” read into international law through a combination of indigenous rights and the law of the sea, has been an argument made by former Inuit Circumpolar Council Chair Sheila Watt-Cloutier.⁵⁰

As new sea passages open up where sea ice is melting, the ethical use of icebreaking vessels on those diminished solid formations, its impact on ecological and indigenous entanglements, to push through new shipping frontiers, has been questioned under international law.⁵¹ Thirteen Inuit communities' perspectives were gathered on Low Impact Shipping Corridors in Canada's North, and residents consistently referenced the threats posed by icebreaking.⁵² These new burgeoning pathways assume “the ocean, including in its frozen state [...] understood [...] as a surface to be crossed [not] as a lively space of intersecting mobilities, interdependencies, and transformations.”⁵³ This may bring International Maritime Organisation's International Code for Ships Operating in Polar Waters 2015 (Polar Code) into contact

with UNCLOS 1982 article 234, the only provision within the UNCLOS Treaty system that directly relates to ice and its legal formation, as an increasing number of vessels make way in previously ice-packed routes.⁵⁴

As sea ice melts, the underlying sovereign limits are revealed, and by some nations, sought to be explored further to maximise resources and economic wealth. As of 6 February 2023, the Commission on the Limits of the Continental Shelf (CLCS) gave commendations in favour of Russia's twenty-year bid to extend its Exclusive Economic Zone (EEZ) to the Mendeleev–Alpha Rise, the Podvodnikov Basin and the Lomonosov Ridge at the limits of the North Pole. Under UNCLOS, a coastal state maintains sovereign rights and jurisdiction over its continental shelf for the purposes of exploration and use of natural resources.⁵⁵ The delimits of sovereignty are determined under a measurement from the baseline (low tide mark) of a coastline, up to 200 nautical miles (nm) from the coast.⁵⁶ This process is made more complicated as sea levels rise due to rising tides, as the means of measurement of EEZ will have to change, and as Russia now covers up to 40 per cent of the melting Arctic coastline, with a queue of submissions to the CLCS for claims to emerging continental shelf by Russia, Denmark and other states converge and overlap near the North Pole.⁵⁷ Expert commentary on Russia's aggressive international relations and invasion of Ukraine in recent years have sought "to understand the reason for Moscow's change in geopolitical stance in the region, and its altered perceptions: less ice, and thinner ice, makes it more vulnerable."⁵⁸ The Bering Strait between Russia and America (now collectively owned by the Bering Straits Native Corporation, managing nearly two million acres of subsurface land selected by seventeen village corporations) is seeing the thawing of permafrost, accelerated erosion of rivers and shorelines, lakes draining, sinkholes and land slumps. These new zones and thawing of lands prompt exploration for novel sources of energy in the polar regions, with fresh expectations for climactic melting as tempering sovereign property thresholds.⁵⁹

The material nature of ice and its capacity to be a powerful tool of legal interpretation offers a lens, for better or worse, within international law. There is a very clear absence within global legislative frameworks that directly describe ice and its (im)material nature, and its role in the territorial foundation of the modern state.⁶⁰ Only one of the 320 articles of UNCLOS acknowledges that parts of the ocean are frozen, not liquid. Article 234 (Section 8 of Part XII which deals with the protection and preservation of the marine environment) gives coastal states exceptional environmental powers in portions of their exclusive economic zones where the persistence of "ice cover" for "most of the year" poses a hazard to navigation.

And yet this discussion seemingly relates only to ice that is found in the sea, or is of maritime origin.⁶¹ Although given its flux between solid and fluid status, the boundary of ocean and land becomes dissoluble when ice emanates the threshold, whereby "the political and legal importance of [...] ice must be considered in the context of international relations and international law in general."⁶² As highlighted by Machowski, never more so was this demonstrated through the problem of delimitation of state frontiers on ice through the Anglo-Russian Convention 1825 between Great Britain and Russia concerning the boundaries between their American possessions (Canada and Alaska) and in the Russian–American Treaty 1867 on the sale of Alaska by Russia to the United States – both make reference to the "Frozen Ocean" arguably seeking to extend territorial claims through equating land with frozen sea ice.⁶³ This capacity to manipulate the indeterminacy of ice as neither solid nor liquid, or both, within law, for means of territorial expansion, exploitation and extraction, reiterates it as a catalytic tool of sovereignty.

~~The seas join the nations they divide.~~⁶⁴

Much like the remainder of state and international laws, there is a capacity for vagueness. A rule by omission, where interpretation of language and text proffers the stretching of requirements and obligations. This vagueness



Fig. 4. Silhouette on Perito Moreno Glacier.

may speak of an openness, and yet is this just lack of fluid taxonomy in its entirety, where a new epistemology of legal percolation⁶⁵ may be necessary?⁶⁶

And yet the very ice that brought this piece to being, is not sea ice. Surely there is no contested sovereignty as glacial ice carvings clatter like collapsing car parks, into the aquamarine mirror of the glacial lake of Perito Moreno below.

There is ice that is not of the ocean. Glacial formation, groundwater underworlds of stalagmites and stalactites. Effervescing like perturbations of movement itself, upskilling, downskilling. Icebergs and glaciers from snow falling on land. Lake and river ice from fresh water.

petrified legality and juridical phase states

“A first step in this process,” as John Gillis states in his archeological challenge to the Garden of Eden myth, “is to recognise that land and water are not opposites but inseparable parts of an ecological continuum.”⁶⁷

Just like a version of *homo technologicus*⁶⁸ and a critique of culture’s exclusion of technology is

found in the writings of 1950s sociologist Gilbert Simondon who states “the opposition drawn between culture and technics, between man and machine, is false and has no foundation”⁶⁹ – so too the same for land and water. This “hylomorphism,” matter and form coming together as “ontogenesis and the conditions of an individuation (placing into relation form, information, and potential).”⁷⁰ What happens when ice denotes a constant movement in law? “How can one preserve form in a space that is legally constructed as formless?”⁷¹ Where the inherent nature of terrain is to inherently alter and shift, how else could its juridical translation be, other than with instability at its core. Most legal systems seek to capture, control and provide a sense of certainty in a world of events. It has been said many times a constitution is as responsive as the events that rupture it – not wishing to resurrect another Schmittian catacomb, and yet the presence of a state of exception – or at least space for potentiality and uncertainty – as law grows and perturbs its external horizons – feels prescient.

Esther Leslie describes the phenomena of liquid crystal, “petrified unrest proposes at one and the same time the frozen and the fluid, stillness and movement, the static and the fizzing,”⁷² where there is a petrification

and inertness that suggests a void, a non-space where an entropic movement may be captured. As has been referred to demonstrably by a lack of capacity to incorporate ice into legal taxonomy, there is an indicative and intrinsic role of ice in the formation, and movement, of territorial and sovereign thresholds. Ice automatically speaks of thresholds and phase states – “a substance between two states” where the phase transition from solid to gas without passing through the liquid phase is a “mode of processing existence [...] liquid and crystal enter into a partnership, with the discovery of a state of nature that exists and can be impelled.”⁷³ Within this, to what point does matter arrive and the role of melting and transformation “always already immersed in the play of quantum in/determinacy”?⁷⁴

***Ice
is an
evidently
entropic system, one that
illustrates
the laws
behind the laws,
so perfectly.***

Within science since the nineteenth century, the Second Law of Thermodynamics tells us that every system is in a state of decomposure, that there is always an element of disorder, whereas the First Law of Thermodynamics relays a story of crystallisation and a move towards order. What is produced in both instances is entropy, the state of a system at a given time and the extent to which it is in decay (which thus far scientific thought has deemed this as the confirmation of an arrow of time).⁷⁵

Entropic processes (whether positive or negative) are an emergent motility that unfold revealing plasticity as instability, occurring just as we might imagine a “substance between two states”⁷⁶ or “phase transition” of movement between “solid, liquid gas: [the] schoolbook-familiar states of matter.”⁷⁷ Entropy impels us to think further as to what

point matter arrives at itself to coagulate within quantum changes the point one “body” becomes another, and if this negentropy is animism inscribed and preceding material form to create life, or if life force itself comes from matter; the very performative character of matter, producing ways of being and knowing, “the indeterminacy principle allow[ing] for fluctuations of the quantum vacuum.”⁷⁸ Perturbations happening at the molecular level break down boundaries, making nonsense of the “border wars” Haraway propounded, creating fissures in our understanding of ourselves and the larger ecosystems of the world around us. At the quantum level we therefore are speaking of movements across a “field,” one that is electromagnetic and excites animation, across and in between “the difference between Life and Nonlife, the organic and inorganic, by ascribing a ‘constrained dynamism’ pulsing through both [...] uniquely ‘dynamic, open-ended, ontologically.’”⁷⁹

This desire for change in formation, to extend the self, to manipulate matter to remonstrate the basic quanta of what creates the self, and the other, is a use of vibration and energy of materiality. These breakdowns of laws to the (im)material are not new. A natural presumption almost these days, to understanding law in its spatial, geographical, temporal and aesthetic formulation. These understandings of law as spatially defined often refer to the nature of land as divided into individual property, whereby familiarly described as one of the many “turns,” to be located this time in legal theory,⁸⁰ the shift to spatial thinking in law coming from oft geographic understandings of the built and natural environment.⁸¹ Here is a shift away from law as purely found within text, and within courtrooms and legislators and chambers, it can also be found within architecture, design, whereby legal pluralist conceptions of law have come into contact with those of spatial understandings of law, paving the way for considerations of law as enacted through its effervescent material

structures. The coming together of culture and materialism has been sufficiently propounded through historical materialism, and more recently strands of new materialism and speculative thinking in jurisprudence, which seek to posit the question of the non-human within legal arrangements. Legal materialism as an early form of “eco-law” referring “to the unlimited domain of law that emerges from life and the Earth,”⁸² whereby the human and non-human coalesce to form legal rules and expectations, as such. These are norms that are “formal state-based law [as] emergent from, reliant upon, and ultimately blended into an extended *nomos* in all of its plurality and materiality.”⁸³ Following from Alain Potage’s discussion as to “Holocene Law,” he even indicates the very fragments and remnants of law that may be “signals” of its origin, whereby there is a coming together of social and material evidence to construe the material conjecture of law. This can be through rock formation and sediment, those “techno-fossils” which are now seen as wholly human-made and constitute a new milieu of boundary work identifying the Anthropocene, and thus the material constructs and sediments of law within the layers of that which appears as natural.⁸⁴

It seems as though at the level of legal sovereignty, questioning the dualism of solidity and liquidity through frozen form, is too nomadic for the realms of categorical relations of property, too much of a threat for the fixation of heritable form, almost challenging the “state-centred conceptualisations of both self-determination and sovereignty upon which the international legal order is based.”⁸⁵

And yet what for the frozen worlds we may find in a muddy puddle, a petrified sheen to an inland lake?

**The frost on our doorsteps
and more familiar frazils
biting the air.**

The closest conception of ice on land as opposed to the sea, relates to how land is understood through property and rights to water, namely “riparian rites.” In English and Welsh Land law, *cuius est solum eius est usque ad coelum et ad inferos* – the owner of the soil also owns everything up to the heavens and down to the depths of the earth.⁸⁶ Although there are exceptions (coal, natural gas and oil) deemed under statute, to be property of the Crown.⁸⁷ Rights to and of water, however, are rather peculiar. Water that passes over or flows through land is not that which is owned.

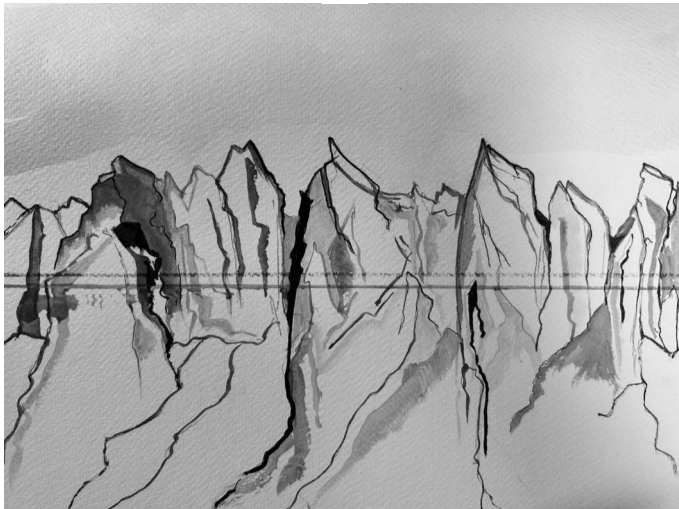


Fig. 5. Lucy Finchett-Maddock, *Close-up Perito Moreno Icefield (& Law)* (watercolour).

It is not seen as a chattel as such (a fixture to the land),⁸⁸ it is understood as flowing through and over land, thus there is a rite of passage for water, rights to access water⁸⁹ and licences needed to extract large volumes of water.⁹⁰ It is also conveyed with a title to land.⁹¹

And yet when there are boundaries to land that are unclear and its edges traversed by water, the boundary will move with the water, so that the land will either increase or diminish in size accordingly.⁹² This process is known as “accretion” or “diluvion” and promotes movement imperceptibly. This movement is just as the waves, withdrawal, a “heuristic *katechon*,”⁹³ a withholding and forestalling, as the water recedes and accedes, inferring a bifurcation shift, a moment of edgework and transformation.

Are we not all riparians? Are we not all littoral?

Edgework from land to sea, solid to liquid, ice to water, is no clearer in the distinction than with accessing the foreshore. In England and Wales, access to the beach “as of right” became a point of contention as to the granting of a novel use of Town Village Green Applications (TVG) under the Commons Act 2006 s.15, for an area of beach, the decision by the local council then appealed by the so-called “owner” of the beach.⁹⁴ The foreshore of Newhaven beach, under the statutory ownership of Newhaven Port Authority (“NPP,” Newhaven Port and Properties Ltd), was questioned by a resurgent application of monarchical customary rights to access between high tide and low tide. This quintessentially Common Law jurisdictional challenge, further taken to the UK’s Supreme Court,⁹⁵ elicits a brinkmanship between alluvial and hydric materiality, and a limit to the conception of individual property. Surely there is an assumed allowance to a nation’s subjects to access the very borders of its sovereign estate, through swimming, beachcombing, walking along the shore. Historically the foreshores are seen as those, within the UK context, as belonging to the Crown, with the decision to convey any beach estate onwards to another proprietor, as remaining with the monarchy. NPP took this as read, that having been conveyed the statutory authority to manage

Newhaven Port, they therefore believed they had the right to grant access, or otherwise, to the local community. Having disallowed the locals from being able to have recreational access to the foreshore, the locals rebelled seeking successfully to use a TVG to claim the beach as a “commons” for their enjoyment of those in the area and beyond. The TVG was removed on appeal by the NPP, with the court ruling the use of a TVG would remove a customarily implied licence by the king, for his subjects to “as of right,” access the foreshore.

This remains of interesting consequence for distinguishing the legal hinterlands between land and sea. A meeting and merging of commons with individual property, of liquid with solid juridical states, of the fixed and unfixed. In 1821, it was ruled “the public have no common law right of bathing in the sea; and, as incident thereto, of crossing the seashore on foot, or with bathing machines, for that purpose”⁹⁶ – and yet nevertheless the defendants were not ruled as trespassers. The argument relied upon a sedimentary movement between land and sea, what is allowed between high tide and low tide, what would have been considered a viable recreational activity, to the extent the tidal changes give way to new passages of movement and travel, and rights of way. The gap between the high tide and low tide alters with the waves, and yet an altered number of activities could take place dependent on the extent of exposed sand and soil, over a given period of attrition and time:

By what law can any wharf or quay be made? These, in order to be useful, must be below the highwater mark, that vessels or boats may float to them when the tide is in; but when the tide is out, no carriage can pass them. In some parts of the coast, where the ground is nearly level, the tide ebbs to a great distance, and leaves dry very considerable tracts of land. In such situations, thousands of acres have, at different times, been gained from the sea and its arms by embankments, and converted to pasture or tillage. But how could such improvements have been made, or how can they be made hereafter, without the destruction or infringement

*of this supposed right? And, it is to be observed, that wharfs, quays, and embankments, and intakes from the sea, are matters of public as well as private benefit.*⁹⁷

A later case declined to hold that gatherers of coal on the foreshore for personal use were trespassers,⁹⁸ furthering the temporal and spatial gap between liquid and solid law.

investigative ice-thetics

*Every genuinely modern/contemporary artwork stages the processes of entropy within itself. Every such artwork operates by deforming and dissolving traditional artistic forms.*⁹⁹

What are the ways of investigating ice and legality from alternating methodologies? We can spatialise law, but is that enough to take it out of its setting and isolate it? Can we isolate ice away from its sovereign contestations? How can we witness the lack of distinction between any phase state of law? How can we know of law? How do we know of terrain? Elden recites Machiavelli as he suggests political rulers should make an effort to understand a land's topography, its terrain, by navigating it, getting to know it (traditionally via hunting).¹⁰⁰ Materiality, of course, brings

forth how we may manipulate and make use of it and it may be expressed and understood through contemporary art practices,¹⁰¹ leading to the work of Susan Schuppli and her work on ice materiality, and law, specifically the cryospheric environments in the Canadian Arctic, Svalbard Archipelago and the Hindu Kush Himalayas.

Schuppli is an artist-researcher, chair of the highly regarded research group at Goldsmiths, Forensic Architecture,¹⁰² pioneers of what has now become regarded as “evidentiary art” and the combination of investigative approaches of evidence gathering, with aesthetic processes of data visualisation, forensic aesthetics and practices of artistic research. Her projects “Listening to Ice”¹⁰³ and “HEAR”¹⁰⁴ proliferate methods of research that are truly transdisciplinary, at once research, contemporary art and science. Evidently, there is an increasing need to bring together disciplines in order to create new ways of understanding the world around us. There has been what Rose has described as a “convergence,” where the rise of the image and the affectual as a communal language across our globalised world, is reflected in the way in which we record, analyse and communicate between ourselves on a daily basis, followed through in the methods and methodologies used to research these trends, and



Fig. 6. Glacier from afar.

the kinds of knowledge produced as a result.¹⁰⁵ This “convergence as medium” is in recognition of the increased use of legal forms by contemporary artists, use of art by protestors, images by lawyers and so on.¹⁰⁶

HEAR combines science and artistic research with acoustic and aural methods of investigation of the cryosphere and the effects of climate change, inevitably resulting in aesthetic consideration as works of sonic and filmic art. Of particular interest to the consideration of law and war, is Schuppli’s project “Cold Rights,”¹⁰⁷ bringing together human rights advocacy to the forefront of artistic practice, furthering the argument for a *right to be cold*. This demand has been dismissed by the Inter-American Commission on Human Rights (2005)¹⁰⁸ with previously mentioned Inuk activist Sheila Watt-Cloutier’s petition “Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States” on behalf of herself and sixty-two Inuit people living in the Arctic regions of Canada and the United States. Schuppli demonstrates within her work how cold rights are questions of justice on a climatic scale as opposed to the partitioning of rights, and how changes in climatic shifts in temperatures are re-drawing sovereign lines.

Artists have used the theme of entropy as an inspiration in their work for some time, most famously in Robert Smithson’s *Spiral Jetty* (1970) and his writing where he speaks of minimalist artists who seek to produce work “against the ages.”¹⁰⁹ Anya Gallachio has exemplified this concern for the forces of decay with her own installations, such as the decomposing flowers of *preserve “beauty”* (1991–2003). Aesthetic theory has also had an ongoing conversation with these emergent processes, such as Rudolf Arnheim’s now classic work *On Entropy and Art: An Essay on Order and Disorder*, who saw the law of entropy as that which makes for a “bothersome discrepancy in the humanities and helps to maintain the artificial separation from the natural sciences.”¹¹⁰

Ice has not been far from other artists’ work. Of particular interest is Julian Charriere’s *The Blue Fossil Entropic Stories* (2014) that sees him blowtorching ice in a continued manipulation of the flow of time through artistic practice. Artists have also been equally mesmerised by ice, with Olafur Eliasson’s melting ice from the Arctic outside the Tate Modern in *Ice Watch* (2014), and others such as Ilka Raupach, Frank Nordiek, Wolfgang Buntrock and Raner Jacob. Paul Kos’ *The Sound of Ice Melting* (1970), a piece created during the



Fig. 7. Moonscape on Perito Moreno Glacier.

political backdrop of the Vietnam war, included a twenty-five pound block of ice surrounded by eight microphones, as if a press conference commonly reporting on the events of the war at the time. This piece crossed the division of performance and sculpture, where the movement of the ice into water through recordings of the drips was reminiscent of the Zen practice of *koan*, the sound of one hand clapping. Kos' work is the kind of sculptural installation that Lucy Lippard referred to as a "dematerialisation work" where "the artists' refusal to objectify or solidly alters the conventional expectations for sculpture as something durable, discreetly formed or built, balanced from part to part, or substantially refined in numerous ways."¹¹¹

This participatory unfinished practice is the epistemological foundation of evidentiary art that is also such, whereby science and art are combined to track material and structural changes within objects and processes most famously exemplified in the legal evidentiary

work of Forensic Architecture, of which Schuppli is chair. It has been quite some time within the world of Western contemporary art, that the divisions between art and life have been tangibly used as creative fodder and material, whilst questioningly being broken down and reified simultaneously. Moving and shifting between the realms of everyday life, from protest, sit-ins and kettling, where manifestos have been creative zeitgeist and revolutionary fervour combined, artists on the Futurist right and on the Situationist left, crossing aesthetic and political divides through the breaking down of art and life. Evidentiary art and forensic aesthetics are some of the most contemporary forms of aesthetics that sits at the top of this tradition, this praxis, the movement between politico-aesthetic-epistemological formation – the forming of form itself.¹¹²

Some of the most incisive journalism, reporting, information gathering and evidence portrayal in recent years has not come from news agencies, but ironically from a transdisciplinary

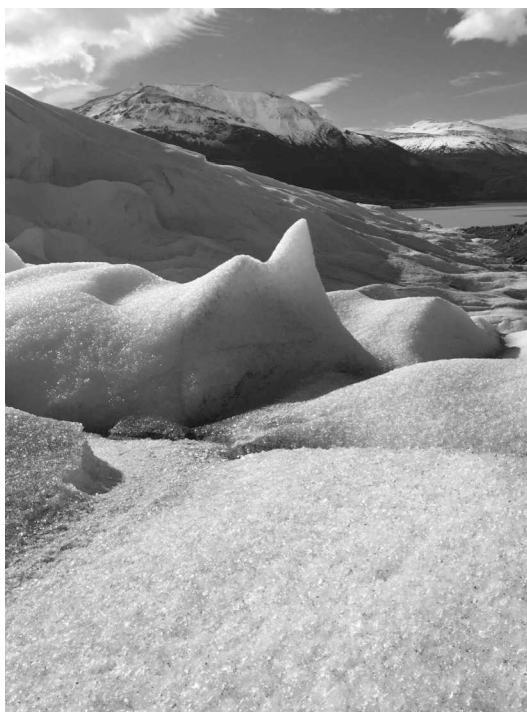


Fig. 8. Up close on Perito Moreno Glacier.

gathering of artists, lawyers, activists, architects, designers, Forensic Architecture, headed by Eyal Weizman and Susan Schuppli, amongst many others. The research group has proven formidable not only as finders and collators of information, but simultaneously the producers of creative artefacts shown around the world in exhibitions, biennales through their artistic research and processes. Their use of a number of different visual and haptic research methods, such as 3D modelling, audio analysis, pattern analysis, simulation and augmented reality, in the terms of Fuller and Weizman, speak to “the mobilisation of sensibilities associated with art, architecture, and other such practices in order to speak truth to power.”¹¹³ This increase in information has come at a time in the increase in spectacle, whereby the intersection of technology and politics exudes an art/evidence dichotomy, and aesthetic practice.

witnessing the entropic edge

As that which struggles to understand itself, law as not yet formulated struggles to do so because it is not yet equipped to know itself. Is the edge not the mother of invention? A coming to know one’s self where heads bow over self-reflections at the periphery of new experiences, new epistemologies?

Leslie relays Benjamin’s dialectical images, in reference to the toy snow globe as the “freeze-framing of a scene of life, not death.” Using this methodological pitch, perhaps we can take ice as the clearest form at which “the historical relations of life might be made visible, or, to use another of Benjamin’s terms, they encourage the concoction of ‘dialectics at a standstill.’”¹¹⁴ Even to go so far as to say that ice is the clearest form through which laws of entropy and entropies of law, are known. Much akin to a Baradian onto-episteme, ice is not merely an analogy, a linguistic turn but much more:

Flurry and freeze could be seen as codes for the subjective and the objective, so neatly kept apart in social theory. Flurry as

*subjective blur. Freeze as the cool eye that apprehends a deadened scene.*¹¹⁵

Ice is a receptacle for law-making, for the making of matter itself, is in a constant process of elevation, demonstrating the power of the edge and the meeting of the outside, the other, the border, in order to morph and form within and without. The juridical is not just a movement of the state, but a movement of energy, heat, the kinetic recipe of life. Law is earth as earth is ice, “constantly moving, indeed through endless displacement of tectonic plates – like the cut ups and re-configurations of montage – the earth is ever ‘striving to achieve equilibrium.’ The earth is animated and animates.”¹¹⁶

Inspired by the magnificent scale of ice’s presence throughout Anna Kavan’s novella, *Ice*, it remained a quiet omnipotence within the writing – I could hear no footsteps as the cold glass walls ensued. At times Kavan refers to the frozen environment’s character as an observer¹¹⁷ – and directly as the witness of ice.¹¹⁸ There was a participatory listening. This capacity for the non-human world to remember and narrate, is at once forensic and aesthetic takes us back to the storytelling at the beginning: “The evidential role of matter as registering external events as well as exposing the practices and procedures that enable such matter to bear witness.”¹¹⁹ Ice itself can become a siren of events, and the gathering of information, through motions of freezing and melting, whereby “nonscientific materials such as artworks, literature, and oral traditions too might enact their relevance to events by furnishing alternate forms of information – proxy data.”¹²⁰ This preponderance for materiality to hold within itself, these histories of transformation, as a “mode of processing existence.”¹²¹ Coming back to Schuppli, this agential role of entropy and change as both artistic practice and juridical registering within the materiality of ice, and the surrounding environment in general, indeed renders the materiality of as legal evidence – of law.

So there we stood, hand in allegorical hand – I touched a heart and we both fell away. There



Fig. 9. Lucy Finchett-Maddock, *Up Close on Perito Moreno Glacier (& Law)* (watercolour).

was the edge of solidity and I morphed in and out of the frozen hubris of the glacial form. I heard the crunch and crackle of the layers of snow beneath me, trying not to slip on its lucid surface. And finally landed with two feet, making strides from a live encounter with ice, into the sovereign unknown.

So we return to the very moonlike landscape where we began, the frozen teacher of Perito Moreno, the point at which this fascination for law, aesthetics and ice began. Perhaps to keep frozen in time the memory of the ice, the lesson it tells us of power and change, and the importance of its documentation through the art of practitioners such as Schuppli, for the telling of sovereign tales and the drawing of lines to come. Ice and law are still not settled, a frontier of law that reminds us of the unfixity and entropy of law, it being, as Leslie beautifully notes, “the subjective truth of the system.”¹²²



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notes

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I confirm that this work is all my own. Images are copyright of Dr Lucy Finchett-Maddock.

1 Deleuze and Guattari 451.

2 See Finchett-Maddock, *Protest, Property and the Commons*; “Speculative Entropy” 104–30.

3 See “Argentina’s Ice Giant Shows Signs of Setbacks.”

4 Cruikshank 3.

5 In March 2024, the Anthropocene Working Group's (AWG) proposal for a formal Anthropocene Series/Epoch of the Geologic Time Scale was formally rejected by the Subcommission on Quaternary Stratigraphy.

6 A rather brilliant body of research on this has been developed by critical legal thinker Alex Damianos, spending time with the AWG in which four years of empirical data are gathered, culminating in an argument that "the failed effort to formalise an Anthropocene unit is symptomatic of a structural coupling between science and law, wherein geo-scientists make normative assertions on the register of geo-scientific fact." See Damianos.

7 See Wall-Kimmerer.

8 See Haraway.

9 According to thinker Sally Engle-Merry, legal pluralism "is generally defined as a situation in which two or more legal systems coexist in the same social field" (870).

10 Black 13.

11 The development of cilia as the prototype for ears is discussed in Haskell 6–7.

12 Schmitt, *Land and Sea* 2.

13 Hugo Grotius in Schmitt, *Land and Sea* 2. Dutch jurist Hugo Grotius' 1609 tract *Mare Liberum*, "The *Mabo and Others v. Queensland* (No. 2) [1992] HCA 23. Free Sea," where he constructs the high seas' existence as a space beyond national and imperial claims to sovereignty for imperial ends (see Grotius).

14 This is very much the framework through which the sea has been understood through the *Mare Liberum*.

15 *Mabo and Others v. Queensland* (No. 2) [1992] HCA 23.

16 See "The History of a Lie: The Mabo Case After 30 Years."

17 Kavan 67.

18 *Oxford English Dictionary*, 2024.

19 Schmitt, *Land and Sea* 2.

20 Mawani, "Oceans as Method" excerpted from *Across Oceans of Law* 17–26.

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21 Gilroy qtd. in Mawani 17–26.

22 Schmitt, *Land and Sea* 2.

23 See Linebaugh and Rediker.

24 Cirkovic 147–67. Referring to the need for a new ontological understanding of the global politico-juridical space, emerging from "theories on posthuman legalities that argue for a move beyond the centrality, for law, of the human subject that acts upon the world, the cosmos, as its object."

25 See Braverman.

26 "No State may lawfully purport to subject any part of the high seas to its sovereignty" (UNCLOS 1982 Article 89).

27 Tsiouvalas 76–97.

28 "Area" means the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction (UNCLOS 1982 Article 1); "The Area and its resources are the common heritage of mankind" (UNCLOS 1982 Article 136).

29 Vervliet xi.

30 Thornton 106.

31 See Selden.

32 Cirkovic 147–67.

33 "Agreement under the United Nations Convention on the Law of the Sea"; "Development of an International Legally Binding Instrument under UNCLOS."

34 The International Seabed Authority (ISA) has jurisdiction over the ABNJ – "Status of the Draft Regulations on Exploitation of Mineral Resources."

35 See Schmitt, *Nomos of the Earth*; "Concept of Piracy (1937)" 27–29.

36 De Lucia 261.

37 Ibid. 261.

38 Beddard 829–30.

39 Leslie, "Volatile, Liquid, Crystal" 137.

40 Nielsen et al. 443–64.

41 A hidden barracks has emerged frozen in time until the 1990s from the "White War" of the First World War, fought mainly in the Alps of the Lombardy region of Italy and the Dolomites in

Trentino Alto-Adige, when global warming began its task of revealing an archaeological array of “perfectly preserved relics – weapons, sledges, letters, diaries and, as the retreat of glaciers hastened, the bodies of soldiers.” See “Melting Ice Reveals First World War Relics in Italian Alps.”

42 See Dussault and Erasmus.

43 The Intergovernmental Panel on Climate Change (IPCC) series of reports, and its most recent “Climate Change 2023: Synthesis Report” issued by the IPCC on March 2023 lays clear the impact of the melting of Thwaites Glacier in the Antarctic, referred to as the “Doomsday Glacier” for its probable increase of sea levels by ten metres. See “AR6 Climate Change Synthesis Report March 2023.”

44 See “The Science of Sea Ice, National Snow and Ice Data Centre.”

45 See *ibid.*

46 Steinberg et al. 165–83.

47 See *ICE Law Project*.

48 See Steinberg and Williams-Reed; Shake et al. 239–53, amongst others.

49 Relating to the UN Declaration on the Compatibility of Rights of Indigenous Peoples (UNDRIP) 2007 and UNCLOS 1982. See Chircop et al.

50 Steinberg et al. 165–83.

51 The right to sail ships flying its flag on the high seas is under article 90 UNCLOS, yet even on the high seas the right to navigation is balanced with rights of overflight, laying submarine cables, constructing artificial islands, fishing and conducting scientific research (Article 87 UNCLOS).

52 Steinberg et al. 166.

53 *Ibid.* 167.

54 See Chircop 275–90.

55 UNCLOS 1982 Article 3.

56 UNCLOS 1982 Article 76.

57 See Todorov.

58 Filippi and Deiró de Mello Neto 161–78.

59 Countries along and within the regions of the Arctic are limited by the ten-year claim to an

extended continental shelf under UNCLOS Annex 2, Article 4, alongside the Arctic Treaty of 1959 protecting the region from any further exploitation and claims to ownership until 2048 after historical attempts by the United States after the Second World War. See Bunik 114–26.

60 See Steinberg and Williams-Reed 110–16.

61 Machowski 149–75.

62 *Ibid.*

63 *Ibid.*

64 Marx and Engels, “Review: May–October 1850” qtd. in Mawani.

65 Following Serres.

66 “We note that sea ice, as a material form to be structurally preserved, remains beyond the scope of legal regulation. We therefore suggest that the fundamental obstacle to the implementation of effective sea ice protection is ontological” (Steinberg et al. 172).

67 De Lucia 277.

68 Warwick 199–208.

69 Simondon 15.

70 *Ibid.*

71 Steinberg et al. 174.

72 Leslie, *Liquid Crystals* 75.

73 Leslie, “Volatile, Liquid, Crystal.”

74 Barad, “What is the Measure of Nothingness?”

75 There are variant understandings of entropy, the most recent variants quite possibly altering the canon of thermodynamics entirely through a consideration of quantum theory that suggest there being alternatives to the arrow of time that entropy supports, ultimately as a motor of change and alteration within the world.

76 Didi-Huberman 208–11.

77 Leslie, *Liquid Crystals* 26.

78 Barad, *What is the Measure of Nothingness?*

79 See Grosz 116 in Povinelli.

80 See Blomley; Delaney; Philippopoulos-Mihalopoulos; Keenan; Finchett-Maddock, *Protest, Property and the Commons*.

81 See Massey; Soja, *Third Space*; *Seeking Spatial Justice*.

82 See Davies.

83 Ibid. 3.

84 Pottage 153–75.

85 Inuit Circumpolar Council qtd. in Beddard 829–30.

86 Section 205(1)(ix) Law of Property Act 1925.

87 Under section 9 Coal Industry Act 1994; section 2 Petroleum Act 1998. Unmined gold or silver the same *Case of Mines* 1568 1 Plowden 310 75 E.R. 472; *Attorney General v. Morgan* 132 N.H. 406 (1989).

88 *Holland v. Hodgson* (1872) LR 7 CP 328.

89 This does not mean a right to water which percolates through the soil, but an allowance for access (easement) may exist in a defined channel, for example, a stream or piping. See *Race v. Ward* (1855) 4 El & Bl 702 and *Dickinson v. Grand Junction Canal Co. Ltd* (1852) 7 Exch 282 at p. 301.

90 Sections 24 and 27 Water Resources Act 1991, ss. 24 and 27.

91 Section 132(1) of the Land Registration Act 2002 confirms that “[‘land’ includes [...] (b) land covered with water”]; section 62(1) Law of Property Act 1925.

92 *Baxendale v. Instow Parish Council* [1982] Ch. 14; *Southern Centre of Theosophy Inc. v. State of South Australia* [1982] A.C. 706.

93 Thessalonians 2.6–7 in Schmitt, *Land and Sea* 10.

94 *R. (on the application of Newhaven Port and Properties Ltd) v. East Sussex CC* [2012] EWHC 647 (Admin); [2012] 3 W.L.R. 709.

95 *R. (on the application of Newhaven Port and Properties Ltd) v. Secretary of State for the Environment, Food and Rural Affairs* [2015] A.C. 1547.

96 *Blundell v. Catterall* 1821 106 E.R. 1190.

97 Bayley J. para. 313–14 *Blundell v. Catterall* 1821 106 E.R. 1190.

98 *Alfred F Beckett Ltd v. Lyons* [1967] Ch. 449, the Court of Appeal. Held, that this fell short of establishing the fiction of a lost modern grant to the

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inhabitants of the county, and (for the reasons given above) there was no customary profit à prendre or general public right. This was altered to Scots Law case *Officers of State v. Smith* (1846) 8 D 711 and any Roman Law understanding of the beach as “commons.” State law developments in New Jersey and Oregon as extending the customary right to and use of the beach (*State ex rel Thornton v. Hay* 89 Ore 887 (1969)).

99 See Groys.

100 Elden 199–224.

101 A collaboration between composers and thinkers myself, Anders Hultkvist and Dann Hignell-Tully, “Laws of Ice,” proposes an exploratory journey in law through artistic research, examining the laws governing moments of transformation, referring to the laws of thermodynamics in contrast to the legality of the state, travelling deep to sites of glacial movement to learn what ice can tell us about legal change. It explores the role processes of entropy within sound and translation, and how they play within the creation of laws, entropy denoting change, decay and what we have come to understand as the “arrow of time” within the creation and organisation of the world around us. Using legal doctrinal analysis, discourse analysis, translation studies, combined with practice-based research using sculpture, sound, video and vibration, the project *Storytelling as Disorder* will explore the role processes of entropy play within the creation of laws and the dynamics of community, language and the natural environment, through material formation and cultural engagement. The role of sound and vibration will be explored within oral histories and their social, linguistic entanglements with the non-human world, and the extent to which decay and disorder can be harnessed as a revolutionary process within these phenomena, and law in general. The material forms of ice, slate, natural resources that are integral to the surroundings of native Sámi and Welsh cultures in turn, based in, on and around, the Norwegian Arctic Circle and Welsh Snowdonia, will be investigated as to how these minerals, processes and formations create materio-linguistic cultures of law. See *Instrumenting(s)*.

102 See *Forensic Architecture*.

103 See *Learning from Ice*.

104 See *HEAR*.

- 105 Rose 24–46.
- 106 Finchett-Maddock, “Forming the Legal Avant-Garde” 320–51.
- 107 See *Cold Rights*.
- 108 See Inuit Circumpolar Council.
- 109 See Smithson.
- 110 Arnheim 10.
- 111 Kelly 9.
- 112 See “What does the Sixth Assessment Report Say about Cryosphere Change in the HKU.”
- 113 Fuller and Weizman 4.
- 114 Leslie, “Snowglobalism and Terror Kitsch.”
- 115 Ibid.
- 116 Ibid.
- 117 Ibid.
- 118 Ibid.
- 119 Schuppli 3.
- 120 Ibid. 9.
- 121 Leslie, “Volatile, Liquid, Crystal” 64.
- 122 Leslie, *Liquid Crystals* 36.

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