

# ATLAS

Michel Serres

Translated by  
Randolph Burks and Anthony Uhlmann  
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## *A legend to read this atlas easily*

Without a map, how does one visit a city?<sup>1</sup> We find ourselves lost in the mountains or at sea, sometimes even on the road, without a guide. Where are we and what are we to do? Yes, through where should we pass to go where?

A collection of maps useful for locating our movements, an atlas helps solve these questions of place. Lost, we find our way thanks to it.

### *The new world*

Why the maps and plates of the following atlas?

Everything is changing today: the sciences, their methods and their inventions, the way of transforming things; technologies, and therefore work, its organization and the social bond it presupposes or destroys; the family and schools, offices and factories, countrysides and cities, nations and politics, the habitat and traveling, borders, wealth and destitution, the way of having children and educating them, the way of waging war and exterminating each other, violence, law, death, spectacles ... Where will we live? Who will we live with? How should we earn a living? Where should we emigrate? What are we to know, what are we to learn, what should we teach, what should we do? Therefore, how should we behave?

In sum, how are we to find our way about in the global world that rises up and seems to replace the old world, which was well-categorized according to diverse places? Space itself is changing and demands different world maps.

### *Virtual spaces*

Among these transformations, one of the most important concerns precisely our houses and our travels: the way of inhabiting. Born tied, movingly, to a local ground, forever wounded from leaving its loves, we were happy, even so, not long ago, to pass through eighty places, to sometimes make a trip around the world. Were we visiting the halls of an ancient museum?

For, by traveling differently, we no longer inhabit in the same way. For a long time now we have been able to phone the extremities of the Earth; images sent from over yonder no longer surprise us; separated by a thousand leagues, we can get together for a teleconference, work together even. We travel without taking a single step. Where does this conversation take place? In Paris, in our room? In Florence, from where our friend replies? Or in some intermediate place? No. In a virtual site. The old questions of place, *where are we speaking, you and I?, what sites do our messages pass through? ...*, seem to melt together and spread, as though a new time was organizing a different space. Being-there expands.<sup>2</sup>

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<sup>1</sup> Map = *plan*, which has two or three equivalents in English: generally I have translated it as 'map', but it also corresponds to 'plan' or 'blueprint'. All notes, except where otherwise indicated, belong to the translators.

<sup>2</sup> Being-there = *l'être là*, which refers to Heidegger's *dasein* [literally, there-being] but is usually written as *l'être-là* in French. I am including the hyphen for clarity's sake. However, the term is used more broadly and figuratively in this

Dissolving the old borders, the virtual world of communication conquers new lands: it is added to traveling and often replaces it. The pages of the old geography atlas are prolonged into networks that scoff at coastlines, customs houses, obstacles, whether natural or historical, whose complexity was drawn not long ago by its faithful maps; the passage of messages surpasses the routes of pilgrimages. Just as the sciences and technologies are now tackling the possible more than reality, so too our transportation and our meetings, our habitats, are now becoming virtual more often than real. Will we be able to sojourn in such virtualities?

When you think about it, haven't we resided in virtuality, in our heads and our dreams, since the dawn of the human being? Through a slow process of re-equilibrium, the rarest newnesses are anchored in ancient habits we hadn't detected. This book describes both these newnesses and these ancient habits, for we adapt wonderfully to unfamiliar technologies if they bring back a known world.

This atlas projects the old and the new worlds onto one another.

### *Knowing and learning*

Among these transformations, another, which is just as important, concerns knowledge and the ways of learning it: knowledge will move towards those who formerly traveled towards it. Concentrated in schools, libraries, laboratories, campuses ..., reared, perhaps abducted, it waited for schoolchildren, readers, researchers or students to hasten towards it, at great cost. These distances having diminished, we will from now on learn via radio, digital messages and fax ... just as much as within stable institutions built out of the hard. A hope: instead of forcing ourselves to wander towards it, will knowledge come towards us, democratically? Don't run to the centers anymore; knowledge is here, in voices, images, diagrams and maps.

You no longer have to answer the question, *where should you go?*, but rather, *where are you?*. For, as well, you find yourself in the library, the laboratory, even the Academy, in the process of reading books and world maps, united with sources of knowledge via a virtual space; perhaps even the sensation of sitting over yonder prevails over the feeling of staying in your chair at home. Will these channels suffice? Will they ever replace the living presence of the teacher, that beloved incarnation of knowledge? But no matter how present it may seem, did the professorial body ever teach anything other than the virtual – numbers and worlds from elsewhere? Are we entering a new quarrel of the Ancients and Moderns, or will we mix, here as well, the ancient world with the new one?

When knowledge changes, learning is transformed; when the channels for teaching change, knowledge is transformed – and institutions follow. How do the new institutions, which are virtual, mix with the old ones? What single map can be drawn of them?

### *Teachers and geography*

A teacher [*instituteur*] has spoken with regard to any change of this magnitude.<sup>3</sup> At the beginning of our Western history, Homer assumed this role of initiator by recounting the wanderings and shipwrecks of a cunning and bold sailor whose wife rejoined him day and night in dream by weaving and unweaving, on the loom of her tapestry, the charts of her seafaring husband's voyages. Already, neither lover was there! While the first was sailing on the real sea, often uncharted, the second was dreaming in the virtual space of her woven network. Penelope wove, on the heddle, the atlas that Ulysses traversed, by oar or by sail, and that Homer sang of, on the lyre or the cithara. The pedagogy of

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work than in Heidegger.

<sup>3</sup> Teacher = *instituteur*, a word commonly used for primary school teachers. Lost in any English translation, however, is the sense of instituting or initiating people into institutions.

Greek children taught them the three gestures at a stroke.

Preceding and following our knowledge like our dreams, Jules Verne's *Voyages extraordinaires* played, for a time, the role of the ancient *Odyssey* by engraving the landscapes and the maps of the world, just as *Le Tour de la France par deux enfants* drew both of these for France. Thus Jules Verne accompanied Jules Ferry.<sup>4</sup> Who, in those days and for a long time after, didn't leaf through his immense atlas page by page and run, virtually, through the known and the unknown of lands or sciences, mysterious islands, but more than real?

Why do such instructional works exist? Because the transmission of a knowledge and of the experiences or voyages of a life don't merely consist in teaching them point by point and place after place, as it were; rather these places, ordinary, must hang together in a global vision that incarnates culture the way a magnet attracts scraps or particles of iron so as to unite them into a design as radiant as an aurora borealis: from then on we will travel on the charts and the maps of the space visited by these predecessors.

Where does one read this global vision? On that which forms the matrix, the container or the medium of all knowledge: yes, the world, whose geography tells a background knowledge.

### *Enchantments of the world*

What the *Odyssey* did for the Mediterranean or *Le Tour* for French children, the *Voyages extraordinaires* of Jules Verne accomplished for the Earth and its planetary environment. All in all, these stories give each epoch its world, bring it into the world, yes, just as a mother brings her child into the world. They enchant geography, its maps and its landscapes, with their enthusiasm so as to construct, with a measured and reflective optimism, maternal, the old and new universe of adult children. These teachers, to whom we owed our lives and intelligence, also showed us the beauty of the world.

Unique to our century, networks of communication realize virtual spaces, which were formerly left to dreams and representations: a world under construction in which, delocalized, we get our bearings and travel about, a space that's less detached from the old territory than it is said to be, since those that stayed attached to the earth, not long ago, lived in the virtual as much as we do, although without the adapted technologies. This new world, simply unstuck, virtually global, demands the same wise and measured enthusiasm, the same positive optimism and the same sense of beauty without which no learning can happen effectively. For, whatever the content you may transmit, if you give it in ugliness, the ugliness alone will remain and the content will fade away, leaving violence in its place; if you give birth to it in beauty, the transmission will pass on, the content will remain, and this beautiful requirement, by propagating itself, will allow all around to live. This is what I mean by enchantment.

Networks enchant us, but like drugs. Ever since the old fabulist Aesop said that the tongue was the worst and the best of all things, it has become a dull and obvious truth to observe, after him, that every means of communication – speech, writing, in the past or not long ago, and channels, now – becomes poison or cure, indifferently. Hence the two enchantments. We heal ourselves, then, with that which kills. No, nothing has changed.

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<sup>4</sup> Jules Ferry was the French Minister for Education who designed the Republican system of schooling in the 19<sup>th</sup> century. *Le Tour de la France par deux enfants* [a trip around France by two children], written by Augustine Fouillée in 1877, was read by many generations of French schoolchildren. Replete with illustrations, it depicts the travels of two orphans across France in search of family members. Along the way, they discover new lands and customs. The book helped to create a sense of a unified France.

### *The new and ancient worlds mixed*

Everything changes but nothing changes. Buried in archaism at least up to our shoulders and for three-quarters of our actions; attached to powers and to hierarchy, like baboons or termites; athirst for the blood of our fellows in the majority of spectacles, like vampires; impelled by the passion for belongingness to love only those within our own group to the exclusion of others, like animal species; carrying the weight of history on our backs, for the worse and the better, we fear the least atom of evolution ... How could we have said that everything changes?

Far from crying and mourning over the lost world or announcing with massively hyped publicity the staggering newness of what is about to happen, our true teachers, the Penelopes of their type, always stitched ancient patience to the impatient advents, always wove lighter contemporary warps to the perennial weft of the heavy and immemorial universe; they all glued the pages of the atlas of the day to the inset maps of the archaic. So the plans, world maps and charts that follow sew, weave, tie and draw these interlacings and these prolongations; they mix and drown memory into dawn or, to speak without depth or grace, culture into technology. Nothing changes but everything changes.

### *Another strong stitching: reason and existence*

Here, now, is the fundamental question for any atlas: what does one need to map? The obvious response: beings, bodies, things ... that can't be thought in any other way. For why do we never draw the orbits of the planets, for example? Because a universal law predicts their positions; why would we need a route chart in this case of predictable movements and situations? It suffices to deduce them from their law. No rule, on the contrary, prescribes the cut of these coasts, the relief of landscapes, the map of the village of our birth, the profile of a nose or the thumbprint ... These are singularities, identities, individuals, infinitely distant from any law; it's a matter of existence, the philosophers said, and not reason.

That being the case, the simulations called portraits, reproductions or representations were for a long time considered to be retardations compared to principles, which would be unobtainable or absent. For good reasons, the hard sciences, and sometimes even the social sciences, for bad reasons, heaped scorn on the geographer, the anatomist, the urbanist ... laughing at the distance between true geometry, which is demonstrative, and the geometry practiced in the field ..., which is vague. Rigorous law, in the end, is the best kind of memory because it lacks any inventory and so remains light, whereas you have to make and then preserve drawings in order to retain the very heavy memory of singularities.

Algorithmic methods, which are ancient since they date from the Babylonians but new ever since computers (therefore stitching, for their part as well, two worlds and two times together), preside over the technologies of simulation, which approach existence with an exquisite proximity. They sometimes suggest new paths for passing from the local to the global of a reliability that was unsuspected by classical reason, which was directly preoccupied with luminously global abstraction. Because algorithms proceed, in the absolute sense of the term, that is to say, they describe processes, methods by sets of paths, their reason might be called cartographic. In proceeding step by step, but at the speed of light, simulation catches up with what we used to call reason.

A lesson from the new atlas: this new geography is every bit as good as the hardest of the old sciences, and since philosophy was imitating the latter, it suddenly finds itself outmoded!

### *The final stitching: between utopia and tragedy*

Black and white, as you shall see, the maps or plans that follow sometimes project blissful isles, but also an imminent hell. Utopia or tragedy? The one or the other, at our will; it's our choice. This

atlas stitches and weaves together hopes and fears, a mixed world that, trembling, hesitates between destructive violence and inventive culture, endless war and perpetual peace, destitution, famine and shared feasts, education and ignorance, murder and love ... Our means, which are almost all-powerful since they construct a universe, promise us, in sum, both at once. These terrible pages or these positive promises, which will you be able to read first?

During forest fires, we're fascinated by the fire and its flames, the arsonist's crime, the heroism of the firemen and the impressive technology of the water-carrying helicopters; who talks about the tree planters? Preventive medicine can't appear in plain sight because, in preparing the silence of health, it becomes buried in the redoubled oblivion of the normal and of the past that had prepared this normal. Positive news remains illegible, while spectacle, in order to appear more clearly, demands the negative. Whenever it prepares knowledge and peace, the instituting dynamism of teachers remains invisible. Why? Because, quite the contrary, we are only struck by the men and words that open the dramas of war or make reparations for them; represented horrors hold us spellbound.

That which is startlingly visible is called a 'phenomenon' by both philosophy and common parlance; the science philosophy pompously calls 'phenomenology' therefore demonstrates that everything happens through the work of the negative: this simply means that blood and tears ensure spectacle. Therefore, habitually flaunting its power and its worldwide glory through images of destruction, the new virtual theater of communication, which is tragic in order to spread terror or elicit pity, which is critical in order to stage as many courts and trials, streams overabundantly with murders and assassinations, whether perpetrated or atoned for, with humanitarian actions and crimes against humanity: in this way it convinces us of the work of the negative by occupying us with its spectacle.

Beyond this phenomenality, the real construction of a new universe, even if virtual, demands the silent modesty of preventive works. Let's certainly pledge our attention to crises and to treating the pathological, but above all let's prepare the future through preventive teaching and peace through knowledge. We build houses and construct roads so as to not lightheartedly resign ourselves to turning our children into killers.

First of all, how do we get our bearings in this voyage that's beginning?

## PROLONGATIONS

*Where are we to be?*

## 1. Global space

### *Two neighboring landscapes*

I was born in the middle of an alluvial plain, in France, where, beneficial and harmful, a river irrigates or floods its valley at irregular intervals. It's a valley planted with apple and peach orchards and ten varieties of cherry tree, with neighboring plum trees starting shortly at the base of the hills.

When spring appears, a superabundant blossoming envelops the dark trunks and covers over the newly emerging grass and forgotten ground so that, at the height of three meters off the ground, the universe levitates with pink, white isabella and cream, sweet and tender colors under a pastel sky; under the drowned firmament, the high yields, the low goes to earth; invisible and hidden, the background vanishes in the damp light; nothing more remains of the world than a floral intermediary. The angelic lightness of this hanging garden, whose ascension lasts many days, taught me serene beauty as a child. I confess to having never found again, in my travels later, the humble ecstasy of my springtime plain until a beginning of the year surprised me, in the midst of ecstatic friends, among the celestial blossoming of pale pink plum trees, camellias and red peach trees, wisterias of violet or mauve, white cherry trees, multicolored azaleas ... all in levitation on the islands of Japan.

Even though we were born on the two respective sides of the boreal Earth, the flowers among the April branchlets nevertheless bring us together and taught, naturally, two peoples that beauty rises up, interlaced with the foliage, between the clouds and the plowed fields, in the wind, and that our common soul – tiny, subtle, fine, imponderable, ethereal, soaring – accompanies it in its flight. Other to each other, the same season, of gradated hues, gathers us together and perhaps renders us identical.

Here, then, to get us under way, are two bouquets in a free style, as only the Japanese know how to compose.

### *Between far and near, a white space*

It sometimes happens then, to take this example, that the path seems straight between France and Japan. Quick and easy when it translates the colored palette of a bouquet into a similar chromaticism, the passage nonetheless conceals a subtlety.

Which is this: when a courageous swimmer crosses a wide river or a wind-tossed strait, the itinerary of his journey divides into three parts. As long as he keeps the shore he departed from in view or sights the shore he is to arrive at, he still inhabits his home of origin or already inhabits the goal of his desire; in other words: French, here, or Japanese, there. But, towards the dead center of the journey, a moment comes, one that is decisive and full of emotion, where, equally distant from both shores, during the more or less lengthy crossing of a large white or neutral band, he is still neither the one nor the other and becomes perhaps, already, both the one and the other. Disquieted, suspended, as if in equilibrium in his movement, he reconnoiters an unexplored space, one absent from all maps and not described by any atlas or traveler.

His good will to translate passes through the crossfading of the transition, which is designated by the preposition *between*, moves along an axis or plunges into a strange vestibule, around which the differences of the world must turn. And since each of these differences pours its tint into this

undifferentiated center through which everyone passes in order to reach everyone, it adds them all up into a pale transparency, since white contains, in sum and in reality, all the colors of the rainbow: this incandescence renders it invisible.

In this mixed and neutral corridor, does the passer or crosser blend within himself, suddenly becoming half-caste or neutral, two natures, two languages, two sets of gestures to the point of dissolving and losing himself in it? If his life made him wander in a good many arms of the sea, didn't his body and his mind learn and mix so many diverse cultures that he achieved, within him and on him, the immaculate whiteness of this place itself?

This translucent or neutral terrain, this whiteness between two multicolored bouquets, experienced by all of us, blindly, in our work when we devote our lives and good wills to exchanges, messages and relations – how does it happen that no anthropologist or geographer, and still less theorist of communication, has ever confided, in their books or their maps, that they crossed or reconnoitered such a place, at least as a propylaeum of their initiation?

Isn't it precisely this space of transparent and virtual passages, so archaically known to wanderers and as immemorial as the desert crossed before any discovery, that we populate with our networks and that we inhabit when we speak from one end of the world to the other?

### *The designs or patterns of fashion*

A new difficulty: we often suffer the banal impossibility of translating into one language the particular usages of another country or of another language via a direct path: the road doesn't always run straight, via the same chromatic range, from springtime to springtime or from a plum tree to a grafting. So the passage or the exchange must discover paradoxical or roundabout paths, corridors whose oblique traversal doesn't always follow the exact identity of things. Being unable to compare a parallel, which doesn't exist, we attempt an incomparable intersecting. So, the other illuminates the same, or the distant illuminates the near.

Astonishment! The magnificent *vair*<sup>5</sup> of kimonos multiply deployed on androgynous bodies with ceruse-whitened faces recently gave me such a violent pleasure of the senses and lifted my soul to such a startling elevation that it suddenly made me understand, in a way that couldn't be predicted, the splendors of the Catholic liturgy I found so complicated in my childhood: the celebrant would put on chasubles, dalmatics, stoles, maniples, surplices, albs, amicts ... (an infinity of accessories with a leafy vocabulary designating costumes of variable forms and colors) according to the time of the feasts and the holy days, following purple penance for sins committed, red joy, white and gold triumph, the black of funeral mourning and green hope.

According to the men and the women, the latter being either single or married, following the time, age and season, feasts and ceremonies or everyday domestic life, morning or evening, kimonos likewise change form, size, material, accessories, colors and impressions in such a kaleidoscopic, sensory and linguistic explosion that the dazzling effect, untranslatable, it provides causes the foreigner, who can only repeat the same terms or mimic gestures, to be lost. Into what words, absent from his language, would they be translated?

In order to understand, then, let's change, even in our own home, horizons and places, and pass from the woman to the priest or from the city to the church: so a strange similarity appears, the same varied range of costumes deployed in a similar manner according to the time of the year or the time of the season, according to the circumstances, the intentions and the sentiments, familiar welcome or

<sup>5</sup> To my knowledge, *vair* is not used for kimonos. Serres is using the word in its etymological sense of diverse, varied or variegated, the Latin *varius*.

formal respect, joy or mourning. So the wrong direction, intersecting, brings forth more truth.

— ‘How barbarously stupid you must be’, a double, to my right, told me then, ‘to have waited so long to expatriate yourself so far to discover, with eyes open, a hundred wonders you didn’t understand up close or, finding them to be ridiculous, ferociously criticized!’

— ‘Pretentious idiot’, retorted, close beside me, to my left, a critical and intelligent imaginary twin, ‘without your childhood in the choir, among the organs and fumes of incense, would you have ever felt the mystical bedazzlement that emanated from the kimonos?’

No, the same illuminates the other, and the near illuminates the distant!

### *An interchange on the road atlas*

So let’s leave the straight path: when we want to change direction on the freeway, we exit via the interchange. Shaped like a clover with several leaves, like the curve of a racket, like an interlacing of knotted-together threads, its rose curves make our heads spin, so that, without road signs, we would lose our initial route without finding the one we wanted to take. Do you want to take a left? Go to the right! I’ve just called this going the wrong way or the wrong direction. Things are often like this in mathematics, where, to obtain an invariant, one must seek subtle and often intersecting variations in various places: then – wonder of wonders – the sum of twists varied in their details comes upon a straight and global constancy.

Both immobile and rotating, does the merry-go-round or carousel of the interchange have no direction, or does it have every direction? In it and through it, we choose one direction among other possibilities. Just a moment ago, white added up all the colors, between two bouquets; here, precisely a bouquet of curves appears, seen up close, in the same place, where one can, in turning, set off for other directions: all of them? Excellently named, does the interchange turn [*verse*] towards the universal?<sup>6</sup>

### *Tools of exchange or of passage*

Already doubly strange, this passage of exchange, and difficult to map! How do we go from the same to the other or from the other to the same; how do we prolong the roads of our travels into the distance? By crossing through a middle: the white section in the axis of water now becomes a turnstile where the direction twists and turns; a ruse imposes the detour, a curve, a deviation, which at first appear to give rise to confusion here by straddling the profane and the sacred, but which, in truth, the deep truth cannot do without. Here distances and differences are measured exactly at the same time as a road uniting them is drawn, a road which is sometimes looped.

How are we to map these unknown seas that bring the inhabited lands closer together and distance them, and whose representation doesn’t figure on any map? Let’s give this band, this white space, the utopic third place between, here, Japan and, yonder, France, the interchange or vestibule between all difference, the immense name ‘universe’, a universal term that means that all things turn [*versent*] or roll around a unity, whose transparent secret threads its way and insinuates itself across their differentiations.

Who are we when we pass onto this interchange or cloverleaf? Living interchanges, bouquets of direction. Like message-carrying angels, we should all have to dress in white kimonos – the universal conjunction of various colors.

<sup>6</sup> Interchange = *échangeur*, which translates literally as exchanger. The English word has this sense as well, but not as strongly. I will translate the term as ‘interchange’ when the context involves roads, and ‘exchanger’ when it is used more broadly. Turn = *verse*, which normally means to pour, but Serres is using it in its etymological sense.

### *A third man in the third place*

In this median space, in fact, the ghost of a third man rises, transparent, invisible, connecting the exchange between the same and the other, shortening the passage between the near and the distant, whose intersected or melted body links the opposed extremities of differences or the similar transitions of identities. Better than describing or defining him, I want to become him, this traveler who explores and reconnoiters, between two spaces distant from each other, this third place.

I admire the polychromatism of the Japanese springs from having lived plunged in those, less sumptuous, of my childhood; I understand the sweetness of the valley of my birth from having loved Japanese springs; in my body, now, two seasons mix, whose cream and pink colors display heads to the east and tails to the west like a single gold coin: my flesh and my mind inhabit the transmuted metal of this doubly struck coin. In turning the kimono or chasuble back to front or inside out, I no longer know which side I show and which other one I conceal, since, through that modesty or shame which, unlike many peoples, we share, the hidden lining sometimes harbors more luxuriousness and beauty than the visible side.

### *Towards the universe*

These singular and visible images of fabrics and flowers serve as an access ramp to a virtual and invisible universe. Between the same and the other, the far and the near – we experience it in our transportation – a universal third place exists: an immense transparent *world* in which exchanges circulate, an axis or white space in which distance suppresses its gaps through connection, in which movements appear to be at rest, a knot of threads, an interchange of roads, a hesitation before translating, a suspended moment of phase change, a mixture, an alloy, a crossbreeding ... This world forges metal, weaves cloth, feeds the flesh of humanity in its entirety and its essence, as if *humankind* in general was situated at the intersection of all cultures, between all human beings. I'm not imagining this world; I have truly passed through its white volume. I haven't dreamed up this humanity; its omnivalence has long been melted into me, and now are its open lips and its anxious mouth gasping towards this breath whose spirit would dictate a universal *language* to us? Having been left in silence until now, or in the rare cries of heartrending music, would this universal language describe the itinerary that precedes the encounter between two languages? What absent and white culture does the separation and then the contact between two chromatic cultures construct?

*Where*, then, does the single and essential spring reign, of which the double season, Aquitainian and Japanese, would only paint two versions? What unimaginable seamstress works and tailors, in what small workshop, what magical and translucent dress whose tacking and drape chasubles and kimonos, from here and from there, would cause to fall or to float? In this utopian place, what impossible to find artist would speak the unknown language suitable for writing this atlas?

### *The universal on the map of the park of Katsura*

Astonishment and wonder: I have found this place; let's visit it together before hearing, in its musical silence, the white language of exchange. Yes, the utopia is a park, and here is its map.

Imperceptibly carved, the inanimate stones of a possible building are scattered throughout the garden, where each house is built from live wood. The habitations don't separate an outside and an inside, and the park never sunders plants and constructions; the wood of the tree forms a hollow that the human inhabits, a trunk or lodging. The concept of architecture disappears, having dissolved into

nature, whose concept melts into architecture. As little defined as the room itself, the window draws neither a void in a solid nor a hole in a dense thing, neither open nor shut: closed, it fades away, becoming wall; when it opens, it becomes landscape, having vanished once again; a thousand windows proceed from a continuous spectrum of open or closed, a fuzzy set, sliding on grooves.

Through such a continuum, the exterior is not distinguished from the interior; nothing is cut up or sliced up: neither art into parts, nor things into elements. Mansart and Le Nôtre, the landscape gardener and the mason, don't enter into face to face rivalry, distanced from each other like species, whether physical, animal or scholastic. The house melts into the garden and the park into the habitat, two places to repose. In sum, the architecture dissolves into the flux of intermixed arts. Having entered the house starting from the garden door, I still inhabit it after having left through the threshold of the dwelling: the landscape architect, over yonder, teaches me the meaning of the word 'door', at home.

Westerners claim: *this* symbolizes fire, the sky or the earth, *that* signifies the wind or the forces of reproduction. To signify or symbolize requires a transportation or a translation, some passage from the flower to the soul or from the stone to the cloud, and therefore requires, firstly, that flowers or wind exist, I mean lilacs separated from trade winds. We don't appear to see that symbols presuppose a divorce between the same and the other, the distant and the near, and that signs can only be given from one riverbank to the rival shore across a gap or over it.

Nothing, here, symbolizes anything, has any meaning or gives any sign, since objects like concepts are immersed in the universal of nuance and because no thing is related to any other thing; separated from both of these unrelated things, I lose my usual means of thinking. One half of my head suddenly offloads this job on to the other, always virgin, half – a manner of speaking still within the lexicon of the West. Here and today, it appears to me that the two parts of my head, of my brain, of my thought, of my language, of my signs, of my relation to the things themselves in the diluvial bath of language, are soldered together in the middle, and that I find this axial place in the park itself, a comfortable space for the thwarted left-hander that I am, tranquil, peaceful, as if liberated from the crushing obligation to name. I stroll in my thought, I walk in my own body, I inhabit the space of my habits. Am I, finally, at home, here, in Katsura?

*A reduced model: the pendulum* [balancier]

Surprise again: I've found the artist I evoked as well. The essential character, if I can put it thus, that, seized by a dazzling intuition, Paul Claudel introduced into the second version of *The Exchange*, a play whose title has inspired us, is a swing [*balançoire*] that remains on the stage throughout the three acts.<sup>7</sup>

Since I'm looking for operators of exchange, universal tools whose construction and form offer passage or allow transformation, here is the interchange or exchanger in a simplified form: when you use a swing, you pass from descent to ascent or from having your face towards the cut grass to a view of the firmament, from front to back or from west to east. You vary, of course, and fly to the point of dizziness. But since the simple machine returns you, conversely, to the position you had left a little earlier, it also represents a balance or a set of scales, stable throughout its variation, therefore, justice in change.

Around the swing, in Claudel's play, a man leaves his wife to take another woman that another man had left in order to buy or pay for the first woman. In the middle of this intersected and melted ballet presides this fixed table of mobile change, which mimics, counts, measures and, finally, nullifies

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<sup>7</sup> Both *balancier* [pendulum] and *balançoire* [swing] derive from the French verb *balancer*, to swing.

the blows. Its various movements tend towards white immobility. As the actors, protagonists or stories change, whether one laughs or cries, this pendulum remains obviously in place since it marks the time of the dismal schemes and of their diversity: variable through our intrigues, it remains invariant through our singular temptations and our unceasing tribulations. Turning [*versant*] around the single bar that reverses it, can it be described as universal?

*An immense model: the planisphere*<sup>8</sup>

The terraqueous universe – at one end of which night is falling over the extremity of the western peninsula of Eurasia, while, on the other of its faces, the sun is rising over its own empire – turns and rolls, just as stable as a rickety swing attached to an axis. Ever since we have been playing the theater of history, it has flown from east to west, changing and unchanged, a white earth on which is inscribed, in the flying dust, the very set of the planispheres of all our passages or exchanges, which are bounded by death and by the equilibrium of all reimbursements: the universal scales of natural justice.

Swept along on this perpetual swing by age, being mercilessly substitutable, we find ourselves here, mobile and fixed, standing on this swing, which is multicolored with the details of our differences, whose sum makes the Earth that beats the minutes like our hearts transparent. The immense model of the global sphere corresponds to this small electrocardiogram. It will stop one day just like the organ of courage in the thorax, both returned to the equilibrium of justice.

No matter how differently various languages may discourse, the same cordial swing times the lives of men, and the same Earth cadences their sojourn.

*Two universal languages*

A diagram of a beating pulse, a swing, a map of a highway interchange, a map of a park or a planisphere of the world ... according to whether one is distancing oneself from or coming closer to the white axis or place, that universal intermediary of exchanges and passages, whose incandescent virtuality often depends only on the good wills that bring its infinitely precious rarity to birth – the evils of the world would have its fragile emergence, at the center of our differences, abort most of the time in the face of the raging violence.

Bouquets or the finery of festivals are rarely exchanged in international relations; such talks don't often occur in meticulously ornate paradises. The neutral garden here frequently changes into the battlefield. Combat, competition, victory and the domination of the strongest prevail over dialogue, theft over exchange, injury over gifts.

Who will win? Intensely fascinating to the public, to journalists, to historians and chroniclers of the Olympic games, the spectacular daily news, so repetitively old – as well as the gloomy history of our destiny – is composed of answers to this question.

We understand why this white garden or these gradated palettes of cloth or of spring flowers vanish so quickly, the way the garden of paradise was once lost, because violence reduces wisdom to silence. Perhaps the beneficent and neutral terrain of exchange and agreement remains invisible on the geographical atlas because we like nothing but killing in order to win, so that history will continue.

So who will win? Wisdom answers that each side, in its time, won out, dominates or will reign: the East, the West, the South or the North. Dominance is the most equally shared thing in the world, as mobile and stable as our swing, as unitary as the space of the Earth. Do you know a single group that, in its time, was never the master of the world, or is or will become so? In truth, nothing could be more

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<sup>8</sup> 'Planisphere' originally referred to a map projection of the spherical earth onto a plane.

common. Perennial and monotonous, the struggles for this dominance, which is individually unstable and fleeting, incessantly multiply human misfortune. For millennia, human culture has been devoted, *universally*, to crying over this absurd, bloody and pathetic slaughter, the way a mother laments over the broken body of a son killed in war.

Who will win? In the final reckoning, the one and the other, therefore neither the one nor the other, in sum. Through the addition of the same and its similar, the final balance sheet of violent competition returns to an equal balance of exchange, very exactly to its even point, and defines, again, the neutral, the white, the terrain of agreement, the springtime garden of bouquets or of costumes, yes, that universal that we've buried in secret in the foundations of the world, alongside that corpse: equity.

### *Educational work*

If we only love struggle and competition, how can we create? To kill or to produce: choose; that is the question. So long sought after, the secret of creation boils down to the secret, so long sought after, of the universal. The two are discovered at the same time, right here. They can be read on the metronome of the swing, the metronome of the Earth itself, which beats white justice and the returned peace of exchange, through the equal and measured rhythm of its passages.

Whoever squabbles cannot create but repeats an archaic conduct whose roots are plunged in savage or animal behavior. And since he endlessly recommences the imitation of these multimillennial behaviors, he neither innovates nor discovers. Have you ever heard it said that an animal had invented? Produced by the struggle for life, it is limited to the struggle for life.

Passage and exchanges know two universal languages: the one, strong, easy as falling and repetitive, produces the chaotic noise of deadly violence; the other, weak, rare, difficult and unceasingly new, is devoted to cultural creation, which includes creation of oneself and of others, and therefore education, which produces, in its turn, the recreation of the world, and therefore prosperity. The strong one kills, the fragile one produces. Making newness be born ensues from the state of peace, humanity's only good news; promoting rarity ensues from the state of peace, that strange rarity in our history. Nothing could be more fertile than these miracles, uniting information and education [*formation*], in the work for our survival.

### *Sketch of a musical score*

In the face of the universal of violence, which is devoted to the greatest noise, audible always and everywhere, and which everyone seeks to hear, the universal of beauty, even weaker and quieter, has gently sung, it too, its little plaint, which is tenuous but sustained, it too, ever since the world has been fought. If I composed music, the universal language, I would need neither travel nor translator; I would have drawn, on the musical staff, the third country, a utopic and floral intermediary floating, vernal, between the two springtimes, Aquitainian and Japanese.

## 2. Local Space

## Being-There

What is life? I don't know. Where does it live? By inventing place, living beings answer this question.

### *Blueprint of a house*

One can imagine a house built for the good use, the comfort and the convenience of those who are going to live there. Things are laid out there and places are distributed in such a way that, for example, the bathroom isn't too far from the bedroom nor the kitchen too far from the dining room, while however the toilets remain isolated; in short, in such a way that everything remains within reach of rest and work; the chairs, close to table, and the dish cabinet, near the stove, nonetheless respect a few distances. The visitor speaks highly of the variety of rooms and of the layout that subtly combines useful distances with necessary contiguities.

Hence the definition of the architectural blueprint of residences as the set of circulations favoring the closest proximities while safeguarding such surrounding space: how agreeable to have everything at hand with no need for exhausting movement and to put only the least pleasing things at a distance! Let's, in addition, include the roof, the walls and the hedges, closed protective enclosures, but open enough to temper the climate, to heat or to cool, to allow food to enter and be cooked, and lastly, conversely, to expel the inevitable wastes or used waters. A house? Hearth and place.

This is a thermodynamic and informational system, energetically open, whose internal topology, rigorously drawn, describes the above-mentioned proximities and distances; so here is the blueprint of a house, for living, and who doesn't know that the term 'ecology' literally means the theory or study of the house of living beings? Of the site, of the niche, of the habitat ..., in all, of places propitious and proper to beings endowed with life.

Did they invent place in an inanimate world that only knew space?

### *Varied drawings of all places*

Traveling naturalists, such as Tournefort, Linnaeus, Jussieu, Humboldt, Audubon, Darwin ..., left their homes and departed, outside, to the Levant countries, to North and South America, around the globe – like Jean-Jacques Rousseau on the island of Saint-Pierre – to explore places: understand by this the concrete regions of the world, Alps, Andes, Lapland, Galapagos Islands; they went, as they say, on site or on the ground, beyond every border, in every climate and latitude, to study the local flora and fauna, their dispersion, their distribution, the singular mode of the division of species, or circulated to observe their distances and proximities. Already, with all these words, traveling offers up variations on place.

From such treks, occasionally heroic – Joseph de Jussieu stayed in Latin America for thirty-five years and Bonaparte's academic expedition in Egypt turned out badly –, these inquisitive explorers brought back animals, seeds or cuttings to implant in botanical gardens, zoos, herbariums, greenhouses, new and remarkable places in which indigenous or exogenous flora and fauna were collected, dead or

alive, capable of reproducing or incapable of doing so – let no one enter here that is not living –, according to more orderly divisions, other distances and different proximities. Sometimes an entire ocean in fact separates two neighboring plants there, where the most distant plants become neighbors.

Half-concrete and already half-abstract, both real and rational, these botanical or zoological places, which it's interesting to compare to the terrains and climates of origin, prepare the formal and rational drawing of a grid, a scale or a tree of classification, in which each species, in the plates, marks its entry, its level, its box or its leaf, that is to say, once more, its place, whether natural or artificial, and soon to be genealogical. One would think one was leafing through the atlas of living things.

In the past, one was advised to classify by proximate genus and specific difference, old technical terms that might be translated as: the distribution of species following certain distances and proximities. From the variations modeled on these two distances, long and short, the places of origin, the places of collection and lastly the places of classification are distinguished.

### *Local and global*

So the history of natural history sets out, over the centuries, a continual meditation, exact and varied, on the theme of place by ascending from concrete locality, traversed by the observer and lived by the observed, up to the space proper to a rational nomenclature. So the process of abstraction particular to such a knowledge moves from perceptible places, those that divide the face of the globe or those that are concentrated in capital cities, to properly virtual places, those that constitute the very space of the science of the living.

While the preceding holds for the scientists who take the living one by one so as to consider them according to their resemblances and who history called naturalists, as soon as scientific ecology began, more than a hundred years ago now, and even though it thinks, on the contrary, by means of interspecific sets and according to the interlacings of diversity, it did, however, take up analogous gestures and thoughts. Granted, the categories transform, but while pursuing, as before, the same stubborn meditation on the same stable theme: for 'system' says this knowledge, from the beginning, or 'biocenosis', 'ecosystem', 'biosphere', 'geosystem' or even, at times, 'landscape' – pluralist, relational, synoptic or holistic terms for the ancient notion of place and variable by size, integration or unity.

Consequently, the contents peculiar to this scientific ecology, taking up the same meditation on the same notion, successively list off: mountain, lake, island, new places, other cells that are variously unitary, new compartments, of course, but still variations on the stable theme of locality that elsewhere the same science calls, according to its needs, site, niche or habitat, or even nest, aerie or lair, litter, den or haunt; that depends on the local assemblages or on their circumstantial divisions and on the rhythm of life of the species or of the individuals. Continuous, irresistible, the same variation on a theme, as if some topical singularity was constantly met with, like an invariant or a universal of the science of the living.

Life resides, inhabits, rests, lodges, cannot do without place. One might say that life draws and codes its definition; by this last word, I mean what its etymology says: the assignation of bounds or borders, open or closed, which I shall discuss below. So tell me where you live, and I'll tell you who you are: this thwarts my own introduction!

### *Home*<sup>9</sup>

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<sup>9</sup> Home = *chez*, a preposition that modifies nouns or pronouns in French to indicate the place of residence of these substantives. Strictly speaking, it has no equivalent in English, but I have used 'home' or 'at x's home' as the least unsatisfactory options.

In the question, *where do you live?*, the verb ‘to live’ means to sojourn. The living being puts itself here or there, not at a point, geometrical or abstract, drowned or nondescript within a smooth space, but within the topology of a paving stone or of a ball, of a box or of a house, of a sack, whose enclosure gives it some private isolation, optimized distances, all the circumstances of a neighborhood. Surrounded by a membrane, the cell doesn’t so much live in itself and for itself as at its home. Without membrane, there can be no life: a universal theorem in biology.

Better than the word ‘house’, which is a noun, the French preposition *chez* admirably expresses this state of affairs. In the French languages, it never commands inanimate things, but always a proper name: *chez Swann* or at Swann’s home, not *chez une pierre* or at a stone’s home. Even though matter is extended across space, even though animals explore the vicinity, trees or plants, immobile, sometimes vertical, define place better. Laws of matter are sometimes prolonged towards the universal, whereas life codes, locally, a fold or a place.

Flora and Pomona occupy it; Fauns already travel over a greater area.<sup>10</sup> The first two grow, prolong, advance without ever leaving. The latter run, pass by, leap, leave, return. Hestia, the woman, remains floral, while Hermes, the male, becomes animate; a metamorphosis of young girls into flowers and of boys into centaurs. Plant: being-there, a sedentary model, the stay-at-home ideal. Animal: a model of wandering, sometimes migrating over great distances, already a traveler, but one that can never leave its sack of skin, of feathers, of chitin or of scales ... enveloped in its folds.

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#### *First interlude: inhabiting the folds of the sack*

For everything to remain simple, said simplicity must be smooth as silk, without any folds [*pli*]. Yet, the word ‘simplicity’ does include a *pli* or fold. What does this mean?

Here are ten boxes of variable shapes and sizes; masons, logicians or biologists, we often play, as during our childhood, at putting small boxes into big ones, optimizing placement, order and position: in the easiest case, it’s a matter of cubes or Russian dolls. For a given set, there can be two or three solutions to the problem of putting boxes into boxes or of implication, but more frequently there is only one, precisely the simplest. Logical and geometrical, this rational work only gives one meaning to the preposition *in*. This is how the pilot in his ship or the baron in his salon, in his mansion, in Guérande, Brittany, France, behaves.

Let there now be a collection of bags and pouches, of nets, made from burlap, rubber, cloth or some other supple matter. However variable their shape and their size may appear, any or almost any among them might contain, if I go about it properly, the set of the others. For this heap, there are as many solutions as one might like to the question of putting sacks into sacks, that is to say, of implication.

Can you guess what the box contains? The minimal reply is: one or several smaller boxes, in a decreasing series. But what is enveloped by this large puffy blue ball or by this volume that’s swollen, somber or saggy, heavy, light? There is no reasonable response ... Why do you always say black box and never sack? When you say implication, is it a question of putting boxes into boxes or sacks into sacks?

#### *Tissues*

Stones that fall into water induce temporary ripples whose propagation resembles the trembling

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<sup>10</sup> Fauns = *les Faunes*, which in the feminine means fauna, but in the masculine, as in this passage, means fauns.

of a veil or a cloak. These, then, are solids and liquids, whose consistency and fluctuations gave regular or successive models of systematicity to philosophy and the sciences: stable or fuzzy, rigorous or confused are still said. I had called this, in the past, the metaphorical material of philosophers: solid, liquid, air, in decreasing order. Willingly or not, each thinker shows his preference. From Auguste Comte to Bergson, for example, one passes from rock to flow, and the latter suggested that our intelligence specializes in solids.

Yet, between the hardness said to be rigorous of crystal, geometrically ordered, and the fluidity of soft and slippery molecules, there exists an intermediate material left by tradition to the gynaeceum, and therefore little regarded by philosophers, except for Lucretius perhaps: veil, cloth, tissue, rag, fabric, the goat or lamb skin called parchment, the leather flayed from a skinned calf called vellum, fragile and supple paper, wools or silks, all of them varieties that are flat or warped in space, envelopes for the body or mediums for writing, capable of fluctuating like a curtain, neither liquid nor solid, of course, but participating in both states. Pliable, tearable, stretchable ... topological.

Immobile or ephemeral, bumps and cracks on marble or ripples on water don't behave in space or in time like the folds of a drape, which floats but temporarily stays where it is. As though flesh, hard and soft, resistant and pliable, hesitated between fluid and solid, the scientists of living beings intelligently use the word: tissue.

#### *Inhabiting the folds: the architect's scale model*

The wall I am walking along ends at the vertical edge, then at the second edge with regard to thickness and lastly at the third one at the top of its crown; seven or eight moldings are outlined on it in relief; the window opens in its stones, with its angles, its arches and its hinges ... Holes, grooves, projections, edges and axes of all kinds, these are folds, well-defined for solids, which give them the form by which we perceive them or whose breadth sometimes allows us to inhabit their curvature. This roof protects me with its synclinal as does this vault with its rounded arch. When you build cubes, polyhedrons, cylinders or cones with cardboard panels, you are a model maker or a topologist, and, in both cases, you learn that a volume appears through folding [*pliure*], implicated by its edges, as it were. You will no longer inhabit your house as before ... nor the world, its valleys and its mountains, nor the wrinkles or the sagging of the skin.

#### *Space through multiplication, place through implication*

And if, perchance, in the intervals between these works and such thoughts, you play absentmindedly at folding a piece of paper several times over itself, you will see, astounded, that it doesn't require many operations to reach, rapidly, a thickness that exceeds the distance between the Earth and the Moon, something Cyrano de Bergerac, who knew everything, assuredly didn't know. To fill in the gap from the very small to the immense, the gesture of application works better than many others. Granted, the fold [*pli*] implicates volume and begins to construct place, but, through multiplication or multiplicity, its folding continues to the point of filling space.

In implication – I'm talking about the action of folding rather than the ordinary logical content of the operation – resides the secret of gigantism and of miniaturization, of the enormous quantity of information hidden in the well of a minuscule place or gushing forth from it: two meters of DNA disappear in a cell more cramped than the head of a pin, and two lungs, unfolded, would spread further than the total surface of an administrative department of the French Alps. Anyone who has seen, dazzled, an aurora borealis, can estimate the immensity of the sky by the number and breadth of the folds of magnetic veils unfurled upon it.

Towards the small or in the big, the fold allows passing from place to space.

*Where are we to be? Who are we to be? Being-there or in the folds*

On either side of the window, under a pelmet forming a blue banner, floats a translucent and light curtain net surrounded by heavy ornate curtains whose drape falls and bulges; on the wall with the moldings, at the picture rail which is coming unstuck in places, the wallpaper has blistered; and the fake gray leather of the old divan, wrinkled, against the wall, has cracked into crows-feet, all puckering with tissue, but continues to do so and without moving: the books on the shelf, whose format depends on the manner of folding, the repeated piping of the heater, the linen, the cotton, the wool with which, shivering, I envelop myself, here again, and however solid or hazy the material of their mediums may appear, are folds; I see only them and touch only them; better, I live only in them.

Plato never stopped harping on about the idea of bed. I have found this idea, here it is: through sheets, covers and bordered box spring mattresses, a set of folds into which I enjoy slipping every evening. I dissolve and curl up in the pocket of these leaves. Did you know that the French word *sein* [womb], in which everyone likes to live, means fold, it too?

Where am I? Who am I? Is this the same question, one only requiring an answer regarding the there? I live only in folds, I am only folds. It is even surprising that embryology has borrowed so little from topology, its mother or sister science! For, starting from the early stages of my embryonic formation, *morula*, *blastula*, *gastrula*, the vague and precise germs of human young, what is rightly called tissue is folded – once, a hundred times, a million times, those times that in other languages a few neighbors still call folds – connected, torn apart, pierced, invaginated, as if handled by a topologist, so as to end up forming volume and mass, full and empty, the interval of flesh between the tiny cell and the world environment, to which my name has been given and whose hand presently, folded over itself, is drawing loops and bows on the page, knots or folds that signify.

On balance, here is the inanimate, either given or manufactured: the solid, the woven; but the following are also the inanimate: the fluid, the liquid, the gaseous, through which squalls and light breezes pass, and over which or in which they are effaced by turbulence. Here is the living: tissues, young and aged, bent, fused together, wrinkled, white with scars; but here are the aesthetic and the significative: moldings, foliage, Greek keys, arabesques ...

*Place's form*

So on balance: what is a fold? A germ of form. But, again, what is a germ if not a set of folds? The fold is the element of form, the atom of form, yes, its *clinamen*. But what, in general, is a form? Answer: the smooth plus folds. How, then, does one describe the smooth?

Alas, it boils down to point of view. From here, without moving, the wall, the window, the curtain sometimes and the couch, and even, I swear, my own skin when considered without my glasses, appear level, even, regular; they look like geometrical varieties, sanded, coated, plastered. Get a bit closer, a lot closer, extremely close, put on your glasses, use a microscope, and the evenness will disappear, giving way to tiny perceptions of the granular; according to the distance, the light, the delicacy of touch, the smooth fades away before the multiplicity of folds. A chaotic wave of germs is waiting. Leibniz would say: there is nothing that is polished strictly speaking. Behind the illusions of geometry, infinitesimal calculus arises, which reveals a world full of vanishing entities. Is the definition of form only going to preserve folds?

How, then, can the smooth be defined or, rather, constructed? Through a Taylor series, whose infinite series aligns as many tiered orders of differentials as one could want. So we need an infinity of

planers and grindstones, rasps and sanders, steel wool, emery cloth, rottenstone, sand, abrasives, sand paper, not forgetting to finish with very soft chamois skins, all of this in all sizes, from the coarsest and most aggressive to the very fine, so as to produce, at the limit, a small smooth path. Descartes never suspected that one would need infinity in order to go straight. The Taylor series, from the 1700s, works infinitely on the actually infinite folds of the Koch curve, which is fractal, chaotic, real, contemporary. You will achieve the polished on the rigorous condition of paying the infinite price of this Sisyphean labor for it.

This is what was discovered by the Baroque 17<sup>th</sup> century and Leibniz and his calculus: the infinitesimal germ of form, the topological atom that is the fold, alongside the algebraic or set element atom; from this moment and from this philosopher on, everything is folds, and Gilles Deleuze is right to say this of Leibniz.

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*Final interlude: who are we to be? Animal or human*

A featherless biped: after a thousand valiant and erudite disputes, the disciples of Plato had just perfected this fine, famous and stupid definition of humankind. At that moment, passing by, a sort of bum threw a rooster that he had just plucked into the middle of the academic circle, shouting: here is Plato's human.

Everything attests to the fact that Diogenes the Cynic, the sole indigent of philosophy, passionately sought that humanity intellectuals failed to discover through their logical debates: hence his lantern lit in broad daylight in the public square of Athens, but especially his life, his gestures and his destitution. Far from examining speculatively or linguistically how things are with humankind, he lived, in his body and his time, as the incarnation of humankind.

Do you want to define a thing or someone? Then patiently remove what does not properly belong to it or him, the circumstance or modality that hides or covers its or his essence. The fact that someone drives around in a luxurious coach, for example, wears a crown or haunts a palace has nothing to do with his human reality, whereas he walks, eats and dies like everyone else. The true definition demands a reciprocal property, and that means that it belongs to humankind and only belongs to humankind. I am using ambiguous words: belongingness and property have both a possessive and a logical sense. The entire existence of Diogenes the Cynic unfolds within this double value.

*Once again, the folds of the cloak*

When philosophers like Locke or Marx analyze property, they always discourse by maximizing it towards accumulation and wealth, stock and flow, circulation and capital. This immense mass misleads us. Quite the contrary, poverty is incapable of producing illusions because it goes in the same direction as logic. The one like the other removes mode and circumstance, crown and coach, so as to let the naked essence be seen. The best of advisers in philosophy, destitution doesn't get one lost in the midst of attributes. Diogenes reasons about humankind better than Plato because he puts experience into thought, or rather, because he intermingles both of them and leads them in the same direction. His entire life is an apologue. Plato thinks under a metaphorical sun; Diogenes lives in the heat of midday and the cold of the Greek night.

And therefore slices, in the midst of objects as well as among human relationships, in order to eliminate stakes, fetishes and merchandise; throws away his bowl, removes his cloak, mocks Alexander the Great. Once more: what is humankind? In other words: find its property. In other words again: what property does it retain when it has thrown away all externally attributed properties? Diogenes'

unwritten, unsaid, non-logical but intensely lived reply: the barrel. The destitute one keeps this small niche, where he lives and sleeps. His barrel belongs to him and, at night, spatially and almost mathematically, he belongs to his barrel, as an element of this set.

Poverty, indigence, destitution in a word, like doubt, gradually eliminate everything. What's left once everything is lost? This minuscule habitat. The Cynic's ineliminable property remains the dog house, his habitat, his possession and his name ... a barrel-vault whose curve protects him with its fold. In no legend does he lose it. Consequently and through its invariance, this barrel concerns the definition of humankind, the final limit, the ultimate border where its essence lies. Plucking the chicken of its natural habit of feathers, its sole and logical property: this, then, is Plato's blunder.<sup>11</sup>

The philosophy of poverty speaks the truth. The mysticism of poverty, a millennium after this philosophy, repeats the same message. Having vowed to be a beggar, Saint Francis of Assisi disrobes and walks, barefoot, through the divine countryside of Umbria, where, having become a troubadour again, he sings of the sun or of the rain and speaks to the birds or to the wolf. His life, logic and mystical experience, all three, plane down the inessential. When he has left everything behind, what will remain to the poor man of Assisi? The *portiuncula*. A minuscule habitat, the smallest portion, an almost null attribute, the most derisory attribution. An ineliminable residual niche and sole property.

And what belongs to the wanderer of the Gospels? Like Diogenes, son of God, and destitute before Francis, born in a stable, a kind of barrel or *portiuncula*, open to the winds and to the cold, Jesus Christ travels the roads, with neither house nor stone to rest his head. No text names his habitat. He teaches that one must lose everything if one wants to save everything. Nobody could find a property that might be his. Yet during his agony, at the foot of the cross, the soldiers who keep watch over him play dice to appropriate his seamless robe. One might guess that during cool nights, on the heights of Galilee or after the Sermon on the Mount, he curled up inside it as in a barrel.

One thing still remains to this trinity of poor men: the smallest possible niche. There are no destitute people on all the planet that go about, like animals, completely naked. A barrel, a knitted sweater, a tatter or a rag – ask our Arab-speaking friends what cloak a *Sufi* wears – all of them preserve this minimum that never has any relation to others, that can't become fetish, stake or merchandise, inalienable. However exiguous one might conceive it to be, this residual concrete property, vital, is the first or the last logical property, belonging to which connects whoever possesses it to the human race. And, is suited to life, it too a fold of tissue. What is life, who are you? This element of habitat.

The word 'property' is derived from priority. Should one think about the first occupant in order to determine the origin of property, one will turn in a circle of tautology and violence without resolving anything. So it would be better to seek the first object, that private envelope which is in the closest proximity to the body, the cloak, robe or blanket, whose folds envelop and define. If the right to property, a right which is natural for once or at least universal since no totally naked man is known of, attributes the habit to whoever inhabits it, a mobile tissue and close to the body, it doesn't give rise to inequality, quite the contrary, since it belongs to those who have nothing, the most destitute.

### *Where does the political animal live?*

Every parrot goes around mindlessly repeating the words of Aristotle that we human beings are essentially political animals. For how long? Truthfully speaking, hours come during which we withdraw into our folds or our shells to take care of our bodies, and night draws a veil over our extreme modesties under the cover of which we give ourselves over to a few private liberties. What would we

<sup>11</sup> Habit = *habit*, which means clothing. I have made use of the much more specific 'habit' to retain the word play between *habitat*, *inhabiter* [to inhabit] and *habit* in this section.

be without rest? If our existence exhibited itself publicly, conversely, and in real time, understood by this that all acts, without any exception, would unfold under the collective's bright light – here it is, the truly political animal! – then, in less than three days, we would fall into the state of bums.

There are no ants, bees or termites that live as bums, all of them animals that normally survive political and public life, a social integral. The most destitute of poor people always keep a minimally private object in their possession, one suitable for saving a few instants of self-containment. This, whether rag or niche, is the residual property of humans and the property that defines them: the smallest margin of the private, a remainder or vestige, a residue, the only difference.

We would be destroyed by a totally public life, killed by the publicity. Extreme bums, Diogenes, Saint Francis and Jesus Christ experience in and through their existence, without speech, writing or theory, the strange connection between property in the logical sense and the property that equates to possession. As a result, they make the minimum of having in being and the minimum of the object in the subject wonderfully apparent. However public, political and offered up these model lives may appear, the fact remains that, at certain moments, three bodies rolled themselves up in a seamless tunic or a round barrel – the smallest portion or specific difference – whose folded enclosure could extinguish the acidic fires of the collective, like a soft eyelid, allowing them to survive the publicity. Limit vagabonds, the three destitute ones can't give up a particular thing, *the sole object*, closely resembling the subject body, so as to safeguard it when all things have been subtracted or abstracted from it. A primordial place: of survival, of right, of knowledge, logical and ontological.

Even more political than the most powerful of potentates, here is the destitute one, always in public. The only truly universal human, the bum, destitute, can be defined, at the limit, as the only political animal: a triumph of sociology. No, humankind can't live without shelter, that is to say, publicly, without a private life. Man isn't a political animal: when one reduces him to that, he becomes a dog again – this is the outraged shout of Diogenes, a cynic.

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### *Map of the stations of time*

This long description of the places, essence and habitats of living beings and of humans might give the impression that a topography (strictly spatial, even if, at times, its unity becomes complex or abstract) – a perceptible or virtual place, a simple or complicated house, a division in detail or an intertwined set, large and copious, of diverse species – would suffice to describe that which is alive.<sup>12</sup>

No: the topography first enters into time, therefore into movement, then it complexifies itself by integrating the various dimensions, including force. For as soon as the tree of classification, which we left just now to follow the fold, becomes genealogical, or as soon as logically divided spaces plunge into the duration of evolution, dynamic schemas immediately impose a theory of movement, and, first and foremost, a statics of systems, of stages in an evolution or of equilibria of forces; how does one describe stabilities among changes, invariants across variations, attractors, summits or apexes? Yes, the notion of place has returned here, even in time: invariance, extremum, optimum and climax constitute local stances or stops.

Well-named, ecology endlessly describes a topology of the house, or more exactly of the places, stable and labile, in which living beings plunged into duration pass and rest. The paths that connect them are spatial or temporal, static and dynamic.

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<sup>12</sup> Topography = *une topique*. Both terms derive from a Greek word meaning place. 'Topography' is being used in the sense of a representation of the component parts of a structured entity.

### *The antiquity of this topography of living beings*

From classical languages to modern sciences, the path remains legible. Can one, in fact, consider place or *locus* in general – the archaic and pagan *pagus*, cultivated plots whose seams draw on the earth the landscape plowed, in a random checkerboard, by modern and primitive farmers; the ancient *hortus*, a farmyard or a courtyard, a cut-out forming the private, family, domestic or public garden; the Platonic *chôra*, which the *Timaeus* translates, with difficulty, as place, imprint-recipient, the wax on which sense is engraved, womb, excipient, receptacle, wet-nurse ... and in which we, more easily, recognize a topological space – to be the point of accumulation towards which all these replies to the questions of place would tend (which are patiently enumerated by every knowledge and every technology of the living, whether this technology be specific or collective, from the origins buried in the memory of our languages, Latin and Greek, all the way up to the most refined of our contemporary sophistications), and to be, definitively, one of the secrets of life, which exerts itself without respite to find, fold, define, cut out, form its place ..., a natural one? A feminine, maternal, womb-like one? Being first, matter itself primarily means or is called mother.

Our atlas begins, quite naturally, by describing the plans or maps of these archaic habitats, the elements of their form and the first living beings that haunted them, since they invented its drawings.

### *The scale of these various maps*

But the inanimate and the living don't occupy places of the same size. Are they distinguished like the global and the local, the universal and the singular, the law and the code? Yes, the one submits to laws, holomorphic or universal through analytic prolongations, and the other to codes, specific and local, which are proper to an interior.

That was regarding rules, this is regarding space, large space: hydrogen atoms hold the universe, gases expand, the ten thousand suns of galaxies are colored with the fire of atoms, solid rocks sustain continents, water extends across enormous seas, sound is propagated into the distance, the wind passes ...; one can easily understand why Descartes brought together extension and matter. The inanimate invades the gigantic and the world endures for a long time.

Whereas we don't know of any large living things, I mean of the size of a mountain or of the ocean, of a planet, except in dreams. The colossal dinosaur has disappeared, the elephant, the bear and the whale are not surviving well, the giant sequoia has to be protected ... and minuscule living things proliferate. Life tends towards the small, place-sized. In physics, the observer and the theorist can change scale and work in the immense or the micrometer, whereas, at the moment I am writing, we don't know of any macrobiology of a large organism, except in dreamlike theories. No one has counted any living existence that lasts long, I mean having the duration of the ground or a world. Life tends towards the very short.

Life is characterized by a size that is local and singular, one might say defined, that is to say, surrounded by spatio-temporal limits; it is characterized not by space but by compartment.

### *Networks of prolongations*

Yet life stubbornly persists, across the death of the living, even though it only perpetuates itself through ephemeral singularities. The long life of species passes through brief living things. Likewise, it propagates in space as well as over time, across the interlacings of relations between the smallnesses and brevities that its expansion integrates. Life invades the large by traversing small living beings.

Global in space and across time, massively widespread, colossally lasting, sometimes submitted to universal laws, the inanimate gathers together the living, local and singular, brief, small, even fragile.

The first forms the necessary condition from which the second is sometimes self-sufficient. Neither global nor universal, the living thing occupies time and space through supple trellises of links between small and coded singularities. In reproducing, these brief individuals progressively invade long duration; and large space through locomotion or the feeding of these small engines.

So if place and time grow, everything boils down to the movements of small and brief fragilities united by distances and proximities; here, once again, is a house, for topology and according to energetics: modest hearths in cramped places, linked by paths. Would any autonomy of life exist without this prior definition of the area where it can be born, of the borders that protect its fragility, of the placed or concentrated energy it needs in order to appear, of the networks for its prolongations or its propagations?

These are the first plates of the atlas.

### *An open secret or Harlequin's secret?*

Where, then, does life hide its secret, where should we go looking for it? In place. In what quantity or size? Cramped and short. In what quality or form? Frail, folded, linked. Better: this house or local black box is its very secret, for this latter word means: what one has set apart, selected or passed through a sieve. Secret, singular, the living creature lies *there*, separated.

Stubborn, life therefore expands and prolongs itself, in space and across time, by means of little singular boxes. It remains then to think this *propagation pagus* by *pagus*, patch of land or niche by zone or site, page by page, individual by individual of various species, this invasion by distinct places, in other words, to ponder the globality of localities, a summation that results from the same paradox as the one that, just now, claimed to find the universal of the living in the singularity of place.

Can a third concept between local and global be forged, can the one be linked, mixed or sewn to the other? This is, well-formulated, the most general problem of the plan or the map. Every Atlas then, including ours, displays spatio-temporal models of mosaic diversity: the final image of place, of time and of composite networks, the animal and vegetable kingdom, the old and new kingdom of Harlequin, who is the emperor of the Earth and no longer of the Moon, the various rooms of the house from just now, equipped with its corridors.

### *Mosaic plates*

An example: the forests of the Midi are on fire. The arsonists are put in jail, never the investors who only plant conifers; the homogeneity of the monoculture here constitutes the best possible channel for the propagation of fire: of the inanimate, not of the living thing. We will only extinguish the ravages of the flames by mixing live oak or cork oak with the pine ... in short, by devising a multiple usage or intermeshing of space. The invasion of place by and for a single life form ends up killing that life form.

Like the sun, money doesn't tolerate anything new under its inanimate law, which is uniform and homogeneous, whereas everything is renewed by the local reigns of the living. Here is, well-formulated, in concrete terms, the true question of the universal: the despotic imperialism of a single law, creating emptiness everywhere in order to reign all on its own, or a federation of mosaics? So the old landscape, floral and vernal, returns, that *pagus* of the Latins that designated or described the juxtaposition of fields of wheat, of fallow ground and of vineyards, irregularly arranged. Place dresses itself, once again, in Harlequin's coat.

A summation, hem or supple connection of places, a mixed body, a multi-colored tunic, the most contemporary abstract concept (or, as they say, the most sophisticated one), while also the most

archaic practice, this mosaic model unites every contemporary question about equilibrium, which is always conjugated in the plural, as well as the various conceptions, which are notably chaotic, that we're able to form about space, evolution and time, but, in addition, through its salutary recommendation of protection, it joins, at the very least, what one could call an environmental ethics.

Would this recommendation also be valid for an ecology of the mind or spirit? What do place and travels, the local and the global, plans and world maps, being-there signify for us? But first, what do they signify for anyone whatsoever, alone, living and thinking?

## Being outside the there<sup>13</sup>

There is nothing like a category to send research, and moreover intelligence, to sleep. Considering a literature or a tale to be fantastic, for example, is to give oneself over to laziness: all classification sleeps in drawers and dormitories. Yet the imagination, whose wakefulness continually plays the first moves, sometimes precedes the light of discovery. It does happen that madness discovers the new, even in the order of reason.

A short story filed under that dark and clumsy category, 'The Horla' carefully draws a few refined events of the most normal space that could be mapped in the guides or maps of the mouths of the Seine: the habitat and travels. So observe, first, Maupassant or his narrator living at home, in his house, or sleeping laid out on the grass of the yard. What could be less fantastic, truly, than the delights described here?

### *Space and places*

Everything depends, says his narrator, on place and milieu.<sup>14</sup> For here is inhabited space: the house, the yard on the edge of the river, the surrounding forest; then more distant localities that prolong the surroundings: Rouen, the nearby city, Mont St. Michel, Paris, Brazil. The story explores step by step, meticulously, the bed, the night table, the bedroom, with its chairs and its mirror, and goes from the vicinity to the limits of the universe. The solitary, immobile, contemplates the expanse, then moves in it, while noting, with an exquisite precision, all the minor spatial events due to his travels and prolongations.

'The Horla' describes the there and what happens outside of it or comes from outside of it; it draws up the plan and map of this, that is all.<sup>15</sup>

A Norman, a descendant of those bold sailors whose longships conquered England and Sicily, all the waters from America to the Peloponnese, Greenland, Iceland, France, crossing oceans on narrow decks open to the winds, and, on returning, crossing them again, Maupassant is sleeping under a plane tree beside the banks of the Seine: I love this country, he says, because it's where I have my roots, those deep and delicate roots that attach a man to the land where his ancestors were born and died ... Liar! I love my house, he repeats, from where I can see the river covered with boats passing by, coming from everywhere, those two English schooners and the magnificent Brazilian three-master following them, gleaming, perfectly white; I love my house, white, it too. Lying and truthful at the same time, Maupassant descends from these Vikings, sailors come from outside, whose boats passed over the Seine, from which his ancestors disembarked, there.

A Norman, a descendant of a thieving sea people and a deviser of adventures, Flaubert, too, is bored at a time when the world is changing as it had never changed before; his women are bored to death in his Normandy at one of the most fascinating moments in history. Maupassant is dreaming and

<sup>13</sup> The following pages require that you first read 'The Horla', a brief short story by Guy de Maupassant. Author's note.

<sup>14</sup> On place and milieu = *des lieux et des milieux*. This is from the narrator's July 21 entry.

<sup>15</sup> Serres sees the name Horla as based on *hors là*, which I am translating as 'outside the there'. This stands in contrast to 'being-there'.

falling asleep in the same Normandy, stretched out on the grass, while, lazy and immobile, watching the successors of the Vikings pass by on their way to extraordinary voyages. How I love Jules Verne!

Which, of the two, however, knows space better, the wanderer, who moves all the time, or the stay-at-home, who explores his vicinity through ordinary but rarely made travels? A landsman, a canoer, truthful and lying, a disquieting literary man and a faithful naturalist, Maupassant loves the place of his near forefathers, but also the waters of his true and distant ancestors. A sailor, indeed, but also a man of the land; rooted, but uprooted; outside of his time, in his language, from his country, although having disembarked in the past from elsewhere. Wandering and based, speaking the contradictory truth ... stemming from the outside and come from there, come from outside, stemming from the there.

### *Wandering, burning one's boats*

Soon gone insane,<sup>16</sup> the narrator is going to burn the house he loves and soon destroy himself because an invisible and powerful Being visits him, haunts him and shouts its name, which he repeats and understands. Maupassant or the narrator sees a shadow, an opaque and transparent phantom that, in front of the mirror, intercepts images without itself having any exact image in the mirror. What a strange shadow: both being and non-being, present and absent, here and elsewhere, as a third, contradictory! For that reason, he calls it the *Horla*.

The spirit of the there, the being of the there is not visible, but sometimes reveals itself to the one who is not of the there. Or: does the one-come-from-outside appear, visible, to the enrooted one? How are we to think the relations between the spirit of the place – but what or whom does it concern? – and the spirit of another place, or between spirit and place?

Transparent but opaque, did the being in question come from the white boat into the white house, both of them shining, apparent, phenomenal, epiphanal, revealing and reflecting the spirit of over there, which sailors sometimes unknowingly take on board under their arches?

Is my inner spirit distinguished from the spirit of here that bathes the river and fruit trees with gentle glimmers and whose supple sparkle attracts? My old soul of an old man has long mourned within me the rare fragment of soul that lived at ease in the middle of longitudes and at a latitude of forty-five degrees north, under volatile springtimes, whereas the strangely juxtaposed soul of the one-come-from-outside that I have become mixes its twins within itself, opaque and transparent to themselves, accumulated since a hundred visits to Brazil or elsewhere, all the way to the fjords of Norway, ending by forming a composite rag as complex as my flesh.

Wanderers without fixed roots, we have all become passers-by with a harlequin soul, a soul uniting and mixing the spirits of the places we have passed, well or ill.

Maupassant, who is from here, in Normandy, and come from the outside from the north or from over there, to the south, rooted here and uprooted from no one remembers where, residing under the plane tree and a passer-by in earlier times, wandering, painfully, ill-passing [*mal passant*], dragging his ills over the footprints he leaves; Maupassant, stable on land, unstable on the river, a good son and fixed like Peter, an inheritor, but also an emigrant and disinherited like John; Maupassant, who is at least as double as we all are nowadays, identical, invariant, Peter and John, double double, insane according to the places and the times, having a soul that's both rational and mad, living from death, dying from life, he or Guyon the narrator, himself or his double, discovers that he is going to have to die because of his parasite.

<sup>16</sup> Gone insane = *aliéné*. The sense of alienation involved in the French term needs to be noted, as Serres makes specific reference to it later in this chapter.

But don't you think that a similar thing has already happened many times? When you had to set sail for other shores so as to settle, finally, on this shore of the Seine, do you remember the day you burnt your boats – you, your double, which ancestor? The day you set fire to your vessel, which was as white as this house? So, like him, the opposite of him, put an end to your habitat, whether fixed or mobile, throw your memory, your books and your shoes into the furnace, leave. Kill the old man that sleeps in his categories, follow the *Horla*: this is living, learning, knowing, inventing.

After the roof that protects sleep has been deliberately set on fire and the inflexible walls have collapsed, are you going to take to the sea again, like the most distant of your ancestors, who were born in the cradle of the rolling deck, who vanished, shipwrecked no matter where, in the fold of a wave? So little mad is Maupassant that he takes up again the gesture of setting sail: going from the there towards the outside.

### *Existing*

Sakes alive, one never dies but from ex-isting, leaving, departing, endlessly placing oneself in deviation from equilibrium, ill-passing. In a sort of common language doublet, *Horla* translates 'existence', which is Latin and scholarly, and expresses it not with a verb, but with an adverb.<sup>17</sup> The stable becomes unbalanced, the posed becomes exposed. The wanderer or the ill-passer, the Norman sailors of yesteryear and the men of our world today have for a long time lived out the fights to the death of *Being-there* and the *Horla*, a battle of souls that shapes, in tears, their mixed, many-colored, spangled soul, formed from spirits of the there and of the over there. What mariner ever learns to sail if he does not know that each ship has its own spirit, which he must know how to take for himself all the while leaving it on the moving vessel? And that he must change boats, often; as well as oceans, capes, ports, countries. Burn your house of flesh and stone, take to the sea, embark on the white three-master. Passing, well or ill, think without reference: by relations, speak by inflections or by declensions, by means of prepositions.

### *Inhabiting, leaving*

So, fond of residing, but faithful to his double kin, our narrator endlessly seeks to leave. The final scene will have him slipping through the crack of the partially opened door – the root of the preposition *hors* [outside] designates precisely this door<sup>18</sup> – in order to trap the *Horla* within, to immobilize there the one come from outside and to block him in order to burn him, while he, the inhabitant, immobile and stay-at-home, flees, symmetrically, towards the exterior: the there mobilizes itself towards the outside.

What does 'to inhabit' mean? How is wandering stopped? What does it mean to immobilize the mobile or to bring to repose the exposed? What does 'to haunt' mean? How does one, at the same time, make the outside enter (or remain blocked) inside and the inside escape or slip outside? How does one write – or think – without nouns, stable, or verbs? Everything ends in the dance of flames: the house explodes into a magnificent and horrible inferno, a volcano of fire that shoots up high into the sky.

### *Perception: the near and the distant*

<sup>17</sup> Again, Serres sees the word *Horla* as based on *hors là*, which I am translating as 'outside the there'. But in the French construction, *là* is an adverb. Unfortunately, I have found it necessary to render it as a noun.

<sup>18</sup> *Hors* is derived from the Latin *foris*, door.

Leaving, visiting: travel modifies perceived space.

‘We can not probe the Invisible with our eyes, which are unable to see the too small, the too big, the too near or the too far. What a number of things we would discover with better organs!’ So a program, in a regretful style, but also and above all a definition of distance and of the resolution of the gaze. Seeing presupposes an immobile observer, visiting demands that one perceive while moving.

Through bad luck and good luck, the narrator recovers the means for this exploration: fever has just taken hold of him, dilating his eyes, accelerating his pulse, causing his nerves to vibrate. Is he finally going to see, touch, feel the imperceptible? Because it prevents him from reading, the sickness throws him into his drawing-room, where he paces endlessly, back and forth: he has departed into space; let’s read in his stead.

The *outside of hors* indicates the exterior and the remote, whereas the *there of là* designates the nearby place: so the *Horla* describes a tension between the adjacent, the adjoining, the contiguous and the distant, whether reached or inaccessible, starting from this vicinity. Does a contradiction set this *outside* and this *there* in opposition or, on the contrary, does some movement or bond unite them? Let’s recognize, in passing, that we often call ‘intimate’, that is, by the superlative of the internal, for which ‘interior’ marks the comparative, the simple facts of vicinity, of habitat or of habit, home, private life, secret corner, solitude, which are less internal than external but very close. This is the *there*. As a result, that which we make into substances and therefore talk about through substantives boils down to relations. What happens when, from a purely external space, we approach, little by little or abruptly, this remote place that’s as close as possible to us?

Short and precise, scenes follow one another and describe relations that, precisely, juxtapose the familiar to the foreign, which is less foreign, in fact, than simply distant. It is a matter of connecting to intimate places their successors in space, step by step, through a kind of analytic prolongation.<sup>19</sup> Here are some examples of this.

### *Voyages in the most near*

The first scene, a description of the *there* through pure and simple relations: I passed the entire morning stretched out *on the grass in front of my house under the huge plane tree ...*; this tree covers, shelters, shades the roof, as if the house had the tree for its house, as if Maupassant lived in a box which, itself, lived in another, by means of boxes nesting into each other. So the narrator plunges his roots there, since, laid down among the grass, he is lodged in and under the tree.

These local references, well-defined in relation to me, lying stretched out, and then to the ground and to the earth, are prolonged, step by step, *to food, to odors, to the local dialect with its intonations and its accent, then to the surroundings, more distant, of Rouen and its steeples, whose ringing bells bring the neighboring city here, depending on whether the breeze carries the sound, sometimes loud or faint, all the way to me.* This is the normal process of location through the senses or, rather, through the messages of position that arrive along sensorial relations.

*On the Seine that flows in front of the house, along my yard, almost at my home ... boats pass, two English schooners and a Brazilian three-master, that now indicate the outside.* England close by, Brazil distant. The river, whose course almost crosses the dwelling, draws the exterior towards the interior, the outside inside or the *outside there [hors là]*. The first verb of the text? To pass. The last verb of this local description of the there? Once again, to pass. Boats pass before me, who is passing the entire morning there, stretched out. Has the narrator – or the subject – just signed his name?

Once the first references are posed in relation to immobility, this subject, laid out on the lawn,

<sup>19</sup> Step by step = *de proche en proche*, the literal meaning of which is from near to near. Serres does at times also employ the phrase *pas à pas*, literally step by step, in this discussion.

passing or ill-passing, exposes himself to the nearest vicinity; the first excursion, no further than the surroundings.

### *Very small prolongation*

Hence the second scene, a short stroll: cheerful at home before I left, I return very disquieted after this little trip along the water. On the occasion of this anxiety attack, the thought came to me that we see without looking, that we touch without feeling, that both the too small and the too big remain imperceptible.

A paradox: out of familiarity, or rather out of that habit that comes to us from habitation, the excess of vicinity is equivalent to a distancing.

But, ill or well come, this fever sharpens the organs, which immediately perceive a threatening danger, like a misfortune, a death that approaches, coming from elsewhere or germinating in the blood and flesh, stemming from the outside but already there.

### *Cartography of the story*

The French word *hors* [outside] comes from the Latin *foris* or *fores*, which designates, as we know, the door of the house that opens onto the exterior: the Latin *forum* must have first meant the enclosure that surrounds the residence, a yard or a meadow, before coming to designate the public square of the city. The semantic family of this preposition is organized like a step by step movement from the neighboring towards the distant: from the door opening onto the threshold to the nearby enclosure, then to the marketplace, exterior ... This semantic family therefore doesn't designate fixed places so much as a careful trip through analytic prolongation. The entire short story follows this same progression.

So let's continue this progression: the Latin *foranus*, the foreigner, would engender the French *farouche* [shy, unsociable, fierce], then *la forêt* [forest], which is situated outside the enclosure, the *forum*, the house, the yard and the city; the one that lives in the forest wanders, being par excellence outside or exterior: *forain* [itinerant], *forclos* [excluded], *fourvoyé* [misled], *fourbu* [exhausted], *forban* [bandit, pirate], on balance, not very reassuring. Here is the announced anxiety. The sailor who is mooring across, or *affourche*, calls the gulf open to the high seas an open roadstead or *rade foraine*. At the forum, the political and civil court sits, while in the enclosure family business is decided; this judicial sense is found in *for*, or tribunal, which when internal or interior is the old judgment of conscience, in opposition to the external tribunal, which is reserved for public jurisdiction. Likewise, the forest comes under the authority of the king's court of justice. Maupassant could have written: the forla, the internal and external tribunal [*for*] of the lunatic, who is handed over to others. This is psychology, a variable discipline, which, alas, is ignorant of space.

On balance, paradoxical, this semantic family designates an interior or enclosure, then an exterior, the itinerant forest [*forêt foraine*], plus a door, the threshold or passage that connects or separates them, and the court that decides the matter; lastly, the fantastic tribunal [*for*] of the madman.

The description of the local events situated around the house, around the door, around the threshold, the yard and the garden, the linking of the spaces that border them, in circles, as it were, of the paths that connect them and of the populations that haunt the passages now draw a rigorous and detailed topography of the vicinity. In parallel to this, justice imitates these prolongations so that its pronouncements distinguish two persons: the banished bandit [*forban*] from the person who, in his interior tribunal [*for*], can enjoy his independence in peace. Just as the beam of the balance, whether real scales or the scales of justice, vacillates and oscillates, the preposition *hors* hesitates on the

threshold and designates events that go through the door, which is a place where one passes, well or ill, from the interior to the exterior, or from the outside to the there. A double locale and a doubt concerning the unity of the person.

### *Third trip*

A new scene then: I went to take a walk in the Roumare Forest, nearby ... I followed a wide avenue used by hunters, then turned towards La Bouille, along a narrow path between two armies of exceedingly tall trees, which placed a green, dense, almost black canopy between me and the sky: as an exercise, the reader might underline the prepositions, which are always used meticulously, first of all as vectors, it seems.

The narrator continues to explore the surroundings by means of increasingly distant excursions and describes, with a scrupulous exactitude, all the minor events of the intervals. How?

### *Topology*

A laziness relative to mathematics induces one to think that space, in geometry, is linked to a metric or even to measurement in general. Bergson and Heidegger repeat, at will, the same mistake and lead those indebted to them into the same error, while failing to observe that around them topologists, and as usual, before the scientists, artists like Maupassant, knew how to paint the vicinity and its proximities without any need for distance or quantity to measure it. Bergson writes, for example, that traditional philosophy, like the intelligence, excels in speaking geometrically about space, but confines itself to this exercise; this is all very marvelous, but completing said descriptions doesn't necessarily amount to taking refuge exclusively in time!

Topology follows the contours of space differently, and better. To do this, it makes use of the closed (*inside*), of the open (*outside*), of intervals (*between*), of orientation and direction (*towards* [vers], *ahead*, *behind*), of vicinity and adherence (*near*, *on*, *against*, *following*, *touching*), of immersion (*among*), of dimension ... etc., all of them realities without measurement and with relations. Formerly called *analysis situs* by Leibniz, topology describes positions and is best expressed through prepositions.

Thus, leaving the house, tra-vers-ing<sup>20</sup> the enclosure or the yard that surrounds it, going through the door that opens onto the exterior demand the sharpest attention to what comes to pass in these places brimming with refined little facts. To describe them, we must circumspectly use the prepositions 'between', 'in', 'by' ..., operators of inflections or of declensions that designate, not places as such, contents and containers, defined, delimited, cut out and therefore metrical or measurable, but relations and relationships of vicinity, of proximity, of distance, of adherence or of accumulation, in other words, positions. Those of being-there and its relations to the outside.

Topology founds the topography of maps and plans.

### *Fluids*

We heedlessly call an assessable knowledge coherent, rigorous, consistent; we place our trust in solid objects, whose stiffness fixes mass and volume, content and container, therefore in measurement, therefore in definitions of the stable semantic fields of nouns or verbs – Leibniz called the invincible or relatively elastic resistance of solids *antitype*, and this term meant, in addition, the property that allows

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<sup>20</sup> *Vers* means 'towards'.

us to write on them: stable, fixed, therefore inscriptible –, whereas we're loath to dive in among liquids, the aquatic and the vaporous; we carelessly call a despised manner of thinking vague, confused, clouded; fluidity reigns where distances change and fluctuate, and on it, lastly, writing is erased and measurement lost.

'The Horla' precedes Bergson in this courageous dive into fluctuation and surpasses him theoretically. There is nothing dreamy or imaginary in waters or flows, no magic, only the recognition, of minimal merit, that the world is not merely composed of stones and iron. In the world of waves, rivers or flows, one can't count distances and proximities in the same way or locate sites according to a rigid ruler.

To my knowledge, ever since we have been speaking Hebrew, Greek or Latin, our soul, which is precisely fluid, breathes and, through this wind, warms or cools: a liquid being, a mist that slides over the pure limpidity of a mirror and sometimes risks tarnishing it.<sup>21</sup> Is it a shiver of cold, the shape of the clouds or the color of the day, so variable, that, brushing my skin or entering my eyes, has clouded my thought or darkened my soul? Stated at the beginning of the short story, this observation prepares and heralds the scene at the end, before the bedroom mirror. Such an 'object' – a breath, a cloud or a soul – creates no obstacle at all between the mirror and myself the way a block of wood would. Opaque and transparent, translucent in sum, a blanket of fog opens and closes at the same time. Intimate and near, disquieted, well away from calm, the soul is unaware, it too, of the mutual exclusion of the inside and the outside, of the outside and the there.

Through mists or adhesions, the topology of fluids dissolves the fantastic's way of speaking and resolves its problems.

### *Map of habitats*

Another example. One doesn't walk in a woods as one moves about in one's house: neither belongingness, nor location, nor habitat are reducible to one another there. Prudent and wise, the French language specifies that here one *habite* [lives or inhabits], with *habits* [clothes] and well-defined *habitudes* [habits], but for elsewhere, it topically uses the verb *hanter* [to haunt]. The inhabited home and the haunted forest, two different states for a similar vital use.

One doesn't enter one's residence as one enters a forest, under one's roof as under a woods, between the walls of one's hallway as between the trees of an avenue used by hunters ...; the places have changed their closeness and the borders their proximity; the body doesn't perceive the same approaches of the far and of the near. Frequently used, the verb 'to approach' connects or disconnects, for the worse and the better, the external and the intimate, the outside and the there.

A house bears witness to the metric geometry of the master masons, as if it retained traces of it or as if it had inspired them, while the external place, the there of the outside, imposes a totally different perception. Certain, here, seated, inside, that the wall behind me, which is stable, remains at a fixed and measurable distance from my back when, absorbed, I write, read, speak or eat at my table, I leave the house and lose my assurances from that which, *a tergo*, haunts me. The wind, peaceful or turbulent, mobilizes the branches as well as the leaves, first at a distance and then close by, while insects accompany or leave me; in short, the fauna and flora, the flows and intervals, don't occupy the expanse the way the mason's empty angles and straight lines do in the house.

This is the passage from the shiver of cold to the shiver of anxiety. The proximity and the closeness therefore transform, the far and the near exchange their distances, which have become elastic: disquieted (loss of repose, deviation from equilibrium) at being alone in this woods, afraid, I quickened

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<sup>21</sup> Soul = *âme*, which derives from the Latin *anima*, breath. The same is true of the Greek and Hebrew words for soul.

my step ... in a profound solitude. Suddenly, it seemed as if I were being followed, that somebody was walking at my heels, very close, very close, enough to touch me. Metric geometry canonizes the distances located by vision, while touch, continually cited here, closer to topology, reveals proximities marvelously. I inhabit geometry whereas topology haunts me. Ever since the millennia that have separated us from its birth, the hard and pure space of the former has built our house: its measuring stick is what serves as our earth. Yet, the house, as we have learned from the beginning of the story on, itself inhabits – or haunts? – a tree.

‘I turned round suddenly. I was alone. Behind me, all I saw was the wide and straight path, empty, high-ceilinged, alarmingly empty, and on the other side it also stretched away as far as the eye can see, looking just the same, terrifying.’ The outside resembles the inside or the converse. Without rectangles or vertical lines, the topology of the forest doesn’t resemble the metric of the house in any way: this would only happen in haunted houses or in a house that would inhabit a tree! Worse, directions change there, as well as the facts of orientation. Here, as close as possible to myself and my habitual habitat, on the grass, in front of the Seine ..., I remain well-oriented, perfectly located. ‘I began to turn round on one heel, very fast, like a top. I almost fell over; I opened my eyes; the trees were dancing; the ground was heaving; I had to sit down. Then, ah! I no longer remembered which way I had come ... I departed in the direction that happened to be to my right, and I got back to the avenue that had led me into the middle of the forest.’

So this is how one goes from the outside to the there and conversely: leaving the enclosure in front of the house, under the plane tree that shelters and shades it, we reach foreign spaces through successive and increasingly distant excursions ... as though, by following the senses described by the semantic family of the word *hors* [outside], we had passed from the word *forum*, the private enclosure, then the public place, to the new sense of the forest: a narrative or variations on the preposition. One therefore has to consider this description of space and places as being normal, exact, faithful and belonging to ordinary experience.

### *Map of an excursion*

A new departure to the exterior: seen from a public garden, at the far end of the city of Avranches, the enormous bay of Mont Saint-Michel stretches as far as the eye can see between two shorelines, which disappear into the mist. Maupassant, here, uses the lexicon of the fantastic for the rock on which the church stands, the monument and the animals that decorate its bell-turrets. Does it amount to Gothic?

An approach, again: at dawn, I went towards it. Then I climbed up the steps, all the way to the summit. Thus we reach theory. For, there, the monk-guide recounts old stories about the place. Each place has its legends – how one must read the there – and these legends speak of the wind, invisible and present. The most significant and the only one retained describes an old shepherd, whose head is never seen, covered as it was by a cloak, who is guiding, while walking ahead of them, a billy goat with the face of a man and a nanny-goat with the face of a woman, both bleating, one with a loud voice and the other with a faint one, quarreling with each other incessantly: goat or *tragos*, the tragic foundation of the construction?

### *Theoretical Guide*

The monk-guide of Mont Saint-Michel, wise or ignorant, both at once no doubt, therefore double, affirms, in fact, that he doesn’t know if he believes what he recounted, but he gives a first kernel, an archaic one, of an explanation: the head of the shepherd is never seen because he doesn’t

know, he either, that, behind him, at his back, a couple are in dispute. Hidden by a double blindness, precedence and the cloak, identity is expressed by the conflictual relationship and by the similarity of species between the double and its same, who imitate the goat, between the intimate, the tribunal [*le for*], and the exterior, the outside [*le hors*], both of which are said with the same word.

An inspired and black gaze which discovers that the soul, said to be intimate, lies there, not in an interior, an imaginary one, but outside, in the exterior, and that one can describe its torments as events in ordinary space! Otherwise and quickly said: Being-there is a Horla [Outside the There]. One must have eyes that have been singularly enlarged by fever to finally see clearly this internal unity in two external persons, as in a mirror!

The first mythological theory of the double, discovered in the religious world, that of Mont Saint-Michel. Already, the fantastic has disappeared, in the Gothic places themselves where the narrator had discovered it. Relation here is presented in its elementary simplicity: imitation and its image or the same and its imitation.<sup>22</sup>

‘Do you believe the story? – I don’t know.’

‘Can one see the invisible? – Do you see the wind?’

The wind? A vapor, a flow, some fluid? Do you mean, in languages: the *ruagh*, the *ánemos*, the *psyche*, the *anima*? The soul, identity, the same, lastly, walking in front, is defined by relation to the double, which is defined by the mimetic relation to the same: they bleat and quarrel.

### *Cartographic exercises*

As an exercise, I invite the reader to explore now, following the narrator, the successive circles that are increasingly distant from his habitat of departure: Rouen, Paris, the news that comes from São Paulo and, theoretically, the spaces of the universe, outside the world, the sum of theres.

Just as the Normans came from elsewhere, why wouldn’t some new being arrive from another world? Guyon or the narrator goes from there to the outside and the spirit from the outside to the there. These relations, purely spatial, receive explanations as they prolong or propagate, step by step, towards the distant expanse. In other words, theory comes from elsewhere, like the double itself, or the other.

As part of the same exercise, I invite those awakened by attention to the text to unfold, after these analytic prolongations, the successive circles of the respective theories. The second kernel of an explanation appears, for example, in Paris, during the magnetism session and the hypnotism of the cousin. This is the appearance of positivistic science, after the mythical theory. The one, no doubt, doesn’t erase the other. But it inspires the experimental skills that are going to follow: the closed bottle, the white linen, the graphite, carefully prepared so as to catch the invisible one by surprise. Please note how these manipulations, like those of the door on the last tragic evening, consist in tracing, with the greatest care, the border or the edge between the outside and the inside.

But the wind of the soul and the wave of the image seem to make light of such definitions, of such border precisions between the outside and the there. But here, once again, is good and fine topology! The carafe on the night table is called, in that discipline, a Klein bottle, without exterior or interior, a three dimensional Möbius strip. Hardly paradoxical, this volume and ‘The Horla’ are the same age.

You will have noticed that, most often, the announcers of the soul like to make the subjective take place at the furthest bounds of the research undertaken by objective knowledge: today the cognitive sciences play this same game, which was practiced by Doctor Freud with thermodynamics,

<sup>22</sup> Imitation and its image or the same and its imitation = *le mime et son image ou le même et son mime*. See ‘The Horla becomes the parasite’, two subsections below.

by others with electricity, etc. Yet science rarely waits for us in the places we seek it, but, on the contrary, is suddenly discovered where we didn't expect to find it. Look in fact at the experiment's manipulations, useless and non-conclusive: locking the bedroom door, wrapping the carafe in white linen, rubbing the lips, beard and hands with graphite ... and, likewise, during the trip to Paris, the magnetism session, objectively reported, and lastly the documentation borrowed from the library of Rouen ...; everything required by the positivism of the day is found in this story, as though Maupassant very consciously wanted to inject rationalism of the highest order into it. Yet, beyond but beside all hope, he succeeds in rendering rational what appeared unable to become so, but not at all what he had thought he was rationalizing. When imported, repeated, located, classified, science is good for nothing, while artistic writing, precise and rigorous, wins out over it by far, precedes it and straightaway enters into science: an inescapable lesson in intellectual probity.

### *The Horla becomes the parasite*

Tell me, now, in what company or *beside* whom you live, and I'll tell you who you are; describe your double, your guardian angel or parasite, and I'll see your identity. Who are we then? Both the one and the other or, rather, the other and the same and, at the same time, neither the one nor the other; therefore, the set of relationships between these two places: in their closest respective vicinity, increasingly far from each of them, between them, in this open or closed interval, along the paths that link them, route or volume. We are again traveling the space described. When we say *le même* [the same] or even *moi-même* [myself], let's confess that we hear *le mime* [imitation], therefore once again a relation. 'The Horla' begins by describing the set of relations with and between places, then with the spirit, single and bushy, of places, after that with the spirit itself, and finally with oneself and one's double.

The spirit becomes flesh: a vampire or leech that, its mouth on mine, drinks the life from my lips. Hence the return of the parasite, which is expressly evoked for that matter, and its expulsion, as at the end of *Tartuffe* or, better, *La Conquête de Plassans*, in the burning of the house. It drinks my night water, my milk on the table beside my bed, picks my roses, sits in my armchair, reads my books, like 'that orphan dressed in black who resembled me like a brother', who remains until the next day, in Musset's bedroom.<sup>23</sup> *Para* or 'beside' designates the closest vicinity to the *there*, but already foreign, come from elsewhere or living outside, in other words, the first other, following and touching the same. Can one find a better proper name than the Horla for the Parasite?

### *Substitution*

The double eats in one's spot, taking one's place, gathers one's flowers, and, in one's armchair, reads and drinks. The effect of the fantastic is tied to the simplest logic, but is tied again to the events in the nearest vicinity, so near that it touches me to the point of driving me to the exterior, out of my there. Really outside logic, the fantastic therefore boils down to the abolition of the principle of identity in its negative form called the principle of excluded middle, a suppression that presupposes precisely substitution. An other places itself in my place, an other-there or *Horla* puts itself in the place of the being-there.

Far from contenting himself with describing the double and alienation, Maupassant conducts the genesis of the subject. His description takes place, if I may, less in acts and feelings, less in thoughts or emotions, less in psychopathology, to say everything with a big word, than through positions in space

<sup>23</sup> The quote is from Alfred de Musset's 'The Night of December', in which he dialogues with his double. Serres' quote is not exact.

and time, and therefore through prepositions more than through verbs and nouns. The mistake of psychopathological commentary consists in only working in a position, in the interior of the subject – why does the subject inhabit an interior? what interior? where? –, that is to say, a single position. Does every preposition describe the possibility of a relation, of an inflection, of a declension, which are more complicated than the preposition, but perhaps composed from it?

Wouldn't madness and alienation reside, on the contrary, in the strange decision to enclose all space and its events in a single place prejudged to be interior? The subject would be internal, or worse, interior – a comparative – or better yet, intimate – a superlative. The more I go towards the interior, the more I go towards the self; the more I exit the self, the more I run towards the other. Alienation is found in the exterior, there I am outside myself, or in the direction of others. In fact, the whole of Maupassant's short story describes these two movements with precision: for the subject, exiting; and for the double, arriving – or returning. A simple theater of space!

### *Normal, non-pathological*

We all have the experience of presence and absence, of the real and the virtual; granted, we are there, but, in this stump of a sentence, we understand the adverb rather than the verb, for I don't know what I am nor do I understand this being of myself: is it state, station, nature, position? But as far as the adverb itself is concerned: I am there, at this moment, but, at the same time, I am in Stanford as well, where some work which is preoccupying me is waiting for me, but also in Vincennes or Paris, or in my birth paradise, too, from which an archaic fragment of myself will never cast off, and elsewhere, here and there, where my time, like the tail of a comet, has left, due to its passage, aeroliths of reminiscence, but above all elsewhere, absolutely speaking, or up in the air, as they say, in the placeless place of play, of thought or of hope, of meditation and of ecstasy, of perfect geometry and of the pure loves the troubadours taught me for the distant princess, and, as well, in the moving true utopia to which the Archangels carry me off – so placing oneself into the hands of one's guardian angel appears more reasonable and leaves one in better health than killing the Horla –, and, without a doubt, I am only there, present, with both feet posed on the incontestable Earth, because at this very moment I am traveling and gliding in these other spaces. I am there through my Horlas; I am present in the space called real through my absences in a hundred virtual places.

### *Technology and logic*

That there is no contradiction between the fact that I'm here and elsewhere at the same time simply shows that in these matters it would be proper to lift the principle of excluded middle or third, something that commits me to strange, almost unintuitable, spatial explorations, ones that are even more exotic than the voyages of Ulysses, Dante and Gulliver, and nevertheless so practical and concrete that we exploit them in our technologies.<sup>24</sup> In other words, I am there at the same time as an other, I am elsewhere at the same time as here, perhaps even in the place of an other.

Who am I? The third. *The included third*. What is the meaning of this phrase? That I am intimately united with an other and with many more others still. Yes, I am legion: an innumerable set of others. Substitutable. Yet we prefer to say: I am there and some other is elsewhere, I am not elsewhere and some other does not reside here, and we define identity through the principle of excluded middle or third: it is impossible for A to be and not to be at the same time and in the same place. So described, identity presupposes an outside, solid and inscribable, and an inside, an outside and inside very

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<sup>24</sup> The excluded middle in French is expressed as the excluded third.

different from those suggested by experience and language, as though it were a matter of a black box with hard walls and a heavy lid, well-closed, impregnable: in the name of what would I be that kind of strongbox? For such a thing, indeed, the principle of identity functions validly: the water remains in the carafe or it spreads on the outside. There can be no other choice, and if a foreign body penetrates the container, it has to substitute itself for the previous contents. But that already no longer works for the folds of a sack!

How does it happen that I'm dressed [*habillé*], inhabited, haunted, with fullness, pain and exquisite ecstasy, by the woman I love, who has, for so long, cast me out of my there, but with whom, within myself, I am mixed? The Euclidean volume you believe you inhabit must reveal itself to be unlivable and, moreover, absurd.

Two prepositions dominate the reasoning here: in and under. The first one regulates the separation of the interior and the intimate from the exterior, and the second one the movements from the one to the other. From which it follows that the metaphysics of substance and that of the subject refer to a space that's preregulated, presupposed by these positions, precisely by substitution. The fundamental prejudgment of such a space must be doubted: this, precisely, is the work of the *Horla*. Seated in my armchair, in my place, the double reads my book. It has substituted its presence for mine. Am I a subject? Yes, of course, since here I am thrown underneath it! Substance? Yes, again: crushed, stable under its weight and its threat.

I would have hoped, in truth, that you had read more fantastic philosophies than those founded on substance or the subject. Maupassant helps us to find them silly and simplistic.

### *Scale model of a bottle*

Granted, the logical subject obeys these two principles, the excluded third/middle or contradiction, but why shouldn't personal identity differ from logical identity? Thus, granted, my selfsameness is the same; there is the identical in my identity, but there is not only the identical, with the result that my selfsameness is not the same as the same.<sup>25</sup> Why confuse *idem* and *ipse*, *self* and *same*? I am neither a geometrical point nor a place located in a metric space, nor a hard ball in a solid box, nor a pilot in his ship, nor a hard stone for writing. I am, rather, who I am not and am not who I am: I didn't invent this ancient theorem. It doesn't only presuppose bad faith.

On the contrary, a very ordinary miracle: the genie leaves the bottle and expands into the universe, all the while remaining in the translucent and opaque glass. The self, porous, mixed, accumulates presence and absence, connects and sews together the near and the distant, the real and the virtual, separates and brings into proximity the outside and the there. Far from resembling the one Guyon puts on his night table, the bottle said to be fantastic instead comes closer to that of the genie, that is to say, to Kleinian topology: the more rational of the two is not the bottle one expects.

Hasn't philosophy only explored, and poorly, the over, for transcendence, the under, for substance and the subject, and the in, for the immanent world and the immanent self? Does it remain to generalize? To follow the with of communications and of the contract, the across of translation, the among and the between of interferences, the through of the passages through which Hermes and the Angels pass, the beside of the parasite, the outside of detachment ..., all the spatio-temporal varieties preposed by all the prepositions, declensions or inflections?

The dance of the flames that set the house ablaze is about to make us see them.

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<sup>25</sup> My selfsameness = *moi-même*, which simply means myself, but the play on words of *moi-même* and *même* [same] would be lost with that translation.

### *Animation in space-time*

A tragic conclusion? No, a luminous synthesis. How does one kill the parasite, as Zola, in *La Conquête de Plassans*, decides to do? By burning the house, the nest he has stolen from its proprietor by substituting himself for him. The nanny goat kills the billy goat or the billy goat kills the tragic nanny goat. But, above all: how does one illuminate space, the most violently, so that its events can be seen, to the point of dazzlement? How does one make all the prepositions together burn? Lastly: how does one show that, after the presence by my side of he who is capable of everyone and everything, and whose capacity inspires me, the other secret of creation or of discovery resides in the burning violence of seeing, intuition, which is lived among the ardent awakening of devouring flames?

Here then is an animation or a space-time map of this. From this log in the fireplace and then among the beams of the farmhouse during the fire – just as in the center and on the surface of the Sun or in the laboratory through the fusion of atoms – a complex and fluctuating curtain of flames bursts forth, red cerise, white, dark blue, crimson, flames that launch out from the wood upward and all the way up to the sky, it seems, all at once, across the entire horizon, but reducing themselves rapidly to nothingness, blown down against the ground by the wind just after their first flash, catching again nevertheless after their disappearance, smoldering, smothered, before catching again, under the weight of combustible things, so as to surge, all of a sudden, beyond their mass and above their surface, light, frenzied, mad, beautiful, wicked, following the outer walls, licking the inner walls, touching the hollows and bumps, according to the disposition of the places and in spite of the obstacles, dancing with the breaths of air and regardless of the gusts that might have extinguished them but following the gusts that nourish them – the fire lives at home via the wind –, torn, knotted, untied, sliding like a nest of vipers among themselves and the objects that defend themselves against them or feed them, during two brief minutes or throughout an entire long night ...

... have we, barring exceptions, ever observed or thought this rapid and capricious sheet or variety, dynamic, joyous, hot and destructive, continuous and knotted together, crowned with floating crests? Have we ever seen this volatile space-time, since this light, dazzling and eclipsed, conditions our sight? There can be no sight without light, nor life or thought without relations dancing according to these flames.

### 3. The Time and Weather of the World<sup>26</sup>

#### *The empire of reason*

Since an English law of 1677 condemned ‘rain makers and prophets of the weather’ to be burnt at the stake, the British forecasters whose rapid intelligence allowed the landing at Normandy on June 6, 1944, during a time of fairly unexpected calm weather, were legally risking the death penalty because the British Parliament only repealed this law, amidst laughter, in 1959.

If everyone remembers the meeting between Napoleon and Laplace and their brief and lively exchange on the role of God in the system of the world, Arago reminds us of a lesser known exchange between the same Emperor and Lamarck on the subject of climate. Lamarck had written a good deal about meteorology. At some arranged session of the French Academy of Sciences, each scientist had to offer one of his works to the illustrious visitor. The latter entered, greeted his hosts one by one and, arriving at the naturalist in the line-up, severely took him to task, sharply beseeching him to return to plants or mollusks and to put aside speculations on clouds. Old Lamarck, Arago relates, burst into sobbing. Did the geometrical strategist already have a presentiment of the Muscovite winter and the rain of Waterloo?

In both cases, reason, of religion, of law and of science, displays its contempt for weather.

#### *Mechanical time and the weather of storms* [temps mécanique et temps des tempêtes]

Le Verrier, as everyone knows, discovered Neptune in 1845, through calculations concerning the neighboring orbits, before being able to observe the new planet through the telescope; but no one knows that he drew up the first weather map, on February 19, 1855, thanks to the recent installation of the electrical telegraph in the big cities and the interest aroused by the Crimean expedition. Moreover, anyone who sails might have received announcements of storms or urgent navigational warnings. Le Verrier, again, invented these, soon imitated by the sailors of every maritime country. From the astronomy of the solar system to the climate, the famous astronomer went from canonical reason, that of rational mechanics, to a field of singularities where one had to resign oneself to drawing up maps. Quickly said: he passed from deduction to atlases.

But who takes an interest in Neptune today, when television channels amuse billions of spectators in real time with the animation of weather maps? Have prediction, probability, vortexing flows, fluctuating like flags in the wind or like a curtain of flames, conquered, in the public, all the interest lost to classical mechanics and its determinism, hard and perfect, which had both once fascinated it so: the final defeat of Napoleon and the revenge of the English sorcerers? Does this floating animation of the climate now concern our relation to the world even more than the trajectories

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<sup>26</sup> The French word *temps*, which is the focus of much of this section, can mean either time or weather and, in this work, is sometimes used to mean the one, sometimes the other and sometimes both. I have generally translated *temps* then with either ‘time’ or ‘weather’, or ‘time and weather’, or phrases such as: ‘the *temps* that is time’ or ‘the *temps* that is weather’. Sometimes, when the intermixture of these terms is insisted upon, I have left *temps* untranslated. When the notion of weather does not seem directly involved in the immediate context, I have rendered *temps* as ‘time’. Also, at a certain point, I will just assume the reader knows that mixture or weather is involved in time and translate the term as ‘time’.

of the planets, even though, until recently, right reason preferred the latter to the former? Do we live by unpredictable mobility more than in the tranquil order of the cosmos? Does our God play dice? Why this success of animated maps?

*Every philosopher wrote about Meteors*<sup>27</sup>

From Aristotle, and even the Presocratics, all the way up until Descartes at least, no one was found to be deserving of the title philosopher who hadn't in fact written about *Meteors*.

So let's read one of these meteorological maps, so frequent today: the rotation of the Earth, linked to the caprices of its relief, randomly distributed pits and bumps, engenders vortices in the air, some of which, pointing upwards, turn in one direction, while others, pointing the opposite way, turn in the other. The Sun, on the other hand, heats and cools – when it disappears – seas and continents at different rates, the solids more slowly and the liquids more rapidly: this inequality of temperature launches other vortices, which therefore periodically appear and disappear. The warm air masses and the cold air masses, which ensure temperature exchanges between the poles and the equator and are carried along in all these movements, travel erratically; when they meet, their confrontation, in its turn, forms new vortices, which are promptly impelled by the wind into threading their way between the preceding larger ones. This flowing assemblage of circulation, wheels within interlinking wheels, up close, resembles the world conceived by Descartes.

Nothing of this philosopher survives today: not his theory of passions, crude, nor his physics, a product of a romantic imagination, still less his method, useless, and yet he's remembered much less for where he truly triumphed and still lives on, this system of vortices, traditionally ridiculed, than for those feeble methodological precepts still perpetuated and repeated by teaching, but which no one has ever used.

Since that time, since that magnificent success, not one philosopher has dared to write on meteors. Why? Why was there that theological and political suspicion in the English legislation? Why did the imperial tyrant become inflamed with anger? Why has there been this suppression in the history of science, forgetful of half of the works of Lamarck and Le Verrier ... just as it pretends to be unaware that alchemy constitutes the most important topic in terms of volume in Newton's works? When did reason abandon weather? Why don't philosophers write about meteors any longer?

*Vision and clairvoyance, prevision and foresight*<sup>28</sup>

Meteorology attempts, with difficulty, to predict the weather [*temps*] to come, carried here and elsewhere by unpredictable breaths, whereas astronomy predicts, to the second, the time [*temps*] of the passage of the planets. The word *prévision* [prediction or prevision] did not enter the technical or everyday vocabulary of the French language until recently. Maupertuis was the first to introduce it, in the middle of the eighteenth century, and for good scientific reasons stemming soundly from rational mechanics: the data of a trajectory or an orbit leaves no shadow of doubt about the future positions of a bolide. From time [*temps*] and from the field of mechanics and from the system of the world, perfectly deterministic, to the totality of disciplines, which were thought based on their model, prediction would become, starting from this Maupertuis, the criteria of all scientific success. Time for astronomy and

<sup>27</sup> 'Meteors' here means atmospheric phenomena. This meaning of the word is now obsolete in English.

<sup>28</sup> Prevision = *prévision*, which I would normally translate as prediction in this context. But I use the less common 'prevision' to retain the connection to vision found in all four words. When Serres is not stressing the vision aspect, I'll translate the word as prediction, as in the following paragraph, for instance.

weather<sup>29</sup> for the climate: meteorological prediction does not talk about the same *temps*. The chronometer measures, shows and predicts the first *temps*; the barometer, for example, vaguely estimates the second.

Voltaire thundered against this innovation introduced by Maupertuis and avenged language by taking – don't be surprised by this – the point of view of God: God alone, he said, *previses* in this sense, for the ignorance of the creature reduces it to *foresight* alone. *Prevision* can only be said of Him, who sees all with sure reason because He benefits from the knowledge said to be that of *vision*, from whence He takes on the name and function of *Providence*. The father of the family, for his part, the model of the wisest of men, does not act or think except with *foresight* because he can barely *glimpse* anything of his destiny, however lacking in randomness it may be, for destiny, chance, ignorance, the narrowness of his view constrain him. How better to summarize the relations of reason and existence, of deduction and the map?

The whole question concerns the complete or merely fractional knowledge of the future, with the creature's limitation only letting him divine a part. The present alone belongs to humans, the total future belongs to God alone. So Voltaire, siding with Napoleon, gives the latter's position reason. And this reason, theological, scientific, linguistic and experimental, both rational and reasonable, inspires scientists and sages. Therefore diviners and Lamarck are liars like the rainmakers and prophets of the weather. Must one think *temps* according to the complete knowledge of an orbit or a trajectory, or according to the uncertain and fragmentary knowledge of the climate and meteors? Does God also predict *temps*? Which of the two?

Retrospectively, one is surprised at how far behind Voltaire was in relation to the scientist, Voltaire, who is nevertheless praised for having introduced Newton, which is to say the mechanics of the system of the world, into continental Europe, but above all at his theistic elevation, as compared to the mechanist-astronomer who, for his part, entered neither into divine counsel nor into divine language.

### *Knowledge and non-knowledge*

But what, again, was there to be frightened of in prediction and meteorology? Of commitment to the future, certainly, of the arrogant seizure of the site of God; of the vortex model, discredited by the victory of the Newtonians, without a doubt; of chance, of chaotic disorder, surely: the word 'meteors' quickly quit the climate and clouds so as to only mean, in our time, bolides or aeroliths, thus getting back to the territory of rational mechanics; of probability, lastly, about which no one remembers today that this word originally meant what one can prove and not what one can or can not predict.

Tell me what you exclude, and I'll tell you what you think. The things that are put outside of science, or outside the memory of the history of science, are always excellent at educating us about what passes for known. The person or thing that is chased out or expelled teaches us more about those who exclude him or it than all the speeches they give about themselves. The praise and publicity of canonical science is called, in a noble term, 'epistemology'. For three centuries, meteors played the role of the excluded from epistemology, of what must not be considered or conceived of as a science. The *temps* that is time had excluded the *temps* that is weather.

For how long? Up until this morning: our generation had learned, once again, at the school of Gaston Bachelard, that we had to confine the elements, air or fire, earth and water, the components of the climate, to the dreams of a vain and lazy poetry: on one side, canonized knowledge, epistemology, awake reason at work, on the other, the imagination, tolerated provided that it remain on the exterior,

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<sup>29</sup> Both 'time' and 'weather' are in English in the original text.

on the side of sleep and the humanities, which are judged to be dreamlike. The height of paradox, it was necessary to repatriate the powerful external world of rivers and winds, of plains and volcanoes, into the tranquil and moist intimacy of the sleeping subject. Regressive compared to the positivist naivety itself, this division takes up that of Michelet again, whose work, on the one side, constructs the monument of History, the work of reason in time, and, on the other, indulges in the sabbath of sorceresses and natural history, sea or water, mountain and earth, the bird in the air, meteors again. But at least the tearful old chatterer, for his part, foresaw that future knowledge was always born from the sabbath.

In both cases, could one describe the unknown of Reason better? Yet, from this non-knowledge of the weather, of the elements, of the soft earth and of heated fluids, the system to come emerges like Aphrodite from the marine noise.

### *Solids and fluids, again*

Determinism and the devout thought of the world's order, however, are not enough to explain this partition. So read, in addition, epistemology itself, whose unmastered language sets rigor and consistency in opposition to the *flatus vocis* – fuzzy, diffuse, confused, cloudy – that express nothing but wind. Supporting consistent reasoning, foundations, solid and coherent, resist the vague, the nebulous, or even worse, horrible mixture, unanalyzed: rare are the notable quotations where this latter term isn't accompanied by a pejorative epithet. In the metaphors used in the theory of knowledge or in the cognitive sciences, the distinctions solid/fluid and separated/mixed function almost the same way as those of light and darkness or the pure and the impure in the past and recently, but, if I may, less brilliantly, in a hidden and therefore more effective manner. The epistemologist is repulsed by a soft system, or worse, a viscous one.

The time of rational mechanics triumphs on the terrain of prediction, on condition of remaining within the regime of solids. More difficult, subtler, nonetheless more ancient, as one sees in Lucretius, the mechanics of fluids was still not able to demonstrate, in the epoch of the Enlightenment and the triumphant system of the world, that birds fly: in a forgotten paper submitted to the Academy of Dijon, d'Alembert proved, by consistent reasons, that they could neither fly nor glide. No one received the prize that year, since those who demonstrated that winged creatures could take off had made a mistake in their reasons and those whose papers didn't stray from reason demonstrated they didn't fly. So in those times, following correct reason, Kant's light dove and Hegel's bird of Minerva stayed on the ground or fell down to it owing to ignorance of (or contempt for) the random turbulence of the air, which, nonetheless, alone supports their wings and makes their flight possible. Does the Mind depend, nevertheless, on what it disdains?

Happily, science moves more rapidly than the idea constructed of it by philosophers and the scientists themselves: and so it happens that, surreptitiously, under the remiges of birds, the turbulence returns, refused in Descartes and erased in Lucretius, even though the epistemologist doesn't catch up to the audacities of the science he talks about. After the thermodynamics of gas and the theory of more or less viscous turbulence, the old wooden tongue or cant that always holds forth on the hard and less hard sciences or knowledges keeps vigilant.

### *The circumstances of the map*

Another example, in another flow: towards the magnificent end of his twenty-fifth lesson of the *Course of Positive Philosophy*, Auguste Comte devotes himself to an appraisal of the theory of tides. After having reminded that Descartes was the first to notice the preponderant influence of the Moon on

this quasi-periodic phenomenon, Comte observes that Newtonian mechanics suffices to explain it because the predictions of the tide table, in theory at least, can be boiled down to the laws of gravitation: the *temps* that is weather again gives way to the *temps* that is time.

So Auguste Comte reduces to circumstances the fact that a fluid mass lies between the contingent jagged coastal outlines that harbor the ports serving as the bases for numerical calculation. Did he forget that the words ‘rhythm’ and ‘undulate’ first meant, in Greek and Latin, a flow? Everything happens as though science, its philosophy and its history were afraid of leaving the solid phase, something that Bergson alone had seen in opposing the positivist system, which was based on the rational mechanics of stable bodies ... But we still hesitate to construct a system from scratch because this verb and this noun evoke things that are stable due to being hard and coherent. Do we remain prisoners of linguistic habits and, moreover, of a contempt for factual singularities, which Comte leaves to the detail of maps?

### *The site of evil on the map of the sky*

The term ‘climate’ knows no other origin than ‘inclination’, doubtlessly that of the ecliptic. Yet precisely this word ‘inclination’ was for a long time considered – from Milton’s *Paradise Lost* (10, 668-670) to Thomas Burnet and the abbé Pluche, from Rousseau’s *Essay on the Origin of Languages* to *The Purchase of the North Pole*, the novel by Jules Verne, all in all quite recent – to be a malefic effect of original sin, a trace or symptom of the transgression upon the world, which had to be restored by rectifying its axis; the invention of the vernal point even changed the traditional shape of the cross, which was previously drawn in the shape of a tau. Yet, without this chiasm, there can be no climate. Yes, this inclination marks, on trajectories and orbits, which measure *time-temps*, the site where *weather-temps* is decided. Does climatic unreason incline, warped and never straight, as though marked with culpability? This inclination twists the system. Here is, perhaps, in the universal order of the rational time of celestial mechanics, the deep, astronomical and destinal, malefic reason for the English legislation, for the Emperor’s wrath, for the murder committed by Voltaire, for the history of science’s forgetfulness, for the unknown of languages and disciplines: in this cross, one *temps* crosses the other. What a superb locating of space through the two *temps*!

The vaporous scarf of atmosphere and the oceanic robe of water, that is, the entirety of the turbulent and fluid cloak that surrounds, like a very slender circumstance, the moving and deformable floor of an earth whose soft mobility we’ve recently discovered, rolling on a catastrophic fire, including the dry deserts and the great banks of ice, form a stable enough if vague system so that the biosphere can find its contentment and its perpetuation there, so that we can build our houses there, so that our speculations can define relatively regular climates there, so that we can indulge, ever since the Neolithic, in agrarian practices there, before a few arcadian pleasures. Can we still think that evil comes from irregularity if we owe, in addition to the first spatio-temporal reference point, the world and our existence to it?

Better than the scientist, the farmer relies on flows, both feet posed on the regularity of the viscous glebe, which is infertile if it remains invincibly solid; stemming from the torrents of earth, from the emanations of the air, from the flowing waters and the flowing heat, the art of cultivation uses cunning to circumvent the climate, which mixes the elements and reigns over the field, in which famines and thin cows appear more often than bumper crops: language lets out a sad plaint here, since the French word *tempête* [tempest] is constructed from the word *temps*. Conversely, this system, although stable, appears tremendously variable, irregular, suddenly traversed by catastrophes without predictable rhythm or return. Because of meteors, those scourges from the sky, we’ll shiver with cold and wander without shelter, dying of hunger: and so the anxieties and the evil from just now return.

### *Victory and defeats, economy and expense*

Etymology describes meteors as events of the sky that cause one to lift one's head and eyes, and whose appearance and development happen on high. Even higher, in the astronomical system of the world, precise mathematical prediction triumphs. Higher at any rate, the sumptuous disorder resumes ... The *temps* of barometers crawls beneath the *temps* of chronometers: two systems are opposed, the one reliable and rational, the other unpredictable and capable of evil spells. We seek to ward them off by drawing up, in order to examine them, weather maps.

Experiment teaches that we don't recover from its victories easily, whereas failures prove to be full of information. We will never get over the indisputable successes of Kepler, of Galileo, especially of Newton: the greatest success for the smallest cost, this is truly a divine work. Lower in the sky than those of Astronomy, the regions of meteors remain the share of the poor: phenomena that are unstable, fluid, volatile, subtle and difficult, lacking easily accessible abstraction, obliging the collection of an infinite amount of information, clearly deprived of simple regularities, teeming with vagaries ... that is to say, information at the greatest cost for predictions that are rarely confirmed, provoking the uncontrollable laughter of the public.

This is the non-system par excellence and the opposite of economy, both in the sense of the order of the world and in the sense of savings and productivity. If the Greek astronomer falls into the well, provoking the pleasant mockeries of young Thracian peasant women, snow falls on the meteorologist who, the day before, had promised sunshine, arousing the anger of farmers and vacationers. Every morning, the weather goes haywire, and meteors sum up the errors, which appear less laughable here than the relations pleasure/price or investment/profit. Behind prediction hides economics, in the most classic sense of the word: the balance of expenditure and acquisition. In this sense, does Meteorology cost too much? Does it remain malicious because it spends extravagantly?

### *Predictions*

We seek to predict the weather to come, locally. But several predictions are mixed together here, which render the exercise difficult: classically deterministic, the first prediction is based on the mechanics of the atmosphere, the movements of cyclones or depressions in the assemblage of vortexing cogs; better known, statistical, conjectural and linked to current conditions, the second one takes account of a crowd of factors, global and local, information accumulated from every source; but thirdly, we take account of the original roles played by the large banks of storage, of exchange and of transportation: deserts, ice sheets and, especially, oceans; these regulators function in measures of time different from the first two kinds of prediction. One begins, likewise, to recognize the very long-range, quasi-cyclic interactions that contribute, for example, to the appearance of the Pacific current passing along the coasts of Peru. If, in the end, meteors became classed among chaotic phenomenon, they could be called both deterministic and unpredictable.

The *temps* or weather that is or will be therefore adds together the *temps* or time that runs from cause to effect, plus that of probabilities, and lastly others that one could distinguish in a fan shape or bifurcating, linear and circular; it therefore unites the times of Newton, of Boltzmann, of Bergson – deterministic, entropic and statistical or carrying improbable new things. Plus, perhaps, that of chaos. Does weather add together every kind of measurable time? Can we understand the seasons, variable but constant, by integrating at least three times or three measures? The best known systems presuppose the first one only.

### *Return to circumstance*

The obvious and informal sense of the word ‘circumstance’ brings it close to an improbable or probable fortuitous event; so the time of circumstances strongly resembles that of unpredictable contingencies: the Pont Marie, once the most upstream bridge in Paris, crumbled under the pressure of the debacle and the broken ice swept along by the Seine – who could have predicted it? – and, two centuries later, the Pont des Invalides imitated it. When will the third happen? That, they say, will depend on *circumstances*. But this circular prefix can refer to regulatory loops: is there a multi-century rhythm for the return of the debacle of the ice? Lastly, the root of the noun itself remains the same as that of ‘system’; a stability or invariance faithfully described by deterministic science and deterministic time: ice pushed somewhat by water destabilizes the pylons of bridges. Meteors mix times in the manner of *circumstances*: thus they form, all the same, a system.

The synchrony (the addition, the sum, the union, the product, the interlacing, knot, tissue or interchange, the composition, the conspiracy, the syrrhesis ... what have you) of these times, which are each very different to the other, describes the aforementioned *circumstance* or the system such as I understand it. Not more complex than any other, and in particular than the systems of 17<sup>th</sup> century mechanics, in the number of elements or of interrelations, this system differentiates itself from them through this synchrony. Undoubtedly, the usual and the 17<sup>th</sup> century systems remain simple and easy because one can define a single time in them, or rather that long line that Bergson, with reason, reduced to space.

Our living organisms experience, they too, the synchrony of many times: Newtonian, they get up and go to bed with the sun, carry clocks within themselves, which go a bit crazy during rapid journeys across meridians, die, exhausted, worn-out, covered with wrinkles, following the second law of thermodynamics, but, unpredictable, Bergsonian or Darwinian, sometimes reproduce themselves as improved little girls. Through the same synchrony of several times, the time of our body resembles the course of meteors.

About this synchrony, difficult to grasp, and which I have recently attempted to describe regarding the origins of *Geometry* by utilizing the theory of percolation,<sup>30</sup> we can only say one thing: that it exists and must be called *temps*, which, in its expressions of origin, means, precisely, this alliance or this sum, this mixed state: read them, in fact, in the verbs and words tempering, temperance, temperament, temperature, tempest and *intempérie* [bad weather], all of them terms from the same family as the elementary *temps* that composes them, and which designate, together, in fact, a mix whose functioning or figure precedes, unites and federates the two senses, chronological and meteorological, of the word *temps*, single in the Latin languages and corresponding to two separate terms in the Germanic languages: *time* or *Zeit* and *weather* or *Wetter*, languages that have forgotten or willingly left behind this strong unity, of agrarian origin.

### *The pictures of historians become animated*

So if the time of the universe or of lives appears difficult to grasp because its elements, mixed, are so reluctant to be brought together into a whole, how much must the time of history, whose sum federates the chaos and the rules of the things of the world, the multiple evolutions of the living, the exchanges between groups, the monetary, commercial, economic circuits, both heavy and volatile, the wars, which are frequent, and peace, which is as rare as the unpredictability of the works of the mind ..., become inaccessibly inextricable and complex!<sup>31</sup> One admires the naïveté of philosophies that, in

<sup>30</sup> See, for instance, pp. xxxiv-xxxvi of Serres’ *Geometry* (Bloomsbury: London, 2017).

<sup>31</sup> Since weather isn’t the foremost meaning of *temps* in the following passages, for readability’s sake, I will translate

the past, have claimed to expound the meaning of history and explain its laws. Due to the infinite sum of information that it implies and the same synchrony of several times, the time of history appears rather to be modeled on the course of meteors! How might our atlas be able to animate historical pictures?

*An innumerable set of relations may or may not attach a great number of facts to each other: this is the question of history, the question of existence and the problem of the map. For how can the three of them be conceived if not as innumerable multiplicities of states of affairs, attached or not by incalculable quantities of relations? Yet, here and there, the number of certain bonds grows locally to a figure that exceeds, at a point, some given threshold, so that a more global agglomeration begins or, if you like, a flow is born or dies: this is a time, a direction, as well as the capture of varieties henceforth readable by historians ...; everywhere else, because the aforementioned relations remain few in number, everything remains isolated, in its locality.* In seeing this animation, doesn't it seem like the house of 'The Horla' or a burning forest in the Midi? Or, more slowly, a springtime flowering?

What unimaginable soothsayer could predict, then, in this picture, through where a given element of flow will pass, how many seconds or centuries it will remain alone, blocked or dancing behind some weir, and at what point, suddenly, having passed the transition of percolation, a flaming torrent will carry it yonder, in a global relation with all the others? Will he tell its chaotic behavior? Yes, rivers, time, the world and life percolate, as, undoubtedly, does our soul (an unexpected mixture of porous memories and forgotten things returned) for our loves and our dreams, and history as well, whose decipherable map is now drawn up.

Intertwined, complex, numerous, this model of the time of history should appear more probable and sensible than the one that wanted us to believe it follows completely simple and easy rational laws, which, if they existed, we would doubtlessly know and, indeed, have mastered by predicting their results. But who, conversely, doesn't see that now our technological means of storing data, of performing simulations, of staging possible worlds ... make these animations possible? Who, consequently, doesn't see algorithmic reason catching up to mechanical reason and covering, more fully than it, the large multiplicities that obliged us, in the past and recently, to describe existence, to represent the individual and to draw up maps?

### *Local, global*

So let's recount the story of one small singular local element, of one atom, of one grain of sand, of one sliver of liquid, among the immense brewing or mixture of these multiple confluences. It passes and does not pass: for, here it is, locked in, mobile and immobile, imprisoned in some turbulence, behind some weir or cold rock, going in circles like a squirrel in a cramped cage or Friday on his island, and there it is, all of a sudden, swept, swiftly, ten, a hundred kilometers from there; it travels the high sea, visits the entire earth, then returns ... wandering chaotically. Sometimes its journey, at an end, comes up against obstacles or obstructions; sometimes we find it departing along an infinite prolongation: is it going to visit the globe? What local map does it draw up during its first journeys and what global chart or world map for the infinite prolongation?

This is like a fly in flight: it passes in hurried, choppy, discontinuous zigzags, changes course in an unpredictable manner, suddenly crosses the entire room, from one extremity of the chamber to the most distant dish cabinet, in journeys that are short, medium or long, as though decided by throws of the dice, stops, turns about at length in a tight area, knocks against close or adjacent obstacles, the mirror, the window, the lamp, the table, bustles about in a prison, turns about on a small island, sets off

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*temps* as time. But do remember that the sense of weather may still be present in it.

again ... and now it flees out the open window. Should it enter, by chance, into an automobile or a plane, it will then find itself on the other side of the Earth, where it will resume its dance, which we consider mad, but which displays – wonder of wonders – the reason and wisdom of the world. Yes, the fly truly defines the local, here and now, by drawing its borders with its flight, weaves a singular islet, seems to remain in this chosen niche, but, all of a sudden, carries news from this particular place to distant and unexpected horizons, where it resumes weaving, making a niche, spinning an original place ... but now here it is setting off again. It localizes itself, certainly, and delocalizes itself, assuredly. What invisible web does it weave, what network, what map does it draw?

The atlas itself. The fly bustles about at length around the mouths of the Seine, races from Aquitaine, among the blossoming fruit trees, to Kyoto to construct a modest swing there, annoying or calm depending on the climate, travels around the world by following the trade winds, patiently draws the maps of the folds of life, of the room and of the house, sets off again in search of the yeti around Everest and Ama Dablam ..., writes the book you are reading, you, an active reader and worker, who would do better to devote yourself to idleness, lying on your couch and following the capricious journey with your eyes. The fly and this book weave together the local and the global by intensely scouring singular localities, fine vicinities and delicate proximities: particular places whose distance guarantees the global reach of the voyage. Via prolongations that are brief or longer, discrete or continuous, the fly, the grain of sand or the element of flow in the flux construct the universe place by place, like the words of this book.

#### *An atlas of the paths of method*

Their method, and you must understand by this word their route, their road, their path, the line of their journey, their method, then, which is as unexpected as intelligence, as sudden and rapid as the mind, never follows a straight line nor any curve predicted according to a prior law – for stupidity, which is repetitive, is always predictable, even and especially when it appears rational – but, on the contrary, tangles and untangles complex and snarled balls of yarn, interlacings of knots and bifurcations, which suddenly start to resemble a tapestry seen from behind: exquisite singular and very much differentiated places that hold together due to a work that's global because local, extensive because tied together. The method ties together neighboring places and distributes them into the distance.

The journey of this element of flow in the river, of the living fly, of a historical event therefore resembles that of Hermes or of passing Angels. Angels fly in this way to bring everywhere the good news, local and incarnate, to love one's neighbor, the person close by, one's fellow, and yet cross the entirety of space at the speed of thought. How, passing straight through the forest, could Descartes have drawn up its map?

Curiously, these chaotic paths are practiced better than they are defined. A piece of labor, some acts, certain concrete operations, produce these interlacings in a simple and easy way.

#### *A map on a square of bread dough*

Let's not forget that these movements in space create time, that is to say, mixture. What then is mixture? We know it poorly, but we manufacture it every day. As an example, let's knead some bread dough.

The transformation brought about by the baker repeats the simplest operation called, in geometry, automorphism: it folds a square over itself, stretched beforehand, once from top to bottom, the following time from one side to the other, a manipulation repeated by the baker's boy, without any

mystery, and which allows the telling, once again, from any point of the square, of the same story as that of the fly or the element of flow. For, despite the simplicity of the folding over – a single fold [*pli*] for two words! – all the points in question, all the mixed grains of flour, of salt and of water, start to wander in an unpredictable and chaotic manner over the entire extent of this small square of space or dough. They were stuck for a long time in small vicinities, and now they are suddenly launched to the other extremity of the viscous volume: they occupy the local, they invade the global, now they are in other unexpected places that they weave in their turn, and then they set off for elsewhere. What a magnificent animation of history, of geography, of meteorology!

Yet, the global, the globe, the ball of dough are kneaded all the better, become all the more homogeneous because the various points of the dough have accomplished their strongly differentiated chaotic wanderings: common, doesn't this experience reverse the uniformities we were taught by 17<sup>th</sup> century reason?

Yes, the immense and unexpected, reasonable and rational, evident but hidden, complicated and simple lesson of the fly, the Angel, the point or the atom of flour shows that to unify a global homogeneity, multiple diverse little places must move chaotically. In moving about, does the different manufacture the universal?

Sitting beside the oven, Heraclitus had neglected to put his hands to the dough; reclining at the Banquet's table, Socrates hadn't mixed its sauces, nor had Montaigne or Apollinaire ever sailed on the rivers they didn't see flow.<sup>32</sup> Occupied with small gods or privative loves, they had all moved the concrete world of singularities to the back of the scenery. Yet it can only be one of two things: either one attains a universal concept as in the theater, in words and not action, or one finds it by pulling hard at the oars against a counter-current; here, a local work, humble and manual, kneads the dough, so that this kneading gives each grain as strong of a chance of remaining in its own vicinity at length as of passing slowly into nearby zones or of rapidly visiting the entire periphery.

Wonderful and staggering news! Plied by the baker's boy, the mixture, in the kneading-trough, creates the simple global with the complex local and vice versa; creates the one, in a ball, with the diverse, in grains; the regular with the irregular; a fairly smooth order with disorderly movements, the general with chaos, the predictable with the unexpected, the universal with singularities!

This is how Spinoza's hand ground telescope lenses, which were all the more finely sanded because the abrasive movement of his palm danced without regularity so as to smooth out the defects stochastically distributed on the surface of the glass; this is how Bergson's spoon, to make the sugar dissolve and give an idea of duration by making the atoms dance chaotically, assured the homogeneity of the sugared water. Philosophers, did your hand know how to do what your reason was ignorant of? Holding the caduceus, a mixing wand surrounded by interlaced swirlings, the angel of ancient times, Hermes, who must be imagined as being turbulent and unruly, passes in describing a trajectory undoubtedly as erratic and capricious as the points of this mixture. When, likewise, Angels, who are rowdy, pass or fly like flies and atoms, they thus weave the Universe of divine ubiquity. Via what paths do they carry the messages everywhere? Via the roads of chaos. Thus, via mixture, the set of grains weaves together both places and the Universe: via capricious changes of the there, the beings-there, outside-the-there, fashion the global.

### *Bread and money*

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<sup>32</sup> Instead of *jamais* [ever], Serres writes *ja-jamais* here, mostly likely alluding to a French children's song: *Il était un petit navire qui n'avait ja-ja-jamais navigué ...* It was a little ship that had n-n-never sailed ... Apollinaire wrote the famous poem 'Mirabeau Bridge' about the Seine and past loves. As for Montaigne, perhaps Serres has his comments regarding the Dordogne at the beginning of 'Of Cannibals' in mind here.

In passing, fittingly, let's linger a moment over the French word *boulangier* [baker], a black box that contains beautiful secrets. So let's open this small oven: the *boulangier* makes bread in the shape of a *boule* [ball], and he achieves this through well-defined movements that science is beginning to describe but which natural French, ahead of the learned as is sometimes the case, calls *bouger* [to move]. In the aforementioned box, a single word is repeated and says everything: to make the *boule*, this *boulangier bouge* [this baker moves]. By what movement? Exactly the one you observe in a liquid that *bout* [boils]: again, the same word returns. So if you designate the motion of *bulles* [bubbles] in a boiling bouillon, you will have described both the thing and the idea by taking a tour of the semantic field of the natural language word: brilliantly, this word describes the *ébullition* [boiling] that, by means of the journeys of the *bulles qui bougent* [moving bubbles], constitutes the unitary and global *boule*.

To attain, through sketching certain movements, the globe of the World or the global in general, just say this word from simple language. Plus the fact that the word *billet* [bill or banknote], which is in common use in banking and finance, finds its origin in the same family and refers, again, to the same description: for how does one manufacture a homogeneous universe through the economy and exchanges of money if not via the movements, identical, of bank bills? So how many times does each one, going from hand to hand, travel around the world, after having remained squeezed in a hidden account or some discrete buried woolen stocking, by moving, again, like an atom, the fly, a grain of flour in the dough, an Angel, Hermes ... or a bubble in boiling liquid? So money has been volatile since the first invention of currency!

With his hands, the baker traces the paths of a method that is simple, concrete, certainly, and also very powerfully abstract, scientific or rational, but already predicted and described by everyday language.

#### *A construction map: a misfit word*

A fluidity, general and variable, conditions these various constructions of the universe, or those that relatively recent practices work towards, which are rather like the baker's, in fact. But the term 'construction' suggests work on solids – masons' stones or port jetty cubes – too much to provide a faithful image here. The Industrial Revolutions separated our hot works from these cold weight-bearings and, in this way, brought us closer to the natural ways of the Earth. For our technologies attain the global universe thanks to the journey of local elements in a hot fluid and a viscous environment: the Universe itself is made in this way, for example, in meteorology. Pollution marks with its stains this coming together of our works and weather: so our uses as well as our abuses now follow the same prolongations so as to reach the same dimension as nature.

Since the old technologies of construction focused on crystals or stones, which appeared to us to be quasi-invincible, far from ever taking the routes, which I just called methodical, towards the universe, these prolongations went from place to place by easy and simple paths: there was no globally expanding work, methods with straight, rigid and finite paths, no pollution. It didn't concern the whole of the concrete at all, but only one of its parts, solids. Towards where would you expect a rock to expand?

#### *A drawing of the concrete*

In the past and at its origin, the adjective 'concrete', which was even a bit alchemical, served as an equivalent of 'viscous': contrasted with light fluid, it designated liquids of thick consistency; perfumers still say a 'rose concrete' or a 'jasmine concrete' for the relatively solidified product obtained

by the extraction of fragrant essences from plants. The root of the word expresses the result of the growth (*crescere*) of several elements put together (*cum*) so as to arrive at another body. One might think it the product of a chemical reaction! In sum, its true sense brings it close to the dynamics of mixtures. This growth resembles a sort of prolongation.

So we now live in the concrete, in the clearest and the deepest sense of this word, in which the growth of mixed elements produces a new real, a universal one, through unexpected expansions and prolongations. In this sense, only confluence is concrete. The universe is woven from these moving nodes but, at the same time, our hot and viscous works accelerate the growth towards this universe. These mixtures cause different elements to grow together. These intersecting paths of growth go towards the universe.

Hence the vast distance between this new conception of the universal and the old one, which, inspired by the empty and homogeneous world of rational mechanics, considered a transparent space where a single law, that of light or of the strength of the Sun, reigned: nothing new under its rule. It resembled an imperialism. Conversely, let's take love as the ensign of my rule, whose delights make two beings grow together.

### *From maps to the world map*

Curiously, a certain Stoic physics returns, in which all the flows conspired, in which the chains of determination intersected in causing and caused sequences.<sup>33</sup> Why did we ever abandon these cycles? Because of dividing up. For experiments require that variables – constraints and circumstances – be precisely isolated in order to measure or establish a single causal sequence.

These divisions imitate the edges of invincible solids wonderfully. On the other hand, as soon as experiment approaches gaseous, airy or viscous states of matter, the dividing-up requirement changes and transforms, for the chains, which are long, are prolonged very far and are difficult to cut up without changing the phenomenon, which is rarely localizable. Thus, from the beginnings of thermodynamics onward, real questions were posed regarding open, closed or enclosed systems, their walls, whether porous or isolable, and their exchanges. Already, 17<sup>th</sup> century reason was escaping, in the sense of a container that leaks or whose contents expand. Come from Prometheus, fire and heat opened an old and new Pandora's box! Far from rational mechanics, these works brought about a new rationalism, or brought back, rather, an old reason, from which proceeds, at least from a distance, the Universe that we're considering and to whose modeling we are contributing.

Weather maps, their turbulences, their tempests and their claims to predicting the local weather, there or here, in fact resemble models of physics that were forgotten all too soon. Through mixture and percolation, the climatic system of world weather's *temps* offers, then, the most beautiful of the models of time's *temps*, which we formerly understood and measured only with the aid of the system of the world and that pocket orrery we called a chronometer; but also the surest of the models of the universe. The planet resembles the ball of dough kneaded by the baker. From this clay, which is soft and variable, fluid and volatile, unpredictable and fairly stable, yes, from this modeling clay rose the most beautiful and truest of models.

Once again, language offers, at an unexpected and interesting moment, several subtle surprises. A relative of architecture, the term 'system' fits the thoughts that occupy us today as poorly as the word 'construction'. Unlike the word 'concrete', taken at its origin, or this viscously modeled model, it in fact implies that certain things hold together in a stable and constant manner, solid. So it would be better to abandon it due to this narrowness; concrete confluence wins out by far over it. Thus the

<sup>33</sup> To understand the use of 'conspire' here, it helps to remember the etymology of the word and that an important concept in Stoic physics is *pneuma*, breath.

Universe models its unity through innumerable water-pourers [*verseaux*], which is different from the systems previously known or constructed.<sup>34</sup>

What's new under the sun? Not only the *temps* where time is modeled by weather, but also a global distribution, a universe that is single and unceasingly taken up again in its variations.<sup>35</sup> The paths from the local to the global don't in any way resemble a homothetic extension in an empty space-time in which the tiny would imitate the immense and the big would be reduced to an inflation of the small, nor do they resemble some linear chain of causes and effects. Of course, we change scale when we pass from here to there and, especially, from these various places to the universe, but we are beginning to know and be able to describe these changes and passages. That's why I've insisted on specifying the lines with which today's philosophy is writing its atlases and the universal drawings it is ending up with.

### *From the world map to a network of information*

So these fluid reciprocities are mixed or kneaded together so perfectly that few places are unaware of the current state of the others: they receive knowledge of them through messages carried by these intersecting flows, in which substances function as information mediums: information, in its turn, flows, runs, passes, percolates, unifies. The experimental or natural sciences learn to read, on these substantial, fluent and mixed mediums, a part of the information that is found mixed, coded, printed or written there. Do our technologies of the mind – codings and decodings, writings, printing, transmissions –, in the style of Hermes, also imitate nature the way our heavy and fiery technologies, in the style of Prometheus, do? Do intelligences, be they individual, collective or artificial, imitate an intelligent Universe?

Thus: should the midsummer heat in the central desert of Australia change, then the normally regular winds along the Equator become unsettled; consequently, El Niño can appear, whose course undoes the climate of Peru, whose variations contribute to the formation of cyclones in the Caribbean in the Gulf of Mexico, whose Gulf Stream is affected: then, Brittany's weather changes, therefore that of Copenhagen and of Saint Petersburg as well. But where, then, do the winds of the Urals go? Through what still unknown networks do they touch the Australian heat? These flows, of fire, of air or of water, whose circulation resembles those described by the ancient Stoics, bring news of Alice Springs to the Îles du Ponant: the coded message doesn't let itself be easily deciphered, but we are beginning to read it. Off the coast of pointe Saint-Mathieu, it should inform the first Frenchmen it meets about what is happening in the Bahamas!

Volatile elements, mixed, form material mediums for information, which is even more volatile and whose mixture or modeling contributes even better to the formation of the Universe, which all this concrete causes to grow. The logos-based message is a part of the material-based river and is born from it: rise up, desired storms ... Aphrodite, naked and beautiful, emerges from the waves; the Word comes out of the flesh of the world and, in return, creates it as World. And since information is proportional to rarity, miraculous chance contributes to intelligence in it.

Strangely, meteorology's world map prepares to construct our communication networks, to use them, to think them; here and there, the messages that transit flicker in the same way.

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<sup>34</sup> Water-pourers = *verseaux*, which, like universe, also contains *vers*. Not only are they liquid, but these multiple *vers* of *verseaux* make up the uni-verse.

<sup>35</sup> The *temps* where time is modeled by weather = *temps*.

*Living, inhabiting, thinking*

Fluent, viscous, unstable, maybe chaotic, meteors therefore offer philosophers stronger and more refined models than 17<sup>th</sup> century architectonics, which is bound to solids and thereby fixed, heavy, poor and stupid: the smallest earthquake is sometimes enough to destroy this architectonics, but what would deconstructing meteorology mean, since it includes and presupposes the earthquakes themselves, typhoons and tsunamis? What colossal baker presses, breaks and kneads its dough? Here then, given, is a system that remains globally stable while withstanding diluvian floods, deep avalanches and large cyclones, eruptions or droughts, the entirety of natural catastrophes; in equilibrium, therefore, at least a relative one, throughout the slowest or the most sudden movements, the gentlest ones and the most violent, the most regular, the most disorderly ..., throughout the most decisive and profound destructions, telluric ones, volcanic ones, transgressions and glaciations ..., throughout slower than slow processes of wear and abrupt breaks; stable throughout lasting variations, even throughout several variables; quasi-deterministic throughout all the possible chance.

And, through these obstacles, information passes.

Throughout the long history of the sciences of equilibrium, throughout its progressive adaptations to all the movements and all the imbalances, which nevertheless preserve a residual invariance, does there exist an organization that would be more complete, more supple and, lastly, more resistant and strong? Has one ever seen a stability as extensive throughout equally monstrous deviations? Can one conceive of a better economy? All the invariants throughout the variations that have already been discovered are found there; all the anti-systematic phenomena as a whole seem to give themselves free reign there and nevertheless contribute to constants that are sufficient for us to have survived there, at least until now, and for us to have constructed there, over millennia, our residences, caves, huts, stone houses, hard woodworks, flying tents, pavilions ... whose folds tremble in the vagaries of hurricanes and the chaotic circumstances of history, and from whence we hear, outside, some beginnings of speech and of knowledge of the world.

If life, lastly, cannot be thought without time, the general model of flow, which is continuous and discontinuous, that meteors display – a model bushing out, bifurcating, continually percolating, mixed with randomness and necessity, far more supple and relevant in its multiplicities than the linear model, continuous or discontinuous, of a tradition more attached to measuring it than to describing or explaining it – is suitable for the evolution of living beings. For species percolate: according to whether certain variables remain below percolation's threshold of transition or abruptly exceed it, they appear or do not appear. Does this solution, in which the time of life comes together with that of the world, unite Darwinism, which privileges the discontinuous leaps characteristic of organisms, and the science of Lamarck, wrongly taken to task by the Little Corporal, since meteorology greatly interested the biologist who described continuous transformations according to natural circumstances outside these organisms?

If yes, then a truly universal time would open up, since inanimate things give us a model of it, since living beings reside and flow in it, since history could be understood through it, but also since psychic duration and invention in thought, which are unpredictable and bursting forth with new things, appear in it.

Formerly condemned by the guardians of order and the counters of time, the system – but can it still be described in this way? –, the system that appears to be the worst – and even bearing the trace of evil – because it is flowing, fluent, random and chaotic reveals itself to be, in reality, the best and most adapted to life, and the most unthinkable system offers us the most powerful model of thought or of a light, supple, tragic and tremendous intelligence.

Let me at least dream of an understanding on the part of World: on the meteorological world map, on the charts of the methodical paths drawn up a little earlier, in the interlacings shooting out from the living, even in the animations of history ..., its electroencephalogram trembles just like ours, chaotic, unpredictable and regulated. This is why, objectively transcendental, all things are comprehensible.

Can we visit the detail of this understanding? More easily than our own, in truth. For the universe displays, uncovered, immense deposits that strangely resemble what one formerly called the faculties of the subject: ice sheets, deserts and oceans, gigantic piles of ice, of dryness or of water function like memories, banks, stocks, retention and regulation of the information that generalized rivers receive, exchange, transmit and sort, as if by actual intelligence. And since every flow reacts to every other flow, can one also speak of sensibility? Now compare these deposits and these rivers to our hard technologies and soft technologies: to our codes, sculptures, scarifications or writings on recording mediums; to representations and to images on screens ... to artificial intelligence, to artificial memory, to artificial imagination ... Doesn't it seem to you that we do all this less well than the world? And what does it appear to you that we are, compared to it? The old subject, or at least its intelligence, lies outside of us in scattered pieces in the universe of things themselves, but also in our manufacture of crude or refined tools. From the world to networks, we prolong the same drawing.

But who was moving just now? An atom of flour, an element of flow, the fly ... or Guyon, the narrator of 'The Horla', exploring in detail the space of his immemorial residence before launching off on external itinerant paths, or the one who passed, suddenly, from the orchards of his native country to the luxurious spring on the other side of the planet?

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### *Writing on meteors again?*

At the very beginning of this century, a scholar, highly informed they say, wrote that modernity began when philosophy no longer spoke of *Angels*. What science, what wisdom is announced when these messengers reappear there in order to weave, by traveling new routes, a conspiring Universe of breaths and networks? Yet contemporary philosophy, without a doubt, began when it let the sciences take the risk of describing *Meteors* in its stead. What kind of philosophy can be predicted when Meteors rumble in it again, thunder, blow and caress, flow and percolate, model a world and engrave the journeys of a method on the atlas of time?