



ECO CENE

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## 2. Volumes, Part I

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### Worlds

Political arrangements always rely on an implicit notion of space that gives them power and justifies its deployment. This is because politics works on underlying assumptions about what the world is, and these assumptions give it a horizon of possibility. What we think the world is made up of has everything to do with the actions that we find politically palatable. If we are interested in describing a political stance appropriate for the possibilities that the Ecocene opens up, we must therefore start by attending to the notion of space, and what it does.

The wide and increasingly expanding field of post-humanities<sup>1</sup> has been very good at dealing with beings and their relations, but less good at dealing with the notion of space itself. This is odd, as a rejuvenated concept of world seems to have been almost entirely constructed out of beings. Even if we accept the argument that the world is alive (Abram 2012, Kohn 2013), or rather that it is inseparable from the beings that make it up, the question of whether the notion of space plays a role in our theorizing and practices still remains. In particular, the question of how beings relate to environments cannot be fully explored by attending to the multiplicity of beings themselves; attention needs to be paid to the multiplicity of environments as well. This is not because environments, or spaces, are in fact separate from beings, or in some sense more important. Rather, it is because the challenge of the Ecocene is to think complexly as such, that is to say to think about beings and environments *together*, without either sacrificing their difference or reifying their particularities. Unless we do this, we risk retaining

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1 For an excellent introduction to the field, see Braidotti (2019). For the related field of environmental humanities, see Emmett and Nye (2017).

conceptions of space that already foreclose the possibility of political thinking for the Ecocene, and by extension the possibility of mutualism.

I want to connect several different ideas that, when taken together, draw the contours of an ecological concept of space that can carry the ethical burden of an Ecocene politics. The specific ethical commitments of a mutualist politics will be outlined later, but their ontological basis needs to be developed first. I will therefore sketch the concept of volumetric space as one that can ground political thought within a world that is already teeming with easily unobserved relations and possibilities. As argued in the Introduction, ideas are themselves of the world, and the idea of space is both supposed to describe that which ostensibly exists, and elicit possibilities that may, under different descriptions, lay dormant.

One of the most durable modern assumptions about space is that it is purely exterior to the perceiving body. For moderns, this seems too obvious to point out: of course, space is that which is *outside* any body; bodies are *in* space but are not really considered to be of space. They are not really fundamental to thinking about the category of space because they appear to apprehend it from a distance. As we will see, this assumption owes as much to the dominance of visual experience in thinking about space, as it does to our effacement of the complex authorship of ideas, and therefore making them seem as if they can stand separately. It is as if they are independent of the actual bipedal mammal that thinks them, or its particular situation.

On the other hand, insisting on a connection between bodies and abstract notions may seem banal: bodies are needed to talk and write. Thinking this way already betrays a notion of space that I will thoroughly oppose: an empty receptacle that can be described in ways that are independent of the experience of living bodies. Even the most seemingly ethereal ideas of space—like that of an empty grid on which objects are projected—must have some relationship to the living body and the experiences that connect it to the world. This can be shown through a kind of intellectual biography that is at the same time a genealogy of ideas. This seems like a good place to start.

It is impossible to deal with the notion of space without thinking about Cartesian space, a notion that has become extremely influential in the modern world. One of the main reasons for this tremendous influence is its association with science, or rather the early reliance of scientific practice on this particular idea. Isabelle Stengers (in particular in *The Invention of Modern Science*, 1993) and Didier Debaise (see *Nature as Event*, 2017 and *Speculative Empiricism*, 2017), drawing on the philosophy of Alfred North Whitehead, have identified the operation through which Cartesian space infects, or perhaps even generates, a concept of nature that becomes instrumental to modern science. It is through this particular linking, space—nature—science, that spatialization in a particular form becomes inseparable from modernity and a particular kind of modern (experimental) science.

We cannot be clear about what modernity signifies without unpacking modern space. The first crucial point is found on the very first page of Debaise's book *Nature as Event*: "the modern conception of nature does not express any genuine ontological position [...] but is essentially operative" (2017, 2, emphasis in original). This is to say that the typically modern idea of nature does not describe something fundamental about the world, but rather makes possible a series of actions. This is one sense in which it is operative. The other is that it itself relies, for any force or efficacy, on a previous operation which Debaise, following Whitehead, calls the *bifurcation of nature*.

This fundamental operation by which space and nature become identified and operationalized consists in the deceptively simple (but entirely abstract) separation of 'primary' and 'secondary' qualities. As Locke explained them, primary qualities are those dealing with "solidity, extension, figure, motion or rest, and number" while the secondary ones with "colors, sounds, tastes" and so on (in Debaise 2017, 8). The key point to understand is that "the distinction between primary and secondary qualities starts from an empirical base [...] in order to then differentiate between nonperceptual qualities and those subjective qualities which are supposedly derived from the former" (12). The operation of bifurcation separates supposed realms of qualities based on a fundamental distrust of the only possible kind of experience, i.e. perceptual direct experience. Bifurcation manages to subtract embodied experience from the world and postulates the result of this subtraction as more real than its own basis.

As Stengers comments in respect to the experimental method inaugurated by Galileo, the operation of bifurcation conceals the author of the experiment that generates it, precisely because embodied experience (relegated entirely to secondary qualities) is abstracted out of the world, as if it were a mere hindrance. It is also in this sense that there is nothing ontological about modern space, as there is nothing left to *being* after all of its qualities have been abstracted away. However, the primary qualities are presented as the true ontological foundation of reality, albeit a foundation that can only be revealed through the subtraction of authorship from the action of knowing. It is in this sense that truth claims based on the operation of bifurcation acquire a formidable, double strength.

On the one hand, they are capable of allowing experientially hidden facets of reality to testify for themselves. As Stengers shows with reference to Galileo, in the experiment of the inclined planes it is motion itself that speaks, albeit in the way formulated by the experiment. This is an extraordinary feat, precisely because it manages to coax new meanings and figures that are only visible through the adoption of an experimental stance. But the experimental conditions and the strong authorship of Galileo disappear from view in light of the operation of bifurcation, and motion remains alone. The magic, of authorship, vanishes. It is through this operative power that supposedly descriptive statements based on modern nature are prescriptive in very specific ways.

The mix of description/prescription inherent in the operation of modern nature conspires in actually simplifying the natural world. Abstractly speaking, the operation of bifurcation is a radical impoverishment of the multiplicity of forms that populate the world, as well as the processes through which they appear. But this impoverishment is not merely conceptual, it has a direct and radical effect on the world. The abstractions generated through the bifurcation of nature are reified through the fallacy of misplaced concreteness: they are taken as more real, because they are ostensibly unauthored.

This is the key to the political power of abstract space and its association with modern nature and experimental science: describing the world as *actually* formed of secondary and primary qualities that need careful separation *requires* radical interventions in the physical milieu to rearrange it according to embedded assumptions. The

operation of bifurcation starts with a double concept of nature, elevating mathematical abstraction above embodiments, but ends up, over its long history, literally simplifying countless environments. The Ecocene itself can be seen as a logical outcome of bifurcation, a revolutionary upheaval of oppressed processes.

Cartesian space, arguably the foundation of modern conceptions, is in the mode of the abstract par excellence. Its very existence can be contemplated inasmuch as it is emptied out of any quality that may be directly perceived by a creature. It is defined by mathematical coordinates only, which exist in mathematical space, that is, in space devoid of particularities of place. The substitution of actual spaces for mathematical space has two profound implications. As we have seen, descriptions of the world are also—this might be their primary function—prescriptions of how to go about fulfilling them. In this sense, the flat space of mathematics has increasingly flattened actual worlds. Second, the existence of mathematical space and its dominance over so many practices suggests that possible relations between thought and embodiment are at best overstated. What, after all, could be the material, bodily underpinnings of Cartesian space?

Clemens Driessen (2020) provides one possible and fascinating answer. With an intuition of a close relation between the world and ideas, he set out to find just what the circumstances of the real Descartes, the person, were when he first published his ideas about space. Where, in what body nestled in what places and which conversations, did Cartesian space ferment? There is something strange, even uncanny, about the very idea of a physical origin of Cartesian space, a feeling that attests to the power of the abstraction that Descartes inaugurated. As Driessen writes, “because the resulting grid essentially erased the very idea of an origin, it is hard to think of Cartesian space somehow bearing traces of the places where it was first imagined, from which mathematic space was then rolled out over the globe” (275).

Driessen ties the project of revealing the emplacement of Cartesian space to the ambition of “provincializing modernity”.<sup>2</sup> Similarly,

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2 This resembles Chakrabarty’s provincialization of Europe, and Kohn’s similar gesture towards language. In *The Crises of Civilization* (2018) and *Provincializing Europe* (2009), Chakrabarty tries to unseat the idea of modernity from its supposed center, and instead reveals it as a process that involves many more, and far more

rethinking space provincializes the idea of modernity by showing how its constitutive concepts have always been rooted in particular places. This is especially striking as modernity defines itself according to rootlessness and universality, logically following from its foundational gesture of bifurcation. The provincialization of modernity that occurs through a rethinking of space is also what is urgently needed for political thought as it tries to break free of modernist constraints.

Besides the notion of space as an empty grid amenable to algebraic calculations, Descartes is also famous for inaugurating a view of non-human life as essentially mechanical. The figure of the automaton played an important role in his theorization of living beings, and has arguably dominated several centuries of scientific research on animals and, by extension, on the natural world. Driessen begins by showing that the figure of the automaton was an actual physical presence in Descartes' world: "in the geometrical gardens of St-Germain, [...] René Descartes experienced a garden automaton, proving to him that our senses can easily deceive us, and that the organic is actually mechanical" (279). These kinds of contraptions were popular during that time as garden ornaments. They were supposed to resemble natural scenes by translating the movement of animals and the elements into mechanical form. Being on occasion almost fooled by these contraptions, Descartes came to see them as revealing something deeper about the nature of the world itself.<sup>3</sup>

While Descartes was developing his ideas of the fundamentally mechanical workings of the world, the Netherlands was undergoing a radical transformation. For the first time land reclamation, through the construction of polders, became tied with capital investment and speculation on the value of the reclaimed land. "Reclamation, together with the Dutch circle, facilitated a land-based private investment vehicle that produced a perfect grid landscape just as Descartes arrived in the

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surprising, actors. Eduardo Kohn, in *How Forests Think* (2013), attempts a similar de-centering of language, which in Western philosophy has always enjoyed a preferential reverence.

3 I do not mean to suggest that Descartes was wrong in thinking that automatons reveal something about the world; everything hangs on the meaning of revelation. Automatons reveal something about the world inasmuch as they make possible a series of questions put to the world that would not have existed outside the revelation. This can be said of analogies in general: their aptness is in great part a function of the possibilities they create.



Netherlands” (282). This is to say that Descartes’ lifetime coincided with several developments in land management and profit generation that were already starting to treat the Dutch landscape as placeless and amenable to parceling out in a way that had been heretofore impossible. In this sense, the idea of space is also intertwined with technological and economic developments and, in a very real sense, concomitant with these, as opposed to preceding them. Space is not thought up by the mind, but rather through the deployment of complex infrastructures, both material and ideatic. Wittgenstein’s aphorism about writing being thought through the hand holds here too: space is thought through spatialization.

For example, the invention of the corporation based on shares is the kind of invention that makes possible a whole series of interactions with the world that radically transform it (Mitchell 2020). But it is not enough to think up the share, it must be hitched to other inventions that together become the infrastructural apparatus that thinks of spaces. Transcontinental railways are made possible by the twin inventions of steel (a highly durable material) and the share, which can sell future revenue based in part on the confidence one has in the workings of steel. Similarly, reclaiming land works together with selling its future use in the present, and therefore generating profits that accelerate the rate of reclamation and legitimize a way of thinking that continuously captures, in Mitchell’s term, future revenues. The idea that space is an empty grid that can be appropriated and made profitable cannot be neatly separated either from the mechanisms of profit, nor the materials that made and continue to make such mechanisms work, nor from the body through which these changes pass and are codified in ways that propel them further.

Another way of expressing this idea is that the notion of space thrives through particular configurations of power. The modern project of flattening space has always been linked with the quest for profit, or rather with the idea that power, by means of profit, can be obtained through such flattening. This has been shown in many cases around the world, but they all repeat the same fundamental characteristics<sup>4</sup>

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4 In the case of the Danube Delta for example, Ștefan Constantinescu and I have shown how the state, from the mid-nineteenth century until today, has repeatedly intervened to impose a logic of flatness and to simplify a natural labyrinth in order to pursue resource exploitation. Also see Scott’s *Seeing Like a State* (1998).

that originate in the seventeenth century in the Netherlands, during the same era as the real, embodied Descartes.

In the case of the Netherlands, the early gridification of land was achieved not only in relation to the sale of land itself, but also to the manipulation and extraction of resources, in particular food and flowers. The operation of simplifying places to better resemble Cartesian space is still the norm in land-based cultures today, dominated as they are by industrialized agricultural production. We will see this very spatial operation at work in the practices of olive cultivation in Southern Italy, as well as amidst rewilding and restoration efforts. Through these experiments, we will also see other ways of living and conceiving that, despite the steamroller of modern spatial thinking, continue to endure and haunt the hegemony of modernity.

Driessen shows in detail how Descartes' friendship with key figures in the gridification of the Netherlands contributed both to his ideas on space, and to the actual publication of his books.<sup>5</sup> As he explains, "'Cartesian' space emerged in a particular time and place: not just a universal/timeless idea projected onto the world by a sole genius, but emerging from a culture and topography [the flatness of the Netherlands itself] that were being ordered to reflect a certain mechanical mode of knowing and governing space, plants, and people" (286).

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The example of Descartes clarifies one sense in which ideas of space are always connected to power and to the pursuit of political and economic goals. Another way to see this is by thinking about maps.

Cartography itself is only possible because of a series of conventions that legitimize the projection of complex and messy territories on to a

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5 Nobody is exempt from the fact that thinking always happens within wider networks of relations. As a case in point, I came to know of Driessen's treatment of Descartes via a fortuitous meeting with Driessen in New York that tied a project of his (participating in the Guggenheim show *Countryside, the Future*) to the work I was at the time doing for this book. This kind of chance meeting is often the norm, tying people together in a mutual intellectual genealogy that exceeds any participant. As Stengers expresses this idea (2015, 131): "[...] not 'I think' but 'something makes me think'". This is the form under which thinking (or rather intelligence) is equally distributed in the world, as a property of networks. Any subjective embodiment can do no better than pay attention and become attuned; it is not about the possession of individual capacities.

neat, two-dimensional grid.<sup>6</sup> It is no coincidence that modern voyages of exploration and colonization, whether internal or external, have always involved the mapping of the desired territories. The operation of translating unknown lands (that is, lands that are known to others, but not to the colonizer) into cartographic projections is what allows for the subsequent deployment of military power to annex the newly plotted lands. Cartography is a co-conspirator of colonization in two ways. It represents territories without taking the experience and knowledge of local inhabitants into account, and in so doing legitimizes the self-serving view that 'discovered' lands are not under the authority of their respective inhabitants.

Maps as such have not been invented by modern notions of space; they precede them by centuries. But mathematical projections transformed cartography from an endeavor connected with a largely religious geography into one hitched to military and economic power. These interests extended their reach through new mapping techniques that sought to mirror the territory exactly, by fixing points that could be used for navigation and the control of annexed territories. Land surveys through the method of triangulation<sup>7</sup> were carried out throughout the colonized world to better fix people within a space, an operation without which taxation, or conscription, or the theft of labor would have been infinitely harder. In this sense, the map is for early modern power accumulation what steel was to the corporate share: an artifact whose properties radically modify the literal and political landscape.

There are many examples to show this, but I will settle on one I know well. With Ștefan Constantinescu, himself a cartographer, we studied the history of maps and their effects in the Danube Delta. The Danube River is and has been important for as long as Europe has been settled. Relatively recently, geomorphologically speaking, it started forming a delta where it arrives at its destination, the Black Sea. The Danube Delta has, in this time, become a shifting labyrinth of channels, floating

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6 There are many different kinds of cartographic projections (the name already betrays the fundamental operations at work), but at this level of analysis they all do the same thing.

7 This is the practice of plotting land by measuring it in adjacent triangles. Through this method one only needs to know the first two distances defining two sides of the triangle in order to deduce all other distances. For this entire section I am deeply indebted to Ștefan Constantinescu, who taught me much about the working of maps.

reed beds, marshes, islands, lakes, all in constant movement. It also finds itself in a region of Europe that has been contested by empires because it was marginal to all of them. It therefore became an important area where borders, and therefore the extent of an empire, could be drawn. The delta's marginality has also been a feature of the difficulty of knowing it from the outside in a definitive, mirror-of-the-territory kind of way. Its very geomorphology resisted the fixing operation of the map. It therefore became a refuge for bandits, a dangerous place of lawlessness—of course, from the point of view of the state.

Today, the delta is mostly in Romania, but its northern section incorporates the border with Ukraine. Throughout the eighteenth, nineteenth, and twentieth centuries it changed hands several times, from Ottoman to Russian, to Austro-Hungarian, and eventually to the nation-building of the post-WWI era. This geopolitical history of the area is important, but the point I want to make is that it would have been impossible without mathematical cartography. This is because the delta is not a territory that can be easily approached. It frustrated notions of what is liquid and what is solid, what is land and what is water; it shifts continuously. Its moving patterns are not just horizontally arranged, but vertically as well, as water depths vary and never settle for long. Lakes that are accessible one day may be closed the next, and unless one has a deep *experience* of the place, it cannot be easily navigated.

The early (eighteenth-century) maps of the delta were interested in finding the main branches that the river formed, like arteries crossing a vast organ. These could be used to access the interior, at first to set up military outposts and claim the border, and later to exploit fishing and reed stocks. We have detailed this history elsewhere (Constantinescu and Tănăsescu 2018) and there is no need to recount it all. The point here is that the first stage of colonization of the delta coincides with the early deployment of cartographic projections that make military expeditions possible. These are relegated to the main branches only because the interior remained impenetrable, as it could not yet be known cartographically.

The second stage is purely mathematical and follows the military one that had already started to modify, and simplify, the territory by dredging main channels to stabilize their depth. Perhaps it is easiest to see the imbrication of mathematical space and political power in the

delta because it is an obviously volumetric territory that resists corraling into a certain shape. And yet, mathematical cartography expanded the knowledge of channels and lakes, eventually covering the whole delta and opening the door for large-scale resource exploitation. Cartography has not in fact managed to produce a faithful map of what is a constantly changing territory, but rather approximations that are 'good enough' for what they are supposed to achieve. So even though the exact location of a lake, or its depth, may be impossible to definitively fix, cartography managed to approximate these details adequately enough to transform the spaces into more law-abiding places.

Under the totalitarian regime that lasted from 1945 until 1989, the delta was radically transformed through dikes, dredging, narrowing or widening of channels, stabilizing of banks, and creation of new and straighter routes. These interventions made exploitation possible but have also cemented the dynamism of the territory, which keeps changing and requires constant intervention to maintain it in the desired shape. The maintenance of the delta is nothing else but a perpetual fight to force its space within a form that enables exploitation and control. But a volumetric delta requires constant mapping, despite the considerable work that goes into keeping it still.

The cartographical history I have briefly described has, in the post-1989 era, morphed into nature conservation policies that aim to preserve aspects of the delta deemed ecologically important. In the early 1990s the territory became a Biosphere Reserve, which limits (in theory, see Prelz Oltramonti and Tănăsescu 2019) what can be done, and where, within the reserve. Conservation maps now play the role that military ones played a century before. Counting species, deciding on what aspects of the delta are crucial for them, intervening through engineering works in order to preserve certain conditions that are deemed important, are all intended to enable the fencing off of the space as dictated by conservation interests.

Throughout all of this history, the local experience and situated knowledge of the delta has *never* figured as a cartographical, or political, consideration. This is because it resists the flattening of space that is the fundamental premise of navigational maps. Today, old fishermen still do not navigate using maps, and have a hard time reading them. Instead, they use intergenerational memory, shifting landmarks, toponyms, animal sounds, winds, currents, and so on to find their way about.

The younger generations seem to have finally been introduced to cartographical thinking by Google Maps. The heirloom knowledge of the territory may soon be relegated to the “cemetery of practices” (2015, 98) that Stengers has identified, which maintains the living spirits of ideas and ways of being that modernity, despite its best efforts, cannot completely extinguish. But satellite mapping is itself only as good as the territory allows, and under particularly difficult weather conditions it becomes useless. Its precision, at the actual level of the boat where it matters most, cannot avoid a certain threshold of error. This means that in situations of dense fog, for example, one cannot simply follow the dot or read their spatial orientation. In such situations, an inherited knowledge of the territory is what must intervene.

The possibility of navigating a delta according to its physical qualities, and a particular mode of paying attention to these, suggest a conception of space that can return to living territories some of the richness, both human and non-human, that has been slowly bled out of them. It is the senses, in other words (as well as the multiplying apparatuses that we use to create new kinds of sensing, so not excluding satellite mapping as such), that are always crucially involved in the thinking of space. Descartes’ radical move was to involve the power of the senses *entirely* negatively, therefore constructing a notion of space as capable of existing without any sense. As Debaise points out, the reification of ‘primary qualities’ “into a more general ontological form can be achieved only at the expense of fundamental aspects of the plurality of forms of existence in nature” (2017, 15), indeed at the expense of different ways of thinking about and living in spaces. But the leveling of multiplicity and plurality is not just a conceptual operation: it has very real effects by increasingly fashioning the empirical world to more closely resemble the ideatic one. The accelerating simplification of our world, in terms of land use, transportation, agriculture, biodiversity, and so on, is a direct result of our thinking.

A reconsidered notion of space therefore must pay attention to the importance of the senses in both living and thinking. Considering actual territories in which to ground our thinking—like the Danube Delta—suggests space as a volume, and therefore allows us to incorporate creaturely and sedimentary movements in all directions, as well as the multiplicity of senses that together craft the textures of places. These

senses are not only those of the human body, but also of animals, who have long been used by people to intuit spatial features to which they are otherwise blind. The flight of animals before an earthquake, or the ability of water birds to detect fish, have routinely been highlighted as important examples of feeling space. Sense is not even limited to bodies, but goes beyond them through a vast apparatus that reconstructs the deep past and the movements below the surface to which most creatures are relegated.

Geological history, for example, extends the volume of space all the way down to the center of the earth. People have used their imaginary senses to reach these hidden places for centuries, but only recently have we started to piece together a picture of geology that shows the deep ground beneath our feet to be as dynamic as everything else, and inextricably connected to the space of living things. We have effectively developed a vibrating sense, made up of and deployed through devices that measure seismic waves, both spontaneous and created (through detonations).

Deltas, to run with the example, are entirely determined by the tectonic movements that slope the ground in ways beneficial to their formation. The western coast of South America, for example, thanks to tectonic plates, has grown the Andes close to the shore, which makes deltas impossible. Rivers are too fast, and the ocean too deep, to allow for sediments to accumulate close to the coast. On the other side of the mountains, eastwards, tectonic movements have created a gentle slope, on land as well as on the ocean floor, which has facilitated the deposit of sediments and the creation of deltas. Creatures living in the Andes and on both sides of it are directly connected to movements hundreds, even thousands, of kilometers down.

Tectonic movements and volcanic eruptions indicate a moving, abiotic space that interacts with the living but is also independent; it precedes the living, though it makes their existence possible. The formation of the planet is still present under our feet, a history four and a half billion years old that is ongoing. The living have always created parts of the conditions of their own lives, but this process is blind: the conditions created need not be friendly, or even optimal. They are always provisional, often interrupted by a brute force that has the upper hand, an irruption that seemingly comes from nowhere.

Geology has a mind of its own. What it makes available, the very surface that is the skin of the earth, is an intricate co-creation that is always precarious. Probing beneath this skin in order to add an awesome history to the story of every place has also entailed human destruction of the object of study. For example, the same devices that have made seismology possible are used in the mining of coal, oil, and other minerals. These deposits of past lives, testimony to the inconceivable forces that have overcome them, go from being valued testimony of a whimsical past, to cheap commodities devoid of any historical meaning.<sup>8</sup>

Places that seem stuck in space, and that we try to fix as if location was their primary characteristic, are always on the move. Doreen Massey (2006) gives the example of features in the British Isles that are considered symbols of a durable nation, modeled on the strength of its landscape. Yet those features have moved around the world and will continue to do so. The timescale of this movement is of course completely different from the lifespan of even the longest-lived animals, but this does not make it irrelevant. It is through this patient passage of time that conditions of life are formed.

Massey (2005) also highlights another characteristic of a volumetric notion of space, calling it the “simultaneity of stories so far” (9). Adding the geological story to the stories of generations upon generations of places and creatures repositions space-as-volume within the realm of memory, itself an important means of sensing one’s way about the world. To be enplaced, to experience a dynamic fitting of the volumes of the world, comes with a whole series of pre-sanctioned gestures, inherited and created memories, many of which are of political importance. This exemplifies the phenomenon that Bruno Latour, commenting on Schmitt, develops when writing that “the *res extensa* is not a space *in which* politics is situated—the background of the map of every geopolitics—but, rather, something that is generated by political actions itself aided by its technological instrumentation. [...] space is the offspring of history” (2017, 231, emphasis in original).

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8 A similar process of knowledge through destruction is present in archaeology, which often works with mining operations, and prepares the ground for them. The annihilation of one storied layer is used for the discovery and ultimate annihilation of another, deeper one. The preservation of stories in archives excavates meaning from the ground.



Understanding space as essentially a grid on to which entities are projected restricts the possibilities of rethinking potential relations with the world. This, as argued above, is part of the point of flattening spaces into grids. Moderns have become used to regarding this kind of space as a factual reality, and any deviation from it as merely an abstraction. Instead, as Latour argues, space as a flat grid is a high-level abstraction, something that is never lived as such.<sup>9</sup> The space of the moderns first and foremost restricts the possibility of (politically relevant) new kinds of relations between often surprising entities. If, instead, we refuse the operation of bifurcation, of emptying out, we discover possibilities for space that are eminently pragmatic. Importantly, refusing the operation of bifurcation forces one towards the kinds of good abstractions of which Whitehead was so fond: ideas that strive to reflect the multiplicity of the world by not foreclosing most of its possibilities.

There is no reason to suppose that space is primarily a visual category.<sup>10</sup> Instead, a multi-sensory understanding of space seems appropriate in keeping ontological possibilities open.<sup>11</sup> In the *Phenomenology of Perception*, Merleau-Ponty argues that “we cannot dissociate being from orientated being” (2005, 295). This means that there is, in perception, no space as such, abstracted. As Merleau-Ponty argues, there is no horizon of the horizon, no ultimate level, and there is furthermore no need for it, because of the inherent orientation of being. Remaining stubbornly embodied is a clear refusal of modern thinking. But this embodiment need not be understood in visual terms. Life (which can be embodied in a dizzying array of forms) is orientated

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9 This is the sense of Latour’s (2007) diagnosis of the strange modern concoction of ‘idealist materialism’. For a philosophical foundation of the critique of localization as the primary quality of space, see Debaise (2017).

10 This has been widely assumed. Notable exceptions are the works of Gallagher (2015, 2016), Gallagher and Prior (2014), Gallagher, Kanngieser and Prior (2016), and Bates et. Al. (2019), focusing on the sonic dimensions of landscapes. Gallagher and Prior (2014) argue that “phonography is particularly useful for highlighting hidden or marginal aspects of places and their inhabitants” (p.268). In the case of the Danube Delta again, together with Constantinescu (2019) we took this idea further by showing how local inhabitants of a deltaic village (Sfântu Gheorghe) incorporate the sound of wildlife into the spatialization of their territory. Sound is an important and often overlooked dimension of space, and relations with non-human animals (that often develop phonically, but not exclusively) are also fundamental in fleshing out the texture of space.

11 Which means conceptualizing space through an indefinite number of creatures, not just human beings.

inasmuch as the volume of the subject exists within the volume of the world, and these volumes live through sound and touch as much as sight, as well as an immense variety of senses that human beings do not possess. This idea of orientation points towards an understanding of being as expressed within a dense network of spatio-temporal relations, whereby different kinds of living things encounter and navigate the world differently.

Space can be contemplated from the perspective of other beings, as Eduardo Viveiros de Castro shows that Amerindian philosophy does. The volume of the world is where life develops and unfolds, and humans are part of the worlds of other animals too and therefore part of *their* spatial understanding. Once grasped, this point seems obvious. When Eduardo Kohn writes that he was told to sleep in a hammock face up, so that jaguars may recognize him as a person and let him live, he is directly drawing on a volumetric, multisensorial, and multispecies concept of space. He is drawing on an *ontological* concept of space.

Building on Merleau-Ponty, space becomes the mode of being in the world, and not an inert background of primarily visual material.<sup>12</sup> Place is then the becoming subject of space, that is to say the coming into a mode of consciousness of what is always already a volume within other volumes (the dynamic assemblage). Just like humans, everything that lives can be in or out of place. Understanding the conditions for fulfilling emplacement is a necessary endeavor for ecological politics.

In grounding the political thesis of mutualism in volumetric space, I am primarily claiming that the issue is not just recreating the possibilities for new, different, and surprising assemblages to emerge.<sup>13</sup> The issue is being able to decide, as collectivities, between different kinds of assemblages. And more than mere assembling is required;<sup>14</sup> it

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12 For a thorough and very useful development of the concept of nature in Merleau-Ponty, see Ted Toadvine's (2009) *Merleau-Ponty's Philosophy of Nature*. One of the central tenets of that concept of nature is its duality as both intrinsically human (through human perception), *and* absolutely independent of humans.

13 This is where the works of Isabelle Stengers, Donna Haraway, Anna Tsing, and Bruno Latour take us, leaving us to find our own path.

14 Also because, as Rafi Youatt (2020) points out, there is a certain given-ness to assemblages; one is never free to choose the assemblages one is part of, but only somewhat free to modify certain aspects of them. As we find ourselves simultaneously inflated and deflated by the Anthropocene, this becomes a crucial insight.

is a matter of rebuilding genealogies of reciprocity, of resurrecting that cemetery of practices to which Stengers alludes,<sup>15</sup> in full consciousness of the fact that each genealogical link, each embodied practice, sanctions its own way of building communities.

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I want to go back to the idea of nature that I argued, through the work of Debaise, was fundamentally tied to the modern concept of space. This connection notwithstanding, it is also an abstraction that exists above and beyond its association with space. The idea of nature, perhaps even more so than that of space, today carries the project of modernity forward. Despite the ample critiques it has received, it continues to endure. I want to puzzle over how another concept of nature may be born out of the decomposition of the old. Most importantly, we have to understand how a radically multifaceted concept of nature weaves itself through new political arrangements, attempting to facilitate joyful existence in the Ecocene.

To be clear: the point of rethinking notions of space and nature is not to propose new unifying principles. The point is, precisely, to deny the importance of unification at all, and to try to live with uncertainty and multiplicity. The concept of nature, like that of space, has a fundamental role in unifying what are otherwise disparate practices and relegating them to ‘the natural realm’ such that they become undebatable. Modernity generates a concept of nature that is simultaneously spatialized (the radical outside of modern development, the dumb matter on which it operates) and internalized (as a moral principle equating the natural with the good).

It is important here to note the incoherence of a concept of nature that is simultaneously assimilated to flat space and to the good, and to search for alternatives that would complement volumetric space and structurally refuse to act as grand unifiers. The idea is not to find some sort of concept that can be ready to import into ‘our culture’, but rather to understand the political valence of concepts, and to look for ones—reinvent them, really—that are ready to be put to work in an

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15 Stengers (2015, 98): “Certainly we live in a veritable cemetery for destroyed practices and collective knowledges [...]”.

emancipatory politics of multiplicity. *That* is not to be found anywhere ready-made, and it is a project to be continuously pursued.

One very helpful place to look for conceptions of nature that are not based on the operation of bifurcation is critical anthropology. The concept of multinaturalism is an excellent start, as it opens up possibilities for conceiving of the natural in ways that are inherently human, and vice versa. But it would be a mistake to think that multinaturalism can just be plucked out of its particular genealogical milieu and put to work in undoing modernity. No, the idea is to look for clues that allow us to find practices and conceptions that have stubbornly remained everywhere, despite modern development. Multinaturalism then opens up possibilities of thinking that connect with ideatic ghosts elsewhere, weaving a new conceptual tapestry that cannot come under one name.

As Stengers argues, “the internal colonization of what we call modernity by modernity was never complete. [...] It is time to rearticulate and reassert those sensibilities [that endure] both ethnographically and politically. For other worlds exist, even within modernity” (2018, 158). This points towards the crucial role of an anthropology beyond the orientalist gaze that relegates pre-modernity to ‘the indigenous’. Nobody has ever been fully modern, precisely because the typically modern conceptions explored so far do not allow for an actual embodiment. They are resistant to being lived, and this is why modern development is a constant and violent process, as it needs to continuously stamp out what springs forth from the physicality and liveliness of the world. In this sense, it is fine to rearticulate and reassert spectral practices and conceptions, but we need to be careful not to imply that somehow those practices remain whole, not to smuggle in singularity as we critique it and seek multiplicity. It may therefore be better to think about renovating practices. Renovation is always working on an existing foundation, but one that is not fit for habitation unless intervened upon and modified for purpose. Multinaturalism is not a solid foundation, nor is the modern concept of nature; it is simply a direction for renovation, indicating ways in which common worlds can be continuously weaved, while remaining satisfied to never arrive at a final destination.

As Eduardo Viveiros de Castro (2015) presents it, multinaturalism is the idea that the world has no essence beyond the ways in which it appears to different kinds of beings. But the mode of appearance of

the world is structurally similar across embodiments, which leads the Amerindian philosophies that originated this notion to suppose that all beings are fundamentally human, and therefore fit within their world in ways similar to humans. Saying that all creatures are fundamentally human can be deceiving, because it makes it seem as if the human form is privileged over others. But that is not the case: it is not the human *form* that is similar, but rather the interiority of being as such. It may therefore be more accurate to say that all beings are persons to themselves and to each other because they share in the fundamental fabric of being alive (for more on this see Chapter 3).

This means that the philosophical conceptions De Castro describes consider the way the world is apprehended to be like human apprehension, even through different kinds of embodiment. As Descola explains it, the principle that defines nature is not matter, as in modernity, but rather the existence of a subjective position (what he calls interiority). Every living thing is positioned towards the world and towards other beings, in virtue of being alive and sensing its environment. This positioning, echoing Merleau-Ponty's "orientated being", cannot help but see creaturely life as organized in societies, with largely similar concerns, and populated by people looking different (having different bodies) but sharing in the genealogy of the living. Humans are human by virtue of their bodies, not by virtue of the exceptionalism of their own meaningful lives. A world full of people is therefore not a hierarchical world, but one of degrees of similarity organized more or less horizontally.

The relationships that creatures build with each other are like kin relationships, but not identical to them. The kind of body each creature has is not inconsequential: it mediates the potentialities of the world (of space, if you will) and is both an inter-specific bridge because of its interiority, and a point of irreducible separation. De la Cadena discusses the rapprochement between humans and other kinds of embodiments as conceiving beings as "humans, but not only". She stresses the ontological quality of this 'but not only', as that excess that a body gives to subjective experience, that irreducible difference that paradoxically pulls creatures together while also keeping them within separate domains.

There are several extremely interesting points here that complicate the idea of nature. First, under this reading the *natural world* is not first and

foremost nature, but first and foremost *world* (*experiential locality*). This is to say that what characterizes it are not material properties, but rather its ability to be an abode, its capacity of homeliness across a staggering variety of beings. This capacity can be rendered in the language of our previous discussion as the ability of different kinds of volumetric spaces to cohere, despite the fact of their multiplicity. As De Castro reminds us, what is blood to humans is manioc beer to jaguars. Many different kinds of beings have very similar concerns for maintaining friendships, avoiding trouble, feeling at home, and playing.<sup>16</sup> What modernity would characterize as a substance with particular physical properties—blood—is here rendered as an indeterminate potentiality that actualizes itself only by entering into specific kinds of relationships with specific kinds of beings. But what is beyond doubt is the fundamental similarity of the process of relation itself: just like manioc beer is an intoxicant for humans, so too is blood for jaguars.

Each kind of being has its own way of activating the potentialities of the world. This leads to the second important point, which is the idea that in this account of the world, borders and relations are more real than beings themselves, as it were. There is no such thing as blood *as such*, or rather, blood is not the primary mode of appearance of the substance that humans call by that name. Instead, there is nothing solid to the substance outside of how it is enlivened through relationships. On the side of the perceiving beings, De Castro gives the idea of multinaturalism the name of perspectivism, in an effort to convey the inherent changeability of points of view that itself structures the world.

Multinaturalism and its corollary, perspectivism, offer an account of the world that focuses much more on multiplicity and relations than on the permanence of physical properties. “What perspectivism affirms, when all is said and done, is not so much that animals are at bottom like humans but the idea that as humans, they are at bottom something else—they are, in the end, the ‘bottom’ itself of something, its other side; they are different from themselves” (2015, 69). Just as on the side of ‘nature’ there are no fixed substances, so too on the side of the experiencing subject there is no inherent subjectivity above and beyond the relationships through which it lives. Humans, in the final analysis,

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16 The idea of distributed intelligence throughout the natural world has become increasingly supported through ethology (the study of animal behavior) as well.

are not human by virtue of a human essence, but rather by virtue of the specific way in which they differ from themselves. This idea has radical affinities with Deleuze's concept of multiplicity, which is here revealed to be infinite, extending in all directions, making the distinction between things and beings a distinction of degree of intensity, and not one of kind (Deleuze and Guattari 1998).

In this account, self-difference, or infinite multiplicity, is a universal condition, not as an essence, but rather as an operative necessity. The world is a space of infinite virtualities, not all of which can ever be simultaneously actualized. There is, in fact, an infinite multiplicity of virtualities and an infinite possibility of actualization. "Perspectivism affirms an *intensive difference* that places human/nonhuman difference *within each existent*. Each being finds itself separated from itself" (2015, 69, first italics added, second in original). This original non-coincidence makes it impossible to think, ontologically, in non-relational terms. And, importantly, relations between radically multiple terms are themselves radically multiple, changing over time and varying in intensity. As Deleuze argued, "[...] there are no points of view *on* things—it is things and beings that are the points of view" (in de Castro 2015, 110).

The possibility of inter-species communication and understanding is given a new foundation in perspectivism. In principle, a human process of subjectification can enter into specific kinds of relationships with other, non-human processes. These can be evoked by a human subjectivity precisely because they share fundamental processes that are resistant to unification, similar precisely for their multiplicities. "What exists in multinature are not [...] self-identical entities differently perceived but immediately relational multiplicities of the type blood/beer. There exists, if you will, only the limit between blood and beer, the border by which these two 'affinal' substances communicate and diverge" (2015, 73). Borders, then, are fundamental to relational thinking, and qualify it in an important respect: points of separation are internal to being, and therefore to the manifestations of virtuality.

All of this points towards an apparent impossibility, namely that of knowing with any degree of certainty the make-up of the world, or the positionality of any particular being, including one's own. And this is precisely how the space of politics is rejuvenated by the ideas of multinaturalism and perspectivism: they point towards conceptual

possibilities that are anchored (though they need not be anchored in the same way) in infinite multiplicity and the structural necessity of ignorance. Acting in the world is always, on this account, a negotiation of uncertainty.<sup>17</sup> It is only from the point of view of a politics that dogmatically presupposes stable foundations that action through uncertainty becomes problematic. From the perspective developed here, structural ignorance and multiplicity are themselves conditions of possibility for meaningful action.

Ontologically, as De Castro himself argues, there can be no mutual relations across species, because of the instability of beings themselves. But politically, as far as humans are concerned (*all humans, so non-humans seen from their own point of view as well*), there *must* be mutualism because it is the only thing that keeps relations flowing such that the relative stability of beings remains relatively stable.<sup>18</sup> He suggests (70) that “man and wolf cannot be man (or wolf) simultaneously”. Ontologically, indeed. But politically, this is precisely the task. *Politics is the negotiation of this impossible simultaneity.*

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“Now the colonizers are as threatened as the world they displaced and destroyed when they took over what they called *terra nullius*” (De la Cadena and Blaser 2018, 3).

From a modern perspective, nature is disappearing before our very eyes. The flat spaces of modernity can no longer accommodate the dreams of progress and emancipation from brute natural forces. The intrusion of Gaia has permanently destabilized this kind of project of emancipation and, as a result, the modern world is decomposing. The process of decomposition will surely be long and studded with an increasing number of ‘crises’, moments that are read as potentially fatal and that must, under all circumstances, be overcome. But a profusion of crises is nothing other than the dissolution of a particular kind of world. It is the modern world, as it has come to dominate the globe, that is now dissolving.

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17 For a democratic and pragmatic treatment of the problem of uncertainty, see Callon, Lascoumes and Barthe (2011), *Acting in an Uncertain World*.

18 For an evolutionary argument for mutualism, compatible with this discussion, see the development of Kropotkin’s thought in Chapter 7.



In a strange temporal inversion, events of natural history are accelerated, while human history seems stuck in a mode of psychological acceleration and empirical inertia. In other words, the decomposition of modernity may be a longer process than the intrusion of Gaia would suggest. When the glaciers and ice sheets are all melted, we may as well still be fighting against the idea of development. Nietzsche recognized the death of God a century and a half ago, but we are still struggling with the consequences. Similarly, the death of modernity need not mean that it will no longer be felt.

The trouble with holding on to modernist concepts while living in and with the decomposition of modernity is that it leaves one unable to do much other than mourn the inevitable loss. To the already massive loss of alternative and non-human worlds that modernity has caused, is now added the loss of the modern world itself. This palpable sense of loss is increasingly felt in the old centers of the modern world, often refracted through issues and concerns that might at first seem removed from the disappearance of a surefooted rootedness in the modern project. The arrival of the Ecocene has provoked new kinds of reaction. One of the most significant so far has been a sort of denial (Malm 2018, Latour 2017, 2018), that is to say a stubborn continuation of practices and ways of thinking that are constitutive of the generalized ecological crisis. Denial expresses itself differently among different groups. Two of the most dominant forms have been either triumphalist idiocy (continue accelerating, nothing is wrong!), or ecomodernist delusion (acceleration will solve everything and finally set us free!).

The populist right has made it a badge of honor, as Latour has shown, to deny the reality of the intrusion of Gaia.<sup>19</sup> Their response to this intrusion is one of doubling back, partly because so few resources seem to be available for living differently and composing different worlds. The response to migration, for example, has to be understood as the response of someone that is no longer surefooted in his own home, someone that is displaced within his own place of origin, someone that shares in part the condition of displacement that sparks migration. The potential host of the migrant is himself radically destabilized. The resurgence of nativism at the dawn of the Ecocene indicates precisely

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19 Andreas Malm has become one of the starkest critics of Latour's work. However, despite their considerable differences, both of their analyses of climate change reach this same conclusion.

the untenability of nativism itself: there is no land to forever call one's own, and it is this uncomfortable fact that ignites a desperate search for versions of belonging.

The ways in which the Anthropocene has entered popular discourse does not help much. Borrowed unproblematically from geology, talk of the Anthropocene so often abstracts us from the lived reality of individual beings and instead professes techno-managerial solutions that treat everything instrumentally. For example, geo-engineering the climate to reflect more sunlight into space and therefore have a cooling effect, or technology that would suck CO<sub>2</sub> from the atmosphere and reverse global warming. Tellingly, these kinds of technological fixes are already part of climate negotiations, on the assumption that they will be deployed (for now, carbon capture more so than geo-engineering).

As any given experience of the world becomes subsumed under 'geological forces' and their attendant grand solutions, the generalized feeling of displacement advances. This adds to the feeling of loss a nostalgia for what, in truth, has never existed: a surefootedness that has always been mythologically constructed. The condition of displacement has to be thought as a passage from one manner of composition to another, and not as a nostalgic fold.

Together with rampant denialism, the ways in which the Anthropocene has so far been considered has also led to an ecomodernist insistence on the necessity to continue the project of modernity. The idea there—best exemplified by the work of the Breakthrough Institute—is that the Anthropocene is simply a problem of using the wrong kind of fuel, and generally the wrong kind of matter, for achieving what are otherwise legitimate goals of radically separating 'humans' from 'nature'. The way to achieve this ultimate goal (permanent bifurcation) is by 'decoupling' economic growth from material constraints. The idea of decoupling makes very clear what the ultimate goal of ecomodernism is: protecting the legitimacy of economic growth. To think that growth can be sustained indefinitely because it can be separated from matter seems entirely delusional, and it is in this sense that ecomodernism is just another form of denialism. Ecomodernists assume what they want to achieve, namely a complete separation of human societies from material arrangements. The circularity of the argument should be enough to discredit it, but

unfortunately it isn't, simply because ecomodernism is convenient for those that are invested in the continuation of the modernist status quo.

In order to take on the challenge of recomposing worlds in the wake of the great modern decomposition, increased attention has to be paid to the minor realities (Hage 2012) that have always coexisted with the major, hegemonic ones. These kinds of reality are easily overlooked, for two contrasting reasons. On the one hand, as Hage shows, they are often found in critical anthropological encounters with what appears to be radical difference that, nonetheless, manages to be thought and to destabilize thinking itself. On the other hand, minor realities are overlooked because of how familiar and obvious they are. This is the kind of blindness that familiarity breeds. Included in this category, for example, are practices of communication with plants and animals that have always suffused modern cultures, or practices that take our ancestors into account. It is in those cemeteries where ghosts live that we may find ways of thinking sideways and recomposing at livable scales.

Both of these difficulties must be turned into allies of recomposition. Both the radically different and the unimportant and routine can be conjoined in articulating new kinds of worlds. In fact, these two movements are more similar than they first appear. As Chapters 4 and 5 will show in much more detail, critical anthropology and the interstices of modernity itself often stumble upon very similar means of recomposition. In particular, we need minor realities that articulate an ethics through which we can build resilient infrastructures of reciprocity. These hold the promise of building new life alongside the tribulations to come.

