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Landscape, Time, and the Philosophy of Michel Serres*

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In an introductory essay to a book published to mark the fortieth anniversary of the Pyrenees National Park,[1] the French philosopher Michel Serres defines the concept of the national park by situating it as the last in a series of three domestications that have characterised our relationship to landscapes: the farm, the garden, and the national park. Emerging towards the end of the neolithic, the first of these domestications is defined by the rise of agriculture and the grouping of certain species around the buildings where the family—used by Serres in a broad, historic sense—lived. It was a space that encompassed the rich variety of early farming: "the sty for the sow and the pig, the barnyard for the cocks and the eggs, the stable for the mares and the geldings, the barn for the oxen, the hayloft for the hay, the shed for the sheaves, the field for the vines and the wheat, the garden for fruit and vegetables… ."[2] It was a space characterised by the mixing of species, a living-together where "all breathed the same tepid air, marked by the scent of manure."[3] Yet it was also characterised by an operation of selection: the landscape's human inhabitants domesticated it by controlling the presence of species and the relations between them in patterns of agriculture.

In Serres's series, this first domestication is followed by that of the garden. Here, Serres has in mind the botanical garden as representative of a broader range of spaces, including zoos and natural history museums, where objects of science, defined and chosen by individuals empowered through their academic credentials, travel experience, and other expertise, were placed for exhibition and study. This second domestication is that of the modern episteme, with its asymmetry of subject and object, seeking to isolate the latter from its relations with the world around it. Finally, the series is completed by a third domestication: the national park. In this new space, the asymmetry of subject–object that characterised the second domestication is dissolved: "we no longer areason the things of the world," remarks Serres; instead, "they and we

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[1] Michel Serres, et al., *Parc national des Pyrénées. L'ordre de grandeur* (Toulouse: Éditions Privat, 2007), 6–24.

[2] Ibid., 17–18.

[3] Ibid.

are at once subjects–objects."[4] The national park is coetaneous with the rise of ecology in the twentieth century as "the science—characterised by its composite nature and extreme difficulty—of the *interactions between all living things* in a well-defined place."[5] In this new space, the selection and separation characteristic of the first two domestications give way to an openness and mixing, to a new domestication defined by the attempt to protect a tissue of relations. Once parasite, the human being has turned symbiont in a space described by Serres—with characteristic optimism—as a utopia: a blueprint for a new and necessary world.

Structured in two parts, this article seeks to explore our changing conceptions of landscape, beginning by examining how the first two of Serres's domestications are reflected in changing uses of the word over time, then by examining the presence of the concept of landscape in the ideas developed in his book, *The Incandescent*.[6] The focus of the first part will be on the history of the word in the modern English language,[7] using the geological metaphor of the stratigraphic column to identify different etymological strata. For each stratum, it will consider how a specific meaning of the word reflects the way we see the world and our position in it as human beings, both in terms of the broader philosophical trends underpinning Serres's thought and with specific references to his work. Having thus grounded the term etymologically, the article will then examine how ideas from *The Incandescent* expound on this fundamental shift in how the human subject is conceived, providing a philosophical foundation for the new way of thinking about landscapes Serres advocates in the figure of the national park and highlighting the importance of the concept for thinking about the ecological challenges we face in the twenty-first century.

Landscape in English: An Etymological Stratigraphy of the Word

Stratum One: Pictorial Representations

It was through the world of art that the word "landscape" first entered the lexicon of the English language as we know it today. The Oxford English Dictionary provides our "golden spike"[8] for this

[4] Ibid., 23.

[5] Ibid., 20.

[6] Michel Serres, *L'Incandescent* (Paris: Le Pommier, 2003). English translation by R. Burks (London: Bloomsbury, 2018).

[7] While Serres provides a detailed reflection on the etymology of the French word for landscape in his *Paysages des Sciences* and while translating this reflection would no doubt be an interesting project, to do so here would run the risk of distracting from the focus of this article. Michel Serres and Nayla Farouki (eds.), *Paysages des Sciences* (Paris: Le Pommier, 2007).

[8] The term used by geologists to describe the reference points for the strata of the geological time scale.

first etymological stratum. The word first appears around the end of the sixteenth century and when it does so, it is used to describe pictorial representations of the natural world. By 1598, it was already well enough established to allow the translator Richard Haydock to use the word "landskip" as a translation of *paese*, the Italian word for land or country, in his translation of the Italian artist Giovanni Paulo Lomazzo's *Trattato dell'arte della pittvra, scoltvra, et architettvra* (1584). Here, we find Haydock's Lomazzo praising the virtuoso realism of another Italian artist, a certain Barnazano, as an excellent "Landskip-worker" who "counterfeited Strawberies ſo liuelie vppon a wal in a Landskip, that the Peacockes (ſuppoſing them to bee naturall) pecked at them."[9]

Yet even as the term first appeared in the English language, the tradition of landscape painting was already firmly established elsewhere in Europe. The anthropologist Phillippe Descola traces the origins of the genre to the first half of the fifteenth century in the opening out of the "interior window" that frequently featured in medieval paintings depicting sacred scenes.[10] In these religious works, this interior window consisted of a sort of picture within a picture, offering a glimpse of the outside world in all its profanity. Descola explains how its expansion to fill the dimensions of the canvas allowed the outside world to become the subject of pictorial representation in its own right, dispensing with the framing of the religious scene altogether and, in doing so, marking the advent of landscape painting. The genre's emergence towards the end of the Renaissance meant that, around the time of the word's appearance in Modern English, it was already bound up with a certain way of seeing the world: landscape as an act of artistic representation, of aesthetics; as a painting *by* a human subject *of* a world that would forever run the risk of becoming objectified as mere scenery; in short, the idea that the natural world is out there, ready to be captured, idealised, revered and perhaps—more so than ever in our digital age—even fetishised by us as human beings.[11]

Stratum Two: The Mechanisation of Nature

One of the most interesting points made by Descola is his argument that the genre of landscape

[9] Giovanni Paolo Lomazzo, *A tracte containing the artes of curious paintinge, caruinge & buildinge*, trans. Richard Haydock (Oxford: Joseph Barnes, 1598), 94. It is curious to note that Haydock uses "landscape" to render the Italian word *paese*and not *paesaggio*, the Italian word for landscape. For an interesting discussion of the context in which Haydock's translation took place, see Helen Parkinson's thesis *The English Landscapes in the Seventeenth Century* (Western University, 2018).

[10] Phillippe Descola, *Beyond Nature and Culture*, trans. Janet Lloyd, (Chicago: University of Chicago Press, 2013), 57–63.

[11] As anthropologist Tim Ingold notes, the effects of the word's provenance in the world of art have proved persistent, meaning that the term still bears much of the weight of the first of these strata and its aesthetic connotations. See *Being Alive: Essays on Movement, Knowledge and Description* (Oxon: Routledge, 2011), 126.

painting emerged as a corollary of developments in the discipline of geometry that led to the invention of the linear perspective. As a consequence of this powerful discovery, he argues, paintings and their compositions became based on the premise of "the cohesion of a perfectly unified world in a rational space, mathematically constructed so as to elude the psychophysiological constraints of perception," albeit a world witnessed from "an arbitrary point of view, that of the direction of the gaze of the observer."[12] From an artistic standpoint, the linear perspective provided a powerful means to represent the space in which humans were immersed. In philosophical terms, this shift in perspective found its fullest expression in the philosophy of René Descartes, father of the modern episteme and of the spatial coordinate system that bears his name. The idea of a human subject looking out from an arbitrary point of view onto a homogenous and rational space is closely bound up with the emergence of the modern subject and the Cartesian cogito with its deeply entrenched dualism of mind and body.

In his recent essay *Time, Technology and Environment: An Essay on the Philosophy of Nature*, Marco Altamirano provides an in-depth account of the ramifications of this fundamental change in Western thought and its implications for the relationship between humans and what we have come to call "nature."[13] The change, he argues, is symptomatic of a fundamental "bifurcation" of nature. His analysis traces how Descartes's philosophy lays the ground for the mechanistic conception of nature that would drive modernity, with its unprecedented advances in science and technology (advances that were both the necessary precondition for the material progress from which humans have benefitted over the last few centuries as well as the root of many of the environmental problems and excesses whose consequences we are now grappling with in the twenty-first). With Descartes, Altamirano argues, "it is the modern [human] subject who stands over and against nature" with the "mechanisation" of this latter situating the former "as a driver that operates upon the machine."[14] In other words, "man" is no longer seen as part of nature and the cogito "asserts its dominion over the clock" (the clock being in philosophy a well-worn metaphor for the mechanisation of nature).[15] In this sense, Altamirano's detailed description elucidates a critique that is latent in much of Serres's environmental philosophy, surfacing early on in his *Natural Contract* and reemerging in later works, such as *Branches*.[16] In

[12] Descola, *Beyond Nature and Culture*, 57–63.

[13] Marco Altamirano, *Time, Technology and Environment: An Essay on the Philosophy of Nature* (Edinburgh: Edinburgh University Press, 2019), 21–47.

[14] *Loc. cit.*

[15] *Loc. cit.*

[16] Michel Serres, *The Natural Contract*, trans. E. MacArthur and W. Paulson (Ann Arbor: University of Michigan Press, 1995), 27–31. See also, Michel Serres *Branches: A Philosophy of Time, Event and Advent*, trans. R. Burkes (London: Bloomsbury, 2020), 39.

both, he attacks the attitude of "mastery and possession" he sees as defining our relationship to nature under the Cartesian episteme.

As might be expected, over the next few centuries, this mechanisation gave rise to a new stratum in the history of the word landscape, this time in the context of scientific knowledge. By 1830, the year of publication of Charles Lyell's *Principles of Geology* (our second golden spike), we find the geologist making frequent use of the word "landscape", much along the lines of Alexander von Humboldt's definition as the "total character" of an area of Earth.[17] Lyell's work was, of course, deeply indebted to his predecessor James Hutton, whose use of the mechanical metaphor for nature has been well documented.[18]

In the context of this second stratum of our etymology, the word landscape comes to denote an object of scientific enquiry: something to be studied, understood, and again, represented, albeit this time as part of the production of knowledge for practical or instrumental ends as opposed to purely aesthetic ones. It is the space of Serres's second domestication: the garden. This new meaning of the word is coetaneous with the Age of Enlightenment and the rise of a scientific worldview that gives humans the dangerous illusion of mastery or domination over the so-called natural world.[19] Yet, as Altamirano cautions, such mastery brought with it the seeds of its own destruction:

The mechanisation of nature is not likely to encourage an ecological view of the human within its environment. As previously mentioned, the bifurcation of nature into a physical aspect and a conscious aspect facilitates a picture of the human in confrontation with nature, rather than in an ecological relation. […] By reducing nature to a clock, the cogito can view its concrete environment as purely a means, an object there for technical utilisation.[20]

As an aside, it is perhaps interesting to note that some of the most extreme examples of the process of technical utilisation alluded to by Altamirano can be found in the imposition of European modernity on the developing world. As Claude Lévi-Strauss remarked, writing in 1955:

In the inhabited regions of America […] there are only two alternatives: either nature has been

[17] Von Humboldt's definition (possibly apocryphal) is cited in Marc Antrop's "A brief history of landscape research", in *The Routledge Companion to Landscape Studies*, eds. Peter Howard, Ian Thompson and Emma Waterton, (London: Routledge, 2013), 12–22.

[18] See Stephen Norwick, "Metaphors of Nature in James Hutton's Theory of the Earth with Proofs and Illustrations", *Earth Sciences History*, vol. 21, no. 1 (2002), 26–45.

[19] For a discussion of the idea of this "nature", see Bruno Latour, *Facing Gaia: Eight Lectures on the New Climatic Regime*, trans. Catherine Porter (Cambridge: Polity, 2017).

[20] Altamirano, *Time, Technology and Environment*, 32.

so ruthlessly mastered that it has been turned into an open-air factory rather than a rural area […] or […] the territory has been sufficiently inhabited by man for him to have had time to lay it waste but not long enough for slow and continuous cohabitation to have raised it to the dignity of a landscape.[21]

In such cases, the scale and rapacity of changes have been all the more devastating, often transforming the continent's landscapes completely within the space of decades.

Stratum Three: Cultural Landscapes and Ecological Consciousness

The ecological concerns of Altamirano lead us to the third stratum of our etymology and the birth of Serres's third domestication. This third stratum is roughly coextensive with the twentieth century, when we begin to see a proliferation of critical reflections on this mechanistic view of nature, coupled with a growing awareness of the importance of the dynamic between humans and our environment.[22] The concept of "cultural landscapes" developed by the North American geographer Carl Sauer in 1925 provides our third golden spike. Sauer, who was heavily influenced by the German geographers of the time, defined a landscape as "an area made up of a distinct association of forms, both physical and cultural," defining the former as "the sum of all natural resources that man has at his disposal in the area" and the latter as the "impress of the works of man upon the area."[23] Even though the image of "man" as something outside of "nature" persists, now as a force "impressing" *his* works upon the non-human component of the landscape (tellingly couched in utilitarian terms as mere "resources"), in Sauer's definition, we can nonetheless glimpse the seeds of a shift away from the mechanistic conception of nature to a more dynamic understanding of landscapes defined in terms of the interactions between their physical (non-human) and cultural (human) components, a dynamic that would be taken up in further detail around a decade later with the rise of landscape ecology.[24]

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[21] See *Tristes Tropiques*, (London: Penguin, 2011), 94.

[22] In his book, *Ecología e igualdad. Hacia una relectura de la teoría sociológica en un planeta que se ha quedado pequeño*, Ernest Garcia explores how debates as early as the eighteenth century, such as those between Thomas Robert Malthus and Nicolas de Condorcet, prefigure some of these ecological concerns (Valencia: Tirant Humanidades, 2021).

[23] Carl Sauer, "The Morphology of Landscape", in *Land and Life: A Selection from the Writings of Carl Ortwin Sauer*, ed. John Leighly (Berkely and Los Angeles: University of California Press, 1969), 321–322. A pertinent reflection on Sauer's ideas can be found in Kenneth Olwig, "Recovering the Substantive Nature of Landscape", *Annals of the Association of American Geographers*, vol. 86, no. 4 (Dec, 1996), 643–644.

[24] For a fuller treatment of the links between landscape and ecology, see Richard Forman and Michel Godron, *Landscape Ecology* (New York: Chichester Wiley, 1986) and Gary Barrett, Terry Barrett, and Jianguo Wu (eds.), *History of Landscape Ecology in the United States* (New York: Springer, 2015).

As the twentieth century progresses and the shift in how we think about humans and their relationship to nature becomes consolidated, these ideas find fuller expression in the rise of ecological consciousness and a growing awareness that, in the words of Gregory Bateson, "the organism which destroys its environment destroys itself."[25] Written in the 1960s, Bateson's essay "Form, Substance and Difference" is of particular interest here on account of the author's preoccupation with mind and the connection he makes between the dualism that has marked the modern episteme and a sense of impending ecological catastrophe. There is, Bateson suggests, something inherently anti-ecological about the dualism of mind and matter:

And as you arrogate all mind to yourself, you will see the world around you as mindless and therefore not entitled to moral or ethical consideration. The environment will seem to be yours to exploit. Your survival units will be you and your folks or conspecifics against the environment of other social units, other races and the brutes and vegetables. If this is your estimate of your relation to nature *and you have an advanced technology*, your likelihood of survival will be that of a snowball in hell.[26]

In his diagnosis, Bateson's emphasis on the link between mind, on the one hand, and evolutionary survival and ecology, on the other, hints at a much deeper transformation required in our thought in order to reflect the ecological principle that "the unit of survival is a flexible organism-in-its-environment."[27] The idea that we are somehow "outside" of nature is nothing more than a dangerous illusion: we are part of it and irrevocably bound into the landscapes we inhabit. Mind, he concludes, is immanent in "the total interconnected social system and planetary ecology."[28] This is the ecology of the third of Serres's domestications of landscape, the national park, an ecology of complex interactions, defined by Serres as "the interactions of political subjects among themselves, interacting with the interactions of living beings and inert objects among themselves."[29]

As Serres seeks to show in his *Natural Contract* through a play on the two meanings of the French word *temps* (time and weather), this budding ecological consciousness represents a challenge to the supremacy of the clock and the cogito described above. For Serres, the human time of our modern life has insulated us from the longer rhythms of the second, that is, of the climate, causing us to forget them altogether. Living indoors and immersed in passing time, with science

[25] Gregory Bateson, *Steps to an Ecology of Mind* (Chicago, Illinois: University of Chicago Press, 2000), 454–473.

[26] Ibid., 468.

[27] Ibid., 458.

[28] Ibid., 468.

[29] Serres, *Parc national des Pyrénées*, 21.

conducted in laboratories and nature domesticated within the enclosed space of the garden, we came to forget the world around us and to forget nature. Yet we are now in the painful process of rediscovering them as we realise the physical consequences of our Cartesian "mastery and possession," causing us to remember the fundamental importance of this second, larger time and that "our lives depend on this mobile atmospheric system […] with rhythms and response times that vary colossally."[30] This idea is echoed in his later work *Branches*, where contingency creeps back in to the certainty thought to be guaranteed by modern science, like "a flood [filtering] in and [trickling] over and under and through a dyke."[31] The ecological philosophy Serres develops in his *Natural Contract* and subsequent works thus explores the problem of reconciling these two times by learning how to think about the relations between them, a problem directly related to the importance of the national park and, as we shall see, his treatment of time in *The Incandescent*.

Substrata: Community and the Pagan World

We have so far seen three strata in our etymology: art, science, and the cultural–ecological paradigm of the twentieth century. They take us from the emergence of the subject–object asymmetry associated with Serres's second domestication to the point at which it is eclipsed by the new ecological paradigm. Yet the modern English word is only the most recent part of a much longer history: as Ingold notes, the word landscape's provenance in English as an object of aesthetic contemplation "has led generations of scholars to mistake the connotations of the suffix -scape for a particular 'scopic regime' of detailed and disinterested observation."[32] In contrast to this tendency, Olwig, whose work is cited by Ingold, has sought to recover the "substantive" meaning of the word in his detailed research[33] highlighting its medieval roots and its connection to what Ingold terms "an area of land bound into the everyday practices and customary usages of an agrarian community."[34] As Olwig reminds us, just as the word "township" describes the organisation of or a community of citizens around the figure of the town, landscape—here understood as "landship"[35]—describes the organisation of a community around

[30] Serres, *Natural Contract*, 27–32.

[31] Serres, *Branches*, 28.

[32] Ingold, *Being Alive*, 126

[33] Olwig, "Recovering the Substantive Nature of Landscape".

[34] Ingold, *Being Alive*, 126.

[35] Olwig points out that the suffix -scape comes from -schaft, which is also equivalent to the English suffix -ship (ibid., 633).

the land and the concomitant sense of place.

Venturing back beyond the history of the word in English, it is possible to identify two substrata that reflect these meanings in the pre-history of the word's Germanic roots. The first dates to 1240. On this occasion, our golden spike is the *Glossarium Bernense*, a Latin to Middle Dutch dictionary[36] in which we can find the word *lantscap* listed against the Latin terms *prouintia* and *clima*, forebearers of the modern words province and climate. In the former, we have the idea of territory, social structures, and territorial organisation of the community and customary law discussed by Olwig. However, there is also the intriguing suggestion of a link to climate (a word which would have meant something slightly different at the time, its meaning perhaps closer to its Greco-Latin roots describing the latitude and inclination of the land at a given point on the globe). This suggestion is further reinforced by the listing of the Middle Dutch word *klimaatzone* against the entry for *lantscap* in the *Vroegmiddelnederlands Woordenboek*, a dictionary of Early Middle Dutch covering the twelfth and thirteenth centuries.[37] The link to the climate is a powerful reminder that the medieval farmers, described by Ingold as "shapers of the land," and the agricultures and cultures that emerged from this process of "shaping," were closely bound up with the climate of the individual landscapes from which they would "wrest a living from the earth."[38] In this substratum, we thus find an example of the connection to the second of Serres's times from the *Natural Contract*, the time of the weather or climate, produced by "what our ancestors called meteors" (here understood in the sense of atmospheric or meteorological phenomena).[39]

Going back further still, we can find a second and deeper substratum, this time in the Old Saxon language. Our golden spike for this final and deepest layer in our etymological strategy is the ninth-century Old Saxon epic the *Heliand*, in which the word *landskepi*, one of the earliest recorded predecessors of the English word landscape, figures repeatedly. Of the three English translations of the poem published in the last century,[40] the most recent by Dewey is of particular interest, since its more literal approach allows us to place the word in context and infer

[36] Available online at www.dbnl.org.

[37] Instituut voor de Nederlandse Taal, *Vroegmiddel-nederlands Woordenboek*, www.ivdnt.org/woordenboeken/vroegmiddelnederlands-woordenboek/ (accessed 28 January 2022).

[38] Ingold, Being Alive, 126.

[39] Serres, *Natural Contract*, 27.

[40] Mariana Scott, *The Heliand, translated from the Old Saxon by Mariana Scott* (Chapel Hill NC: University of North Carolina Press, 1966); G. Ronald Murphy, *Heliand: Saxon Gospel* (New York, NY: Oxford University Press, 1992); Tonya Kim Dewey, *An annotated English translation of the Old Saxon Heliand: A ninth-century Biblical paraphrase in the Germanic epic style* (Lewiston, NY: Edwin Mellen Press, 2011).

something of its usage by the Saxons. Doing so, it becomes clear that we are talking about much more than just a tract of land: from phrases such as "over all the people of that landscape" (5:344), "I shall send you over this landscape, as a lamb among wolves" (22:1873) and "I wish to make known to you as truth here what I meant, so that you the better understand my teachings over all this landscape" (30:2441) we find not just a synecdoche, whereby the term land stands for those who dwell there, but evidence that the landscape clearly comprised its inhabitants. They were bound up in it and formed an integral part of it in patterns of habitation closely linked to the agrarian economy.[41] This final substratum thus returns us to the first of Serres's three domestications, the farm.

What makes this final substratum so interesting is that the peculiar historic situation of the *Heliand* means the poem looks at once forward and back. As a "saxonization and as a northernization of the Gospel,"[42] seeking to retell it through the eyes of the Saxons in the ninth century, it points forward to the consolidation of Christianity in Europe and of a theology which Serres notes as the "cultural condition" for the "cognitive innovation" of modern science.[43] Viewed in this way, it is bound up with the long, slow, and deep movement so eloquently described by the historian J.M. Roberts, whereby the "fundamental Christian dualism of [...] the earthly and the heavenly" would "[secrete] an essence to be utilized against itself," ultimately leading to "the independent critical stance of the secular mind."[44] Yet at the same time, as Murphy notes, it is also "an archaeological site from which fragments of pre-Christian Germanic culture could be sifted."[45] In this sense, we find it looking back to an older landscape, that of Serres's first domestication, a landscape defined by radically different conceptions of the land and nature and by the pagan beliefs that chime with the etymological kinship Serres finds with *pagan* in his history of the French word *paysage*.[46]

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[41] James Westfall Thompson, "The Early History of the Saxons as a Field for the Study of German Social Origins", *American Journal of Sociology*, vol. 31, no. 5 (1926), 611.

[42] G. Ronald Murphy, *The Saxon Saviour* (New York: Oxford University Press, 1989), 4.

[43] Serres, *Branches*, 34.

[44] J.M. Roberts, *The Penguin History of Europe*, (London: Penguin, 1996), 224. In *Nietzsche. Fidelité à la Terre* (Paris: CNRS Éditions, 2019), Pierre Montebello provides a fascinating account of this process through his reading of the philosophy of Friedrich Nietzsche, arguing that "the opposition between belief in the true world and *our* world does not only concern Christianism but is the cornerstone of the entire edifice of science, metaphysics and theology in Western history" (11–154).

[45] Murphy, *op. cit.*, viii.

[46] In his reflection on the etymology of *paysage*, Serres traces the link between the word and paganism via the Latin root *pagus*. See Serres and Farouki, *Paysages des sciences*, lviii.

Deposition: Time and Landscape in Serres's *The Incandescent*

The first part of this article explored how different conceptions of the relationship between humans and nature manifest in the different strata of the word landscape over time and discussed them in terms of the first two domestications identified by Serres in his essay on the Pyrenees National Park. We saw how the English strata of the word largely reflect the subject–object dualism that characterises modern science and is representative of the second of Serres's domestications. We also saw how, looking back past these strata, it is possible to identify two substrata from among the word's Germanic precursors, whose links to agriculture and community reflect the first domestication in the series. Our etymological stratigraphy revealed a latent polysemy in the word landscape and it is arguably this very polysemy that means the word lends itself so well to capturing the complex web of relationships between humans and nature that characterise the third domestication in Serres's series. Accordingly, the second part of this article will analyse one of Serres's later works, *The Incandescent*, which deals explicitly with the issues of landscape and time in order to help us better understand the philosophical basis of this third domestication and the deposition of this new strata in the making.

Originally published in French in 2003, *The Incandescent* forms part of a series of books published by Serres during a five-year period between 2001 and 2006, offering a panoramic reflection on the human condition at the start of the twenty-first century.[47] One of the book's principal concerns is developing a philosophy that moves beyond the subject–object dualism that separates "man" from "nature." In this sense, the book can be seen to build on Serres's earlier critique in his *Natural Contract* of the "mastery and possession" that define the Cartesian worldview.[48] With its exploration of time and rhythms, *The Incandescent* moves beyond this towards a philosophy that challenges and blurs the boundaries between subject and object and reflects on how we might find the wisdom needed to master our newfound mastery of nature.

Time is a key theme of the book, and, in this sense, its ideas can be seen as a heritor of the metaphysics of duration, which played a significant role in twentieth century French philosophy and whose greatest exponent was Henri Bergson. Bergson's two earliest works, *Time and Free Will* (1889) and *Memory and Matter* (1896), were fundamentally concerned with the distinction between quantitative (spatialised) and qualitative conceptions of time, that is, between clock time, or "measured" time, and "lived" time, or time in movement. "Science," Bergson argued, "cannot deal with time and motion except on condition of first eliminating the essential and

[47] The four titles, all published by Le Pommier, are *Hominescence* (2001), *L'Incandescent* (2003), *Rameaux* (2004) and *Recits d'Humanisme* (2006).

[48] Serres, *Natural Contract*, 32.

qualitative element—of time, duration, and of motion, mobility."[49] Bergson's work is referenced multiple times in *The Incandescent*, an observation that is arguably all the more significant given that Serres's largely eschewed the conventions of academic citations. Both aspects—the primacy Bergson accords to duration and the critique of the mastery of nature—are themes that underpin the ideas developed in *The Incandescent*. By choosing to think in terms of time first and space second, as Bühlmann remarks in her profound and insightful study of Serres's work, "Serres proposes to attend to nature by involving a model of time that is capable of accommodating space."[50] It is this inversion of the primacy of space over time that Serres uses as the basis for his humanist philosophy based on a scientific worldview that is not grounded in the opposition between humans and nature.

The Incandescent begins with the description of a mountain landscape: a young girl is playing with a doll; her grandfather stands behind her; they are set against the backdrop of a farm, surrounded by high mountains. Over the following pages, Serres proceeds to tease out the temporal aspects of the scene, inverting the conventional wisdom whereby we tend to perceive landscapes as "spatial mosaics" and inviting us instead to conceive of space itself as a "mosaic of time," with its myriad rhythms and tempos.[51] When he describes the girl running over to place her doll inside the walls of the farmhouse, he does so in terms of time: "in just a few seconds," he remarks, "three years [the age of the child] slips between two centuries [the age of the house] and ten million years [the age of the rock]."[52] This temporal translation of the girl's movement then opens out into a rich meditation on the different times of the different elements of the landscape, each with its own rhythm and speed. In doing so, Serres reminds us that it is not only the river in the valley that flows but the mountains too, their rock disintegrating with imperceptible lentitude, crumbling as they are transformed into boulders, pebbles, and sediments that are in turn conveyed down the valley and out to sea: "I imagine," he muses, "a living thing whose heart would beat slowly enough to perceive that mountain ridge as a giant wave whose collapsed rocks would represent the droplets of seawater streaming on its flank."[53] Yet at the same time, he is equally aware of the perspective of other elements in the landscape for which it is human time that figures as long, slow, and deep: hence, while on the one hand "as far as any volcano can remember, no star has never been seen to age," on the other it is equally

[49] Bergson, Henri, *Time and Free Will*, trans. F.L. Pogson, New York: George Allen & Company Ltd (1913), 115.

[50] Vera Bühlmann, *Mathematics and Information in the Philosophy of Michel Serres*, London: Bloomsbury (2020), 59.

[51] For an example of the characterisation of landscapes as "spatial mosaics", see Jianguo Wu, "Landscape Ecology" in *Encyclopedia of Ecology*, vol. 3, ed. Sven Eric Jorgensen (Amsterdam: Elsevier, 2008), 2103.

[52] Serres, *The Incandescent*, 5.

[53] Ibid., 6.

true that "in the memory of a rose, no gardener has ever been seen to die."[54] The point then, is not so much the quantitative measurements of the periods of time (three years, two centuries, ten million years) but the qualitative aspect of time for each of these elements in the landscape and their composition and the relations between them—a sort of temporal relativity.

In these opening pages, Serres takes us from the idea of a static landscape as a backdrop to human life to a dynamic one teeming with subtle interactions and in which even the rock of the mountains is bristling with movement. There are two aspects to note here: the first is about measurement, about counting time and dating things; the second is about relations, about the composition or marquetry inherent to this idea of space as a mosaic of time. The first is the story of what Serres elsewhere calls the "scientific and technological age,"[55] of the discovery of the time or times of the world—of rocks, of species, of the universe itself—running from figures like Hutton and Darwin through to the scientific discoveries of the twentieth century that allowed us to date the objects of this new world with unprecedented precision. So profound is this transformation (recall that Bishop Ussher's seventeenth-century chronology dated the world to just 6,000 years old) that Serres invokes Plato's allegory of the cave: whereas, "the released prisoner formerly only added a third dimension to his perception, a dimension which would deepen the flat image he usually saw on the rear wall of the cavern […] we gain, for our part, thousands, billions of levels along the universal irreversible duration."[56]

The second aspect, which concerns the relations between the different times of which the spatial mosaics of landscapes are composed, is arguably of greater interest. One of the aspects Serres goes on to develop in his discussion of the mountain scene at the start of the book is the idea of decomposing space—in this case, a landscape—into the different times of its composite parts. He talks of a "composite multiplicity of rhythms of different widths and speeds:" in our mountain scene, he writes, we have the "house, earth and rock … wheat, cows and hens… plough, pitchfork and knife… ."[57] Constituent parts of the landscape each have their own rhythm. This point can perhaps be better understood by considering a second example of this sort of decomposition found a few pages on, when Serres turns his attention to the human:

My brain, to only talk about that, is composed of ancient parts in the reptilian manner, of other parts as new as those developed by chimpanzees and bonobos, lastly others still, incomparably more recent. Layer by layer, it could be dated like those cliffs whose different strata sink more

[54] Ibid., 3–4.

[55] Serres, *Natural Contract,* 32.

[56] Serres, *The Incandescent*, 6–7.

[57] Ibid., 6.

and more deeply into the past. Likewise, my DNA appeared, of course, with the union of my parents, who built it the way cards are shuffled, but in its own structure it is more than three billion years old; even older still, the atoms composing it and me go back to the fabrication of hydrogen and carbon by the galactic energy of the universe.[58]

Once again, we have an object in space—this time the human brain—and Serres shows us how it is traversed by rhythms and composed of different times or durations. This is a key point, allowing us to see how objects that might at first sight appear to enjoy a stable existence in space—a mountain landscape or even ourselves as humans—become much less stable when we think about them in terms of their existence in time. Not only can the material world no longer be taken as something inert and given, since it is in continuous movement and bristling with subtle interactions, we as humans—our brains, our bodies, our species itself—are also immersed in this temporal flow.

As we have seen, this metaphor of the mosaic and the associated idea of composition gives us the idea of decomposing spaces into their composite times or rhythms.[59] However, the converse is equally true: we can also talk about space as a summation of rhythms (an idea neatly illustrated by Serres in a pun later in the book when he asks whether, instead of talking about chromosomes, we should really be talking about "chrono sums," that is, summations of times). This idea of summation is another key aspect of Serres's understanding of nature in *The Incandescent*, drawing on his mathematical background and the concept of integrals from the differential calculus, with their summation of infinitesimal parts. If we look at the mountain landscape at the start of the book or the example of the human brain, they can also be defined as a summation of "branchings" or bifurcations, whose contingent paths, if followed back in time, ultimately lead back to converge on the origin of the universe in the Big Bang. "In the vicinity of each bifurcation," Serres argues,

an astonishing, sometimes even improbable, emergence suddenly arises: the big bang itself, if it ever existed, the baking of the material elements in the furnace of the galaxies, of the stars, of the hundred objects of the astrophysical Universe, the countless events dependent on the cooling of some planet, the bombardment of a thousand asteroids, the occurrence of water on the Earth, the ruptures of the tectonic plates, volcanism, the concatenation of an RNA, the Cambrian explosion, the five eradications of species, the disordered torrent of mutations, our

[58] Ibid., 7.

[59] Elsewhere, Serres highlights the connection to the word music of this metaphor of the mosaic and the idea of composition: "the wisdom of my language and of its kin sing together the fraternity/brotherhood of music and the mosaic; same word, different pronunciation" (Serres and Farouki, *Paysages des Sciences*, xii.). See also the *Cahier de L'Herne* for Michel Serres, where he writes of "Tempo : le compositeur" (Paris: Éditions de L'Herne, 2010, 56–59).

ancestors of six to seven million years ago, their first bipedal walks, fire, the exit from Africa, seafaring, wheat, the ox, the donkey, the apple and wine, the invention of courtly love by the Occitan troubadours…[60]

Each of the branchings in the Grand Narrative of the history of our universe can be thought of as a birth: a point at which something new arises or is born. If we ask the question: what are we as humans? Serres will reply that human nature is the sum total of all the branchings, bifurcations, or births of this Grand Narrative that led to our species. (In a mathematical sense, it is a definite integral.) Similarly, if we turn our enquiry to nature itself, Serres will reply that it is the summation of all paths, all bifurcations—past, present, and future—of this explosive branching that leads us back to the Big Bang. (In a mathematical sense, Serres tells us, it is an indefinite integral.) Nature, then, can be thought of as a summation of births. With characteristic etymological prowess, Serres shows us that this is quite literally the case, reminding us that the word nature comes from the future participle *naturus—natura* in the feminine—of the Latin verb *nascor*, to be born. Nature, he argues, is "what is going to be born, what is in the very act of or about to be born, the very process of birth, of emergence or newness."[61]

This way of defining or conceiving of nature has, among its many advantages, the merit of showing up Cartesian dualism and its centuries of associated baggage as a sort of false problem: the fact that we are part—a tiny subset—of the myriad branchings or births in this vast infinite summation puts paid to the folly of "man" against "nature." In *The Incandescent* we thus have a sort of double movement: on the one hand, there is the decomposition of space into a mosaic of time in order to approximate it by a discrete set of rhythms that can be apprehended by the human intellect; on the other, we have the integral as a means to describe the emergence of objects in space from the infinite summations of births or branchings of a reality that forever escapes us.[62] As the edifice of mastery and possession built on the foundations of the Cartesian episteme gives way and crumbles, in its place grows Serres's humanism founded on understanding our position in this vast universal summation. This is the vision set forth by Serres in *The Incandescent* and it is in this vision that we can glimpse the deposition of a new strata not only in the history of how we think about landscapes but in the usefulness of the concept for capturing our position within nature.

[60] Serres, *The Incandescent*, 15.

[61] Ibid., 15. Elsewhere, Serres writes of "giving back to the word nature its original meaning of our natal and native conditions, the conditions in which we are born-or ought to be reborn tomorrow" (Serres, *Natural Contract*, 44). The connection between nature and birth has also been explored by the Australian philosopher John Passmore (Olwig, "Recovering the Substantive Nature of Landscape", 637).

[62] The idea of branchings and time is further developed by Serres in the second part of *Branches*.

The National Park: Utopia and the Birth of a New Humanity

One of the most striking characteristics of Serres's philosophy is arguably the optimism that radiates from his work. Together with *Hominescence* and *Branches*, *The Incandescent* can be seen as Serres's attempt to frame the challenges of the twenty-first century as the growing pains of a new humanity, that is, as a problem of what he terms hominescence.[63] In doing so, his work stands out for eschewing the eschatological discourse of crisis and with it the false dichotomy that often frames our response as a choice between a sort of techno-utopia, on the one hand, predicated on the dangerous illusion that technology and science will be our saviours and will allow us to transcend the limitations of the human species and avoid the boundaries of a finite planet, and, on the other, the spectre of a technocratic behemoth that would sacrifice freedom for the efficiency and security required to protect humans from the threats of an increasingly volatile environment that we ourselves have created.[64] Both these visions are framed in terms of crisis and both seek to respond by doubling down on our ability to master and possess nature. In this sense, they both share the same delusion, the same conceit that human exceptionalism will allow us to triumph over the constraints of a finite planet. In contrast, in Serres's work, we can find an alternative framing and the designs for a new way of thinking about our relationship to nature, for a way to reconnect and resynchronise with the rhythms of the landscapes we inhabit.

In the etymological stratigraphy presented in the first part of this article, we traced a movement in Western thought, beginning with the substrata that correspond to the first of the three domestications of the landscape described in Serres's essay on the Pyrenees, characterised by the agrarian practices of the medieval world and the pagan beliefs of the Saxons. We then saw the strata of the second of Serres's three domestications, the landscape of the modern episteme, with its asymmetry of subject and object and defined in terms of the dualism between "man," on the one hand, and his "mastery and possession" of nature, on the other. Finally, we saw the deposition of a new stratum, characterised by the third of Serres's domestications and beginning with the ecological movement of the twentieth century. Serres's reflections on nature and landscape in *The Incandescent* allow us to understand the process of deposition taking place atop this stratigraphic column, showing how human life is inextricably bound into the landscapes we inhabit and how landscapes themselves can be conceived as a composition of times, of rhythms, and of the complex weave of interrelationships between them.

Serres had a deep personal connection to the Pyrenees, most notably to the River Garonne,

[63] A neologism coined by Serres combining hominization and the suffix -escence, in the same sense that adolescence describes the passage towards adulthood (Serres, *Hominescence*, 10).

[64] See the discussion of singularitariansm and accelerationism in Déborah Danowski and Eduardo Viveiros de Castro, *The Ends of the* World, trans. Rodrigo Nunes (Cambridge: Polity Press, 2015), 45–57.

which rises on the Spanish side of the chain in the Val d'Aran and flows for over 500 kilometres to the port of Bordeaux, passing through his birthplace of Agen. Having travelled the world and having spent much of his adult life between Paris and Stanford, Serres would avow, at the age of 73 that "Garonne still flows in my arteries."[65] At the start of his essay, he evokes the memories of a youth spent working with his family on the river, breaking the rocks its waters would bring down from deep in the heart of the mountains.[66] In this sense, it seems fitting that, writing towards the end of his life, he was to find a blueprint for the future of humanity in returning to the landscapes of his childhood. In the Pyrenees National Park, Serres found a place—and also, as we have seen, a way of thinking about place—where the human as parasite could learn to become human as symbiont; where we could free our thought from the asymmetry of subject and object; where the wisdom could be cultivated to nurture the interrelations between the park's composite elements; and where, in the growing pains of our hominescence, we could perhaps find the wisdom needed to master our mastery of nature.[67] In short, In the Pyrenees National Park, Serres was to find a model of a new world. Perhaps this was why he felt able to conclude his essay by proposing as an alternative name for the park "the felicitous name of Eutopia."[68]

[65] Serres, *The Incandescent*, 206.

[66] Serres, *Parc National des Pyrénées*, 6.

[67] Serres, *Hominescence*, 141.

[68] Serres, *Parc National des Pyrénées*, 24.