

ON FOOD

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We live in a world of plenty. Natural riches and cultural artefacts. Human intellect and powerful technologies. We revel in an abundance of energy and information. Everything is available to us. Nevertheless, the contemporary paradigm of thinking is dominated by the principles of scarcity. Holistic approaches aim to sustain our habitat by means of an expanded understanding of Planet Earth. The knowledge gained intends to provide humankind with the necessary toolset to act proportionally and maintain a balance in nature. With this thinking, however, we remain stuck within the confines of a nature that is looked at as an inevitable necessity.

In this work, we primarily meditate upon the notions of *Land-* and *City-Scapes*. We take ourselves into a cataract of indexes and mark two different bodies of thinking which address nature in an orthogonal manner. *Land Scapes* go in sync with the limits of a *Cosmic Mould*. A *Horizontal Scape* immediately frames a *Flat Land* which is governed by *Inert States*. However, *City Scapes* celebrate the plenty derived from a *Wandering Earth*. A distant *Vertical Scape* casts symbolic *Civic Characters*, which are staged in *Venturous Plays* and thus made to talk. This inversion is enabled by the advent of *Informational Thinking and Computational Grounds* and their underlying principles.

The intelligible structure elaborated in the first part of this text requires mediation. We therefore propose a scheme that primarily stages *Specific Scapes* in order to listen to those who think they know what a certain subject is about. We prepare *Generic Grounds* which allow us to erect an *Intelligible Instrument*. This *Instrument* subsequently gets played in various *Sensible Applications*. In order to show the potentials, we embark on *Four Ventures* in the world of food. *Venture 1* casts off naturalised grounds and cultivates novel digestible natures. We confect *Chocolate from Cacao Cell Cultures*. *Venture 2* questions crafts and traditions in the vineyard. We raise a remote *Vine Yard*. This informational instrument allows for the navigation of a probabilistic cloud suspended high above the actual

vineyard. *Venture 3* approaches subjects and objects of wine. We enable symbolic *Terroirs* that lend the wine itself a voice and thus allow for rich *Talks*. *Venture 4* deals with subjects that give values to the object of food. We cast off a *Value Cloud* from which numerous articulations and values of food can be derived.

Thus, we present nature as contingent. Thereby *Intelligible Instruments* bear novel *Viands* which we can render edible and visible on the sensible stage of *Food*. The *Venturous Plays* continue to luxuriate and thereby keep the worth of food as a cultural artefact alive.

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SCOPE AND MOTIVES

When we talk about food today we can do so with reference to an already rich body of acquired knowledge. This body comprises various segmentations. We differentiate food compounds, like protein, carbohydrate, fat, and other nutrients, or essential functions such as the provision of energy,¹ as well as making everyday distinctions such as fast food, diet food, convenience food, novel food, slow food, or organic food. Other labels refer to certain types

of agriculture, trading, cuisines, and consumption or deal with diets, food's safety, or its taste perception.²

These *Food Scapes* set out a common ground for what we can know about food. The various analytical subjects commute between a local level, which encompasses the physical materiality of food as well as our very intimate personal and subjective relation to it during its consumption, up to a global scale where they try to define an adequate relationship between humanity and nature. In sum, these predications aim to frame a bigger picture, a whole which we call 'food'.

The *Food Scapes* are mainly driven by empirical practices. Thereby the synthesis is based on the prior analytical differentiation of distinct parts. The sum of a product results from idealised plans of possible (re-)constructions, to put it in architectural terms. This implies a thinking of food as literally being made up of clearly distinct substances that stand firm and upright. On the level of matter and energy, this makes them a limited resource.

The *Food Scapes* treat nature as a necessary ground. Their rigour and replicability make up the essence of the industrialisation of food.³ Infrastructures and logistics of all kinds provide a global framework for the continuous circulation of local entities. The asymmetrical relationship between the subject and object of food raises the question of who can keep the upper hand—nature or humanity.

Hence we would like to see ourselves neither as the dominator of a delimited, denoted nature that has been already naturalised within a global realm, nor as the slaves of a merely local and forest-like, hardly inhabitable ground, which we all share and attempt to live *with* as well as *in*. Both approaches turn out to be limited, too complicated, or outright inaccessible. Therefore, we do not want to further resolve and interpret food in its man-made idealised and flattened world-image. We choose not to continue to act analytically and descriptively in order to gain an objective understanding. We do not take an external position by the framings of *Horizontal Scapes*, nor do we want to walk the path of an infinite complication by looking for even more origins and grounds. All this seems neither achievable nor appropriate, it merely dissolves what the synthesis of food could really be about.

In order to circumnavigate the framings of clearly defined worlds and their enclosed fields, we follow our intuition towards the riches and plenitude of nature and the desire to discover the hidden secrets and to make graspable the contingencies entailed therein. We have to find gates towards spaces that lie outside the hedges of an empirical reality in order to allow for an appropriate cultivation of nature.

1 "Food, substance consisting essentially of protein, carbohydrate, fat, and other nutrients used in the body of an organism to sustain growth and vital processes and to furnish energy. The absorption and utilization of food by the body is fundamental to nutrition and is facilitated by digestion." See *Encyclopaedia Britannica*, s.v., 'Food'.

2 These are classifications and types of food on Wikipedia. This listing is one amongst several kinds of generalisations that attempt to classify food. See *Wikipedia*, s.v., 'Food'.

3 Hence we assume that there is no food science yet, merely food research, to put it in the words of Heidegger.

The hypothesis of this book proposes to cast off the ground of food.⁴ It proposes to cultivate nature on a symbolic level – the level of information. Information technologies provide novel elements and a different Body-of-Thinking.⁵ Their potential enables an inversion of how we think, access, prepare, treat, and cultivate infinite grounds, such as those of nature.

The computational grounds and the concomitant mathematical thinking make up a novel ground, not in the sense of a common ground, an agreement on a certain state, but as a stable infrastructure that can deal with existing, yet indeterminate mixtures—in-between states—alongside characterisations that are nevertheless not representational but shaped by active and upright *Vertical Scapes*. These *Vertical Scapes* are able to move upon vast and infinite grounds. They allow us to act in an architectural manner and to follow a creative and synthetic path that weaves and joins elements—on an abstract and symbolic level—though without losing rigour and consistency. Thereby they are able to guide movements into novel directions.

The *Vertical Scapes'* corporeal modes enable novel *Ventures*. These *Ventures* can be mastered in an undemanding way, since the *Vertical Scape* allows us to take a central position and circulate the whole world of food around us. The self-drive entailed therein is able to preserve and sustain the worth and richness, the polyvalency, ambiguity, strangeness, and rarity⁶ of that which we refer to as food today. It does so without a pre-defined and clear reference of what this could potentially mean. It enables a digital or quantum literacy. This kind of literacy opens up spaces for agile movements alongside the staging of symbolic, firm, and upright *Characters*. The wider and richer these spectra are, the more meaningful our *Ventures* can become and the more of nature's plentifulness can be further made graspable and cultivated as food.

Thereby this book is staged in symmetry to the great works by Renaissance men such as Pico della Mirandola, Alberti, and Descartes. They were primarily talking about what was already out there.⁷ Pico della Mirandola was looking for principal reasons

4 We do not start with that which we do not like. Neither do we primarily problematise that which we already know – this can be seen as merely a research activity, see Heidegger (1977). We do not want to condition the reality by problems and form cases that are potentially able to resolve them by looking for the last matter of a fact. We do not want to ground reality. With such an attempt we would just follow the modern scheme of making distinct statements. We want to immediately neutralise the problems and rather make a charming argument by characterising lively *Viands* and enable indexical *Talks* about what is at stake when we talk about food.

5 This notion shall be seen in symmetry to Michel Foucault's approach in *The Order of Things*, to grasp bodies of thinking in certain historical periods, on an abstract level of analysis across disciplines which are influencing the way we deal with real world phenomenas – be it scientifically or culturally. "What I wished to do was to present, side by side, a definite number of elements: the knowledge of living beings, the knowledge of the laws of language, and the knowledge of economic facts, and to relate them to the philosophical discourse that was contemporary with them during a period extending from the seventeenth to the nineteenth century." Foucault, *The Order of Things – An Archaeology of the Human Sciences*, x.

6 For further details, see Bühlmann, 'Vicarious Architectonics, Strange Objects: Chance-Bound: Michel Serres' Exodus from Methodical Reason'.

7 Descartes starts his argument in the *Meditations on First Philosophy*, in which the existence of God and the immortality of the soul are demonstrated like this: "I think that when properly understood almost all the arguments that have been put forward on these issues by the great men have the force of demonstrations, and I am convinced that it is scarcely possible to provide any arguments which have not already been produced by someone else." Descartes, *The Philosophical Writings of Descartes, Volume II*, 4.

which neither his precursors nor his contemporaries substantially touched.⁸ Hence he saw the potential for a revolution in thinking. For Alberti, established models and traditions in a certain field only led to the acquisition of the necessary skills and, with continuous practice, to the achievement of virtuosity. But what if there are no fathers or no nature from which we derive our models? What if we are confronted with the unprecedented?⁹ Accordingly, Alberti was writing about painting and sculpture by means of abstract thoughts that he derived from the mathematics of his time. He was looking for rules, laws, and invariances. This allowed him to engage and argue at the level of his era.

In order to act in symmetry, we primarily deal with an extensive body of knowledge around food.

I, personally, therefore have to apologise for the broad scope of my work, though so many things seem currently at stake when we talk about food. I integrate different aspects that are beyond the scope of certain expertises and disciplinary approaches. And so I am not talking about food as a food engineer, computer scientist, economist, chef, bio engineer, chemist, vintner, philosopher, or mathematician, nor any other specific expert in a certain field, but foremost as an architect who attempts to speak on behalf of all of them, in order to deal with difficult and challenging subjects in a relaxed, albeit slightly impatient manner.

This work is split into two parts. It preludes with *Meditating upon Land- and City-Scapes*. This elementary treatise investigates the implications of the informational turn that is currently ongoing. It stages a motion from the primarily sensible towards the intelligible. It does so by juxtaposing the *Horizontal* with the *Vertical*. Hence it shapes the orthogonal terms of *Land- and City-Scapes*. A cataract of thoughts indexes concepts, scaffolding them so as to gain the capacity to host, interiorise, and order as well as cast off and stage future characterisations. This provides leads and establishes manners that give us the opportunity to sustain *Ventures* yet to come.

The second part, *Mediating Digestible Viands* deals in different fields of the contemporary world of food. *Four Ventures* show applications that mediate between the real and the rational. They open gates to novel spaces. Next to them, we can witness the birth of many lively *Viands* that are able to further enrich and thereby sustain the already broad spectrum and culture of food.

8 Pico della Mirandola reflects on the admiration and reasoning of the miracle of man. "These reasons are all, without question, of great weight; nevertheless, they do not touch the principal reasons, those, that is to say, which justify man's unique right to such unbounded admiration." Pico della Mirandola, *Oration on the Dignity of Man*, 4.

9 "But, on the other hand, our fame should be greater if we, without teachers and [with] no example whatsoever, discover arts and sciences hitherto unheard of or never seen." Alberti, *Leon Battista Alberti: On Painting: A New Translation and Critical Edition*, 18.

[illegible][illegible]

“People in the city always think that what is constructed is a landscape, certain people in the country think that the landscape is the world as is.”¹⁰

Michel Serres, Noise

INTRODUCTION

When we talk about food¹¹ today we are usually encouraged to do so by entering vast scenes¹² of *Land Scapes*¹³ from an inflated centred mount¹⁴ raised by the city.¹⁵ These *Land Scapes* are held to provide a clear overlook from a global point of view and a comprehensive understanding of the underlying earth and nature.¹⁶ Thereby the local is framed by a *Horizontal Scape*, which is constructed and rationalised in front of us. The *Scape* frames and generalises. It gets continuously re-constructed by scientists, engineers, and capitalists, and has been since modern times.¹⁷ For the locals, this *Scape* makes up and constitutes a world,¹⁸ a profane reality as is.¹⁹ A world²⁰ and construction²¹ on the sensible side.

10 Serres, 'Noise', 58.

11 "Food is any substance consumed to provide nutritional support for an organism." See Wikipedia, s.v., 'Food'.

12 Fabio Parasecoli mentions in his book *Food*, part of *The MIT Press Essential Knowledge Series*, topics such as food systems, health and nutrition, environment and sustainability, technology, as well as hunger and food security as among those which need to be discussed not merely by the consumer but also in legal terms as a citizen. "Food is more than just a way to provide fuel to our bodies, especially in the consumer culture in which we are increasingly enmeshed." Parasecoli, *Food*, 7.

13 I will make a distinction between the notion of *Land Scape* and landscape. This distinction will be characterised and made clear throughout this work.

14 Friedrich Kittler starts his article 'The City Is a Medium' with the description of the formation of cities around a visible centre; such as a fortress, acropolis, citadel, or palace. "Capital. The name already says it: Capitals are named after the human body. The state (since the Greeks) has been conceived of as an organism, whose head is its capital. This capital, in turn, is ruled by a chief, whose name once more means just that, the head." Kittler, 'The City Is a Medium', 717. Kittler later expands his description of controllability to a notion of media.

15 Saskia Sassen describes how new technologies of communication alter the notion of centrality in 'The Global City: Introducing a Concept'. She notes in one of her footnotes: "A central proposition here, developed at length in my work, is that we cannot take the existence of a global economic system as a given, but rather need to examine the particular ways in which the conditions for economic globalization are produced. This requires examining not only communication capacities and the power of multinationals, but also the infrastructure of facilities and work processes necessary for the implementation of global economic systems, including the production of those inputs that constitute the capability for global control and the infrastructure of jobs involved in this production. The emphasis shifts to the practice of global control: the work of producing and reproducing the organization and management of a global production system and a global marketplace for finance, both under conditions of economic concentration. The recovery of place and production also implies that global processes can be studied in great empirical detail," Sassen, 'The Global City: Introducing a Concept', 41.

16 Indra Kagis McEwen writes about notions of *epistémé*, *techné*, *gnomon*, skills at the dawn of Western philosophy in *Socrates' Ancestor: An Essay on Architectural Beginnings*: "When, in the classical period, *epistémé* became seeing, not only did the craftsman lose his prestige and become divorced from the political sphere, but so did the thinker, the *philo-sophos*." McEwen, *Socrates' Ancestor*, 110.

17 "What then is an object? In the literal sense it is: 'that which has been thrown or which one throws in front'. Are world-objects lying in front of us? The global dimension that characterizes them eliminates the distance between us and them which in the past defined objects. We now live in those world-objects as we live in the world." Serres, 'Revisiting The Natural Contract'.

18 "Old English woruld, world "human existence, the affairs of life," also "a long period of time," also "the human race, mankind, humanity," a word peculiar to Germanic languages (cognates: Old Saxon werold, Old Frisian world, Dutch wereld, Old Norse verold, Old High German weralt, German Welt), with a literal sense of "age of man," from Proto-Germanic *weraldi-, a compound of *wer "man" (Old English wer, still in werewolf; see virile) + *ald "age" (from PIE root *al- (2) "to grow, nourish")." See *Etymology Dictionary*, s.v., 'World'.

19 "In a theological context, the world is the material or the profane sphere, as opposed to the celestial, spiritual, transcendent or sacred spheres." See Wikipedia, s.v., 'World'.

Land Scapes are constructed in order to formulate an answer for questions such as: What is food? Where does it come from? How is it made? How does it taste? These questions are preferably answered empirically and have their ground²² in nature. Hence nature is treated as generous and harmonious and food as a function of how humans relate to it.²³ The *Land Scapes* allow for a reading of the given orders of nature. This reading frames images and an understanding of how we as humans can achieve an adequate settlement in the forms of *Land* that have their locus in nature, and thereupon root performative activities that are in sync with the contemplated reality on Planet Earth. In order to illustrate these present attempts, I will in the following address: *The Cosmic Mould*, *The Horizontal Scape*, *The Flat Land*, and *The Inert States* that together formulate and display modes of founding, framing, tilling, and administering *Land Scapes* such as that of food.

THE COSMIC MOULD

We stare at the firmament and postulate heavenly bodies which appear as fixed luminous points in the sky. The universe seemingly presents itself to us in a lawful and reasonable order. The concept of the cosmos provides us with orders of a harmonious universe²⁴ that we are about to unravel and rationalise. A mould that makes up the foundation of our household and thereby provides the basic conditions for the possibility of our knowledge.²⁵

COMMON ROOT, MOULD

The universe is infinite and holds divine orders. It bears natural balances such as Newton's determinism of action and reaction.²⁶ It further holds a grand universal harmony that contains

20 "'Word interior of capital', on the other hand, should be understood as a socio-topological term that is here applied to the interior-creating violence of contemporary traffic and communication media: it traces the horizon of all money-dependent chances of access to places, people, commodities and data-chances based without exception on the fact that the decisive form of subjectivity within the Great Installation is determined by disposal over spending power. Where spending power takes on a shape of its own, interiors and operational radii *sui generis* come into being: the access arcades where spending-power flâneurs of all stripes go to stroll. The early architectural intuition of having markets in halls inevitably led in the early Global Age to the idea of the world-shaped hall, on the model of the Crystal Palace; the reaching-out into the hall-shapedness of the world context as a whole is the logical consequence of this." Sloterdijk, *In the World Interior of Capital*, 198.

21 "World exhibitions construct a universe of 'spécialités'." Walter Benjamin states in *The Arcades Project*. He further notes: "Henceforth, as Fourier had foreseen, the true framework for the life of the private citizen must be sought increasingly in offices and commercial centers. The fictional framework for the individual's life is constituted in the private home." Walter Benjamin, *The Arcades Project*, 18, 20.

22 'Ground' is used here as the translation from the German 'Grund' which has in principle two different meanings. On the one hand it relates to the ground as 'earth', 'bottom', 'base', 'soil' and 'land' and on the other to 'reason', 'cause' and 'matter'.

23 For further details on "energy generations" that are framed in attempts to live proportional and/or in balance with nature, see Hovestadt, Bühlmann, and Michael, *A Genius Planet – Energy: From Scarcity to Abundance: A Radical Pathway*, 194–96.

24 See *Dictionary.com*, s.v., 'Cosmos'.

25 "The cosmos was thus the foundation of the house and the condition for knowledge. Order reigns, all quiet, our science and our confidence." Serres, *Genesis*, 107.

26 "Law III: To every action there is always opposed an equal reaction: or the mutual actions of two bodies upon each other are always equal, and directed to contrary parts." See *Wikipedia*, s.v., 'Newton's Laws of Motion'.

27 "For Leibniz, God contains within himself all possibilities, not just the actual world: this latter is just that maximal set of possibilities that he has best reason to actualize." Robinson, 'Substance'.

28 "[Monads form the substantial basis of] ... a philosophical theory about causation under which every 'substance' affects only itself, but all the substances (both bodies and minds) in the world nevertheless seem to causally interact with each other because they have been programmed by God in advance to 'harmonize' with each other." See *Wikipedia*, s.v., 'Pre-established Harmony'.

all possibilities of which merely one is actualised.²⁷ This pre-established harmony is entailed in a windowless substance of god—monads—that causally relate to each other, as Leibniz frames it in his idealism.²⁸

The universe comprises harmonies that we are about to discover and thereupon act proportionally in order to frame and thereby sustain our living habitat. Those harmonies order fractions of a divine unity within which we can root our thinking and hence derive continuous stability and truth for all our activities. We believe and trust in this stability and allow it to give us guidance.²⁹

Nevertheless, the harmonies of the cosmos are veiled. Displays in the sky of that which is and that which we make sensible and readable alongside a cosmic mould within which content and expression, appearance and essence are designated the same origin. They are set equal, which makes the world appear in an ordered manner, whatever phenomena we adore and choose to observe.³⁰

KNOWLEDGE, FORMS, MATRIX, SPARSE

The mould casts a simplified idealised copy³¹ that aims to formally represent the complexity of the real. A variety of local instances becomes (scientifically and methodically) framed in one line. This line indicates an understanding of the underlying local instances. The sum of lines are tied down, grounded, kept in place, in memory. The local is made global. This is what we call knowledge.³² A theoretical knowledge that is made up of generalised forms.

We can follow this line up to the most recent approaches. The concept of ecology aims to gain a holistic scientific logos 'knowledge' of our *oikos* – our 'house'. It does so by formalising

29 "Certainly we had never had any concept of order more extensive or comprehensive than that of the cosmos. The cosmos was the order and the universe was in order. It was our refuge, our security, our roothold, the most far-reaching and surest foundation of our living habitat. Those who did not believe in God, as the guarantee of their existence and their righteous thinking, thought, or sensed, vaguely, beneath their thought, the order of the world. The classical God of philosophers and scholars was in fact nothing else but this rational guarantee, this university of reasons and laws. In this sense, the most religious, the most theologian-like of the men of the world is the contemporary scholar when he puts his trust in that old universal order. And most often such a man calls himself an atheist." Serres, *Genesis*, 107.

30 "The Greeks in their exquisite wisdom combined order and adornment in the same word, the art of adorning and that of ordering. 'Cosmos' designates arrangement, harmony and law, the rightness of things: here is the world, earth and sky, but also decoration, embellishment or ornamentation. Nothing goes as deep as decoration, nothing goes further than the skin, ornamentation is as vast as the world. Cosmos and cosmetics, appearance and essence have the same origin. Adornment equals order, and embellishment is equivalent to law, the world appears ordered, at whatever level we consider phenomena. Every veil is a magnificently historiated display." Serres, *The Five Senses*, 32.

31 "Unique and sown with leafy circumstances, neither the species nor the individual, neither the fact, nor the landscape, neither this protein, nor any given star, in a word the Singular, can be understood by means of general ideas. All we can do is describe, draw, copy them out, reproduce, represent, in short, imitate them point by point and detail after detail. Knowledge of this singularity begins with the art of copying. The sum of copies, the memory, then, is justly regarded as being the only knowledge." Serres, *Variations on the Body*, 85.

32 "There's as little point in paying a lot of money for an unrestrained statue of his as there is for a runaway slave: it doesn't stay put. But Daedalus' pieces are so beautiful that they're worth a great deal if they're anchored. What am I getting at? I mean this to be an analogy for true beliefs. As long as they stay put, true beliefs too constitute a thing of beauty and do nothing but good. The problem is that they tend not to stay for long; they escape from the human soul and this reduces their value, unless they're anchored by working out the reason. And this anchoring is recollection, Meno, my friend, as we agreed earlier. When true beliefs are anchored, they become pieces of knowledge and they become stable. That's why knowledge is more valuable than true belief, and the difference between the two is that knowledge has been anchored." See, 'Meno 98a, a Socratic dialogue scripted by Plato' in Waterfield, *Meno and Other Dialogues*, 139.

and depicting a certain idea.³³ Therein man is seen within a biosphere where all man-made elements become interlocked into one global ecosystem.³⁴ A system of functions and processes concatenates an organism, such as the city and its surrounding environment.³⁵ It aims to unify nature in its entirety. Thereby the roots are slowly cast off from local plots to a global knowledge. The multitude is left for a magnitude that frames all that seems possible and understandable.

This becomes a second nature, that which is dead not alive, since it merely bonds on the *representational* level of the global Earth which extends to cover the local earth.³⁶ The applied matrix encloses the local with a set of components. Thereby quantities can be specifically set.³⁷ As the components of the local instances are always distributed in a scattered manner, the matrix in the way it is employed in an attempt to frame these localities is exposed to the problem of complication which can either be due to a frame that is 'too much' or to specifically set quantities that are 'too sparse'.³⁸

INFINITE, LINE, HORIZON

The mould marks the limit and boundary of our world. A line that forms a circumvallation between the Earth and the infinity of the universe. A sensible horizon that marks the limits of the range of orders for perception, knowledge, or the like.³⁹ Though this horizon, the line, entails infinities. We imploringly know that we

33 The concept of ecology was coined by the zoologist and biologist Ernst Haeckel in 1866. See *Wikipedia*, s.v., 'Ecology': "By ecology, we mean the whole science of the relations of the organism to the environment including, in the broad sense, all the 'conditions of existence'." See Stauffer, 'Haeckel, Darwin, and Ecology'. Michel Serres relates ecology to an ideology. "Ecology also refers to the controversial ideological and political doctrine varying from author to author or group to group that aims at the protection of the environment through diverse means." See Serres, 'Revisiting The Natural Contract'.

34 This is impressively visualised in the mappings and collages of John McHale. "There is no longer a division possible between factory and farm or, in this sense, town and country; all are closely interlocked in a close symbiotic relation – a man-made ecology which we now see, almost for the first time, as an integrally functioning 'organic' sector within the overall ecosystem." See McHale, *World Design Science Decade 1965–1975 – Phase II, Document 6*, 3.

35 "Healthy life is completeness of relation of organism, function, and environment, and all at their best." Geddes, *Cities in Evolution*, 392.

36 "... a paradoxical rootedness in the global: not in a plot of earth, but on Earth, not in the group, but every where; the plant image hardly makes sense anymore. Since we left the ground, casting off powerfully for remote places, we have relied more on immaterial bonds than on roots." Serres, *The Natural Contract*, 95.

37 Foucault calls this a "General Table" of the classical episteme. "In any case, the Classical *episteme* can be defined in its most general arrangement in terms of the articulated system of a *mathesis*, a *taxinomia*, and a *genetic analysis*. The sciences always carry within themselves the project, however remote it may be, of an exhaustive ordering of the world; they are always directed, too, towards the discovery of simple elements and their progressive combination; and at their centre they form a table on which knowledge is displayed in a system contemporary with itself. The centre of knowledge, in the seventeenth and eighteenth centuries, is the *table*. As for the great controversies that occupied men's minds, these are accommodated quite naturally in the folds of this organization." Foucault, *The Order of Things – An Archaeology of the Human Sciences*, 82.

38 "And why rationalism comes under the heading of the sacred, why rationalists are priests, busily ruling out, cleaning up the filth, expelling people, purifying bodies or ideas. Behold the positive chaos, the casting mould, the matrix. And behold the pure possible." Serres refers here to the mould and the matrix itself being able to entail nothing and noise. "God who had all of them gave them all, one by one, to the world, to the plants, to the animals. At the very end of his work, he had nothing left in his hands. He moulded man out of this nothing, plain water and soft loam. Man is this last nothing trying to imitate the other creatures." Serres further states, "He who does not hear this noise has never composed any sonatas. The masterwork never stops rustling and calling. Everything can be found in this matrix, nothing is in the matrix; one could call it smooth, one could call it chaotic, a laminar waterfall or clouds storm-crossed, a crowd." Serres, *Genesis*, 99, 48, 18. An attempt we will also follow with our *Tables of Plenty* in the *City Scapes*.

39 "Horizon comes from Greek horizon (*kyklos*) 'bounding (circle)'; from *horizein* 'bound, limit, divide, separate'; from *horos* 'boundary, landmark, marking stones.' See *Etymology Dictionary*, s.v., 'Horizon'.

can never know enough.⁴⁰ For this reason, we continuously aim for further *Horizontal Scapes*—copies derived from the *Cosmic Mould*—which shall enable us to frame and reflect the entailed infinities and fix a horizontal plane that proportionally roots back to the horizon. The Earth as our reality is derived from this infinite horizontal line. We set the boundaries for a household. This seems necessary, in order to stabilise, maintain and gain full control. We make the Earth a finite plane. We make it finite with all the numerous attempts to ground and understand.

THE HORIZONTAL SCAPE

In order not to feel lost within the vastness of the universe, we equip ourselves with devices and apparatus that entail the ability to capture portions of stable equilibria. Science and technology invent *Scapes* which are able to order partial copies of the infinite horizon. These *Scapes* induce mechanical conditions for the framing of reality. This provides constancy and balance. A fixed reference, as the point of origin, and the limits of the horizontal frame set the scene for the localisation of a comprehensive understanding of reality.

GLOBAL, LOCAL

The production of food these days is mainly driven by two different vectors. On the one hand all necessary technologies, infrastructures, and logistics of the global food network are at our disposal and provide a general basis for the everyday supply of food,⁴¹ on the other hand we celebrate all the more local, individual, and specific delicacies that are kept alive by traditional practices and prompt a desire for the capacity to further sustain our habitats and lives.⁴² These attempts can be divided into extremes that are either bottom-up or top-down approaches, depending on the primacy of the local or the global, with an aim to perpetuate activities that either unify a multitude or diversify a magnitude.

The magnitude of global brands and corporates⁴³ economises food on a global scale, based on cost-effective production

40 For a short glimpse into the fascinating richness of the concept of 'infinity' I take the liberty to attach, for the interested reader, the introduction to the *Wikipedia* article devoted to it. "Infinity (symbol: ∞) is a concept describing something without any bound, or something larger than any natural number. Philosophers have speculated about the nature of the infinite, for example Zeno of Elea, who proposed many paradoxes involving infinity, and Eudoxus of Cnidus, who used the idea of infinitely small quantities in his method of exhaustion. This idea is also at the basis of infinitesimal calculus. At the end of 19th century, Georg Cantor introduced and studied infinite sets and infinite numbers, which are now an essential part of the foundation of mathematics. For example, in modern mathematics, a line is viewed as the set of all its points, and their infinite number (the cardinality of the line) is larger than the number of integers. Thus the mathematical concept of infinity refines and extends the old philosophical concept. It is used everywhere in mathematics, even in areas such as combinatorics and number theory that may seem to have nothing to do with it. For example, Wiles's proof of Fermat's Last Theorem uses the existence of very large infinite sets." *Wikipedia*, s.v., 'Infinity'.

41 For a currently prominent, critical, and phenomenological understanding of food by a representative of a city-centric view on the 'land-city relationship', see Steel, *Hungry City*.

42 This finds an expression in the growing interest in organic farming and food, at least in western areas of the world, even though it should be mentioned that organic does not automatically mean local. The International Federation of Organic Agriculture Movements notes "Globally, 1.4 percent of the farmland is organic. However, many countries have far higher shares. The countries with the largest organic share of their total farmland are Liechtenstein (37.9 percent), Samoa (37.6 percent), and Austria (24 percent)." IFOAM, 'The World of Organic Agriculture 2019'.

43 "Nestlé is the world's largest food and beverages company. We are a global company, combining global strategies with local engagement." Nestlé, 'Nestlé: Annual Report 2018'.

and just-in-time logistics on the infrastructure of a worldwide distribution network.⁴⁴ This system finds expertise in, and support from, the field of food engineering, which is in principle still conducted as an experimental and empirical science.⁴⁵ It is a system that, with the help of technology and tools, frames and unifies a multitude which can be known as food.

Startup accelerators, such as Kickstarter,⁴⁶ aim to integrate the local specificity of talented individuals as an *authenticity* into the global context of corporates. Surprisingly, we find a similar approach with the green environmental movement that promulgates concepts such as urban agriculture⁴⁷ and vertical farming⁴⁸ in order to integrate more of the local into the global magnitude of the city.

The production of wine in the vineyard and in the cellar by vintners is still considered a craft that is based on local traditions. There is no object of wine. The know-how is not generalised yet. Its origin is unknown but it is kept alive as it is passed on from subject to subject, from generation to generation. This becomes clearly evident with famous wineries such as the Château Margaux⁴⁹ of the region of Bordeaux. This wine-growing estate maintains and refines a unique terroir and thereby keeps a local tradition alive.

The Netflix series *Chef's Table*⁵⁰ introduces a line-up of famous masterful and artistic chefs. They have in common that they were all educated in keeping with a then contemporary international style of cooking, that of the *haute cuisine*.⁵¹ A culture that builds upon an artistic practice, where cooking is based on complex principal techniques and their skilful application. The TV series celebrates the current generation of chefs who head back to the places they initially came from and try to reactivate and integrate—in a style of critical regionalism⁵²—the already existing but so far neglected multitude of the locally existing conditions

44 "The key spatial feature of the network society is the networked connection between the local and the global. The global architecture of global networks connects places selectively, according to their relative value for the network." Castells, *The Rise of the Network Society*, xxv.

45 "The shift from empirical to physics-based food modeling is paramount to benefit from new sensor technology, proliferation of the 'Internet of Things', and big-data information." Saguy, 'Challenges and Opportunities in Food Engineering'; 2.

46 "Innovation bridges, proof of concepts and other collaborations, are being built during the Kickstarter program between later-stage startups and corporates. These projects will more often than not result in steps towards more sustainable food production, i.e. positive impact on the Climate and Health Crises we are facing today." Kickstarter-Innovation, 'Kickstart'.

47 For a glimpse on this topic, see Miccoli, Finucci, and Murro, 'Feeding the Cities Through Urban Agriculture – the Community Esteem Value'.

48 "Vertical Farming or vertical agriculture facilitates viable agricultural production inside buildings, in the metropolitan areas of our cities." See 'Vertical Farming Institute'.

49 The website of Château Margaux beautifully shows the craft of making wine alongside their *savoir-faire* developed over five centuries. "It's about being at the top of its inheritance, but never ceasing to question in order to improve and perfect that which can still be done, in acknowledgement of the heritage of Château Margaux." Château Margaux, 'In the Vineyard'.

50 We can see this tendency in the description of Season 1: "By blending Italian tradition and artful modernity, chef Massimo Bottura's *Osteria Francescana* has been ranked the third best restaurant in the world." Or: "Far from any city, far from most fresh ingredients, chef Magnus Nilsson has created one of the world's great restaurants in frozen Järpen, Sweden." Netflix Official Site, 'Chef's Table'.

51 See *Wikipedia*, s.v., '*Haute Cuisine*'.

52 "Critical Regionalism necessarily involves a more dialectical relation with nature than the more abstract, formal traditions of modern avant-garde architecture allow. It is self-evident that the *tabula rasa* tendency of modernization favors the optimum use of earth-moving equipment inasmuch as a totally flat datum is regarded as the most economic matrix upon which to predicate the rationalization of construction. Here again, one touches in concrete terms this fundamental opposition between universal civilization and autochthonous culture. The bulldozing of an irregular topography into a flat site is clearly a technocratic gesture which aspires to a condition of absolute placelessness, whereas the terracing of the same site to receive the stepped form of a building is an engagement in the act of 'cultivating' the site." Frampton, 'Towards a Critical Regionalism: Six Points for an Architecture of Resistance', 26. I will further develop this idea of place-form to *Characters* that take place in the chapter about *City Scapes*, which allow the local to be integrated into the global.

and traditions by means of the sophisticated application of a global skillset.

SIMPLIFICATION, REPRESENTATION, SYNCHRONOUS

The prevailing scientific path of rationalisation, from the global to the local and vice versa, is characterised by a necessary simplification. In order to gain a clear representation of reality, idealised models necessitate a certain simplification of the underlying complexities. Empirical details and deviations are eliminated and replaced by a set of properties that together make up a kind of dictionary of the model. This marks the limits of how we can describe and understand reality.⁵³

Within the multitude of the local we crave for states that are able to represent the real in an objective manner. We are looking for fixed constellations which enable us to be in sync with the cosmos and a generous nature and by extension with the order of the universe.

We aim for a picture.⁵⁴ Although the world as picture is not merely a picture of the world. Everything is cut at its local roots and set globally and therein grounded before us, as our world to think, act, and live in: a substitute which is treated as if it were true. It's supposed to be the only truth.

The reading becomes the world itself.⁵⁵ We take it for our reality.⁵⁶ We are in this picture.⁵⁷ The more we accommodate ourselves within, in accordance and synchronicity with the cosmic order of an idealised nature, the better our performance and therefore the better we as humanity are in total able to sustain ourselves.⁵⁸

SCAPE, FRAME, IMMEDIATE, HORIZONTAL

The picture becomes framed by a *Scape*.⁵⁹ The *Scape* is aligned with the horizon. It reaches out and captures in space and time. It divides, sums up, and again makes up a whole. Thereby it

53 "Therefore, the idealization process in scientific modeling can be explained as a form of purification of empirical observations toward a set of given (assumed) ideal properties. These given ideal forms or properties can be seen as a dictionary, by which one can model (conceive of) many real world phenomena." Moosavi, 'Pre-Specific Modeling', 38.

54 "The fundamental event of the modern age is the conquest of the world as picture. The word "picture" [*Bild*] now means the structured image [*Gebild*] that is the creature of man's producing which represents and sets before." Heidegger, *The Question Concerning Technology, and Other Essays*, 134.

55 "What is a world picture? Obviously a picture of the world. But what does 'world' mean here? What does 'picture' mean? 'World' serves here as a name for what is, in its entirety. The name is not limited to the cosmos, to nature. History also belongs to the world. Yet even nature and history, and both interpenetrating in their underlying and transcending of one another, do not exhaust the world. In this designation the ground of the world is meant also, no matter how its relation to the world is thought." Heidegger, 129.

56 "We consider the landscape, as a whole and in detail, it considers us as a landscape. We are merged into it and its variety." Serres, *The Five Senses*, 51.

57 "'We get the picture' [literally, we are in the picture concerning something]. This means the matter stands before us exactly as it stands with it for us. 'To get into the picture' [literally, to put oneself into the picture] with respect to something means to set whatever is, itself, in place before oneself just in the way that it stands with it, and to have it fixedly before oneself as set up in this way." Heidegger, *The Question Concerning Technology, and Other Essays*, 129.

58 So far, the myth of sustainability.

59 "'Scape' has in principle three different meanings. On the one hand it describes a 'scenery view', a framed landscape that runs parallel to the horizon. On the other hand, the term is the short form of 'escape', to 'free oneself from confinement; extricate oneself from trouble; get away safely by flight (from battle, an enemy, etc.)'. An escape of the boundaries towards its third meaning, 'a shaft, stem, stalk, sceptre' – that which implies the vertical." See *Etymology Dictionary*, s.v., 'Scape'. and *Etymology Dictionary*, s.v., 'Escape'.

intervenes immediately. The *Scape* paints a map on the ground of that which it can catch sight of.⁶⁰ It frames the underlying horizontally and in a linear manner. It lays out a territory and thereby imagines the limits.⁶¹ It gives form and stratifies a flat *plateau*.⁶² The present is made global, once and for all time. This allows for a foundation, the grounding of reality. However, this still seems insufficient and/or incomplete. The framing of the horizontal line of reality leaves gaps, as mentioned above, even as the frame becomes further refined and/or expanded. This circumstance leads to an ever-increasing complication.

EARTHLY, SENSIBLE, INDIVIDUAL

The *Horizontal Scapes* frame earthly sensible articulations that exist in the reality of space-time, and generate virtual, merely intelligible representations. The analysis of the natural shapes (genotypes) deals with content though it can merely see and reach out for the natural forms as their expression (phenotype).⁶³ Encyclopaedias⁶⁴ inventory diversity and discursively structure and describe the multitude in classes alongside the generalisation of imaginary global species. We can find this approach in botany and zoology, which in early modernism differentiated, identified, and classified plants as species in taxonomies,⁶⁵ as if there is something amongst individuals that they really have in common. Although we know this common ground, the roots are merely a fiction. The identities, like the genotypes of a species, do not exist. There are only individual forms, renderings of natural shapes, that remain hidden as secrets.⁶⁶

60 "The geographer works through a survey scope, the botanist through a lens and the biologist through a microscope. They all share the same starting point, in that proximity to and distance from the analysed object is first conveyed via different scientific methods of analysis. Results of the geographer's research flow into maps, the botanist's into texts and drawings, and the biologist's into formulas. The shift of scale becomes clear in the approach to the documentation of the scientific findings." Vogt and Olafur Eliasson, *Miniature and Panorama*, 24.

61 "'Land under the jurisdiction of a town, state, etc.', probably from Latin *territorium* 'land around a town, domain, district', from *terra* 'earth, land'." See *Etymology Dictionary*, s.v., 'Territory'.

62 "Strata are Layers, Belts. They consist of giving form to matters, of imprisoning intensities or locking singularities into systems of resonance and redundancy, of producing upon the body of the earth molecules large and small and organizing them into molar aggregates. Strata are acts of capture, they are like 'black holes' or occlusions striving to seize whatever comes within their reach. They operate by coding and territorialization upon the earth; they proceed simultaneously by code and by territoriality." Deleuze and Guattari, *A Thousand Plateaus*, 40.

63 "The lengthy controversy over the Cartesian innateness of 'ideas', denied by the empiricists, is in a way similar to the more recent one which has divided biologists with regard to the distinction between phenotype and genotype. For the geneticists who introduced it the distinction was fundamental, indispensable to the very definition of the hereditary patrimony; for many biologists not working in genetics it was, on the contrary, a very suspect distinction, in their eyes a device intended to save the postulate of the invariance of the gene. Here, once more, is a recurrence of the conflict between those for whom truth resides only in the concrete object, actually and fully present, and those who look beyond the object for the ideal form it masks." Monod, *Chance and Necessity; An Essay on the Natural Philosophy of Modern Biology*, 153.

64 "'Training in a circle', i.e. the 'circle' of arts and sciences, the essentials of a liberal education; from *enkyklios* 'circular', also 'general' – Modern sense of 'reference work arranged alphabetically'." See *Etymology Dictionary*, s.v., 'Encyclopedia'.

65 "Taxonomy, in a broad sense the science of classification, but more strictly the classification of living and extinct organisms – i.e., biological classification. The term is derived from the Greek *taxis* ('arrangement') and *nomos* ('law'). Taxonomy is, therefore, the methodology and principles of systematic botany and zoology and sets up arrangements of the kinds of plants and animals in hierarchies of superior and subordinate groups." See *Encyclopedia Britannica*, s.v., 'Taxonomy'.

66 Only the 20th century made Mendel the creator of genetics, notes François Jacob. "The combination of characters in a particular plant was of no more interest to Mendel than the path of a particular molecule was to Boltzmann. This was the price which had to be paid before heredity could be subjected to analysis. The humours, obscure forces and mysterious purposes that ever since antiquity had seemed to fashion the characters of living beings could be replaced by matter, particles and laws. The entire representation of living organisms was thus transformed." Jacob, *The Logic of Life*, 208.

ARITHMETIC BALANCES, FOUNDATIONS, ORIGIN, MYTH

We find these types of translations of a multiplicity into a unity in all kinds of practices. For example, the mechanisms of food processing⁶⁷ add up a series of operations and transformations alongside a value chain to a product.

This takes place on the stage of arithmetic which performs the orchestration of the individual parts up to a sum total. Arithmetic⁶⁸ operates with numbers that belong to a certain notion of numbers such as the natural, rational, real, and complex.⁶⁹ These numbers all have different properties which are established in advance in number theory. The different types of numbers consist of lists of elements and rulesets that together allow for certain operations. They are axiomatised and well grounded, set and reasoned.

Operations, such as with natural numbers, aim for a representation of that which is. For example, the *Limits to Growth* were globally set by the Club of Rome in 1972.⁷⁰ The report introduced numbers and variables for the calculation, simulation, and prediction of the future world population, industrialisation, pollution, food production, and resource depletion. We can observe a similar situation when it comes to the topic of climate change.⁷¹ Each of these readings with numbers frames a certain reality.

The calculated magnitudes frame the limits of the ground of our reality on Planet Earth. They interrupt that which so far was grounded, encapsulated, staged,⁷² and in circulation as a myth.⁷³ The myth—such as rituals, history, customs, and traditions—unifies the multiplicity, and thereby makes up a ground, an origin and foundation for future reasoning which can be taken for granted as long as one believes in it, since the quality of the information it bears can never be proven. Its content allows for the transmission

67 "Thus, recent works often deal with the entire food system, looking at production, distribution, and consumption as part of a single process." Anderson, *Everyone Eats*, 4.

68 For further details, see *Wikipedia*, s.v., 'Arithmetic'.

69 For further details, see *Wikipedia*, s.v., 'Number'.

70 "The Phase One study was conducted by an international team, under the direction of Professor Dennis Meadows, with financial support from the Volkswagen Foundation. The team examined the five basic factors that determine, and therefore ultimately limit, growth on this planet population, agricultural production, natural resources, industrial production, and pollution." Meadows, *The Limits to Growth*, 11–12.

71 "... physicist and Nobel laureate Ivar Giaever. He asks the question, 'is it even possible still, today, to talk about global warming?' And he quickly realises: 'no, it isn't!' Because if you do, you will immediately be branded an irresponsible climate change denier. Many have noted as he has – and with some degree of frustration – that the climate change discussion has taken on a religious tone. We realise, of course, that this is highly contentious, but you could also think of Global Warming as a modern myth: a narrative, with which people and cultures express their understanding of their world, of the challenges they face, and of themselves. Myth demands that the truth it claims be taken seriously. Which is what we observe in the climate change discussion." Hovestadt, Bühlmann, and Michael, *A Genius Planet – Energy: From Scarcity to Abundance : A Radical Pathway*, 8.

72 "... if myth, as Levi-Strauss would have it, is primarily defined as that with which or in which time turns into space. With myth, the passing of time takes shape, its ceaseless passing is fixed in an exemplary place of showing and revealing." Nancy, *The Inoperative Community*, 45.

73 "1830, from French *mythe* (1818) and directly from Modern Latin *mythus*, from Greek *mythos* 'speech, thought, word, discourse, conversation; story, saga, tale, myth, anything delivered by word of mouth'; a word of unknown origin. Beekes finds it 'quite possibly pre-Greek.'" See *Etymology Dictionary*, s.v., 'Myth'.

74 "This is why our scene of myth, our discourse of myth, and all our mythological thinking make up a myth: to speak of myth has only ever been to speak of its absence. And the word 'myth' itself designates the absence of what it names. This is what constitutes the interruption: 'myth' is cut off from its own meaning, on its own meaning, by its own meaning." Nancy, *The Inoperative Community*, 52.

of *habitus*. It is handed over from generation to generation by being retold in ever new expressions.

However, the myths become interrupted,⁷⁴ in a manner which creates rituals around them to find novel expressions. They purport to keep a balance, as with the limits of growth and climate change. Modern mythical stories, legends, that provide an understanding and a truth of the world, the content of which likewise demands to be taken seriously in order to fully work and unfold its power.

CORPOREAL MANNER

Default operations, such as the orchestration of arithmetic balances, will give us the opportunity to lean back. We can watch the order of the cosmos and thereby find our own position.⁷⁵ We gain a sensible body that takes place through dealing with other sensible bodies. This enables us to make sense and understand, which in turn gives us the desired stability⁷⁶ – in a corporeal manner.⁷⁷

SETS, ABSTRACT UNIVERSALS

Set theory⁷⁸ is another attempt to form a frame that is supposed to provide stability. It allows us to define mathematical objects. Thereby objects become members or elements of a finite and abstract set.

This framework also applies to set-theoretical models. They are based on a multitude of external definitions. Moosavi describes these external definitions as abstract universals since they are not self-participating in the sets themselves in the way concrete universals would be.⁷⁹ Sets are therefore a finitude of the multitude of the intelligible.⁸⁰ The limit⁸¹ of this approach is always defined either by being insufficient or incomplete.⁸²

The shape of the real finds an idealised expression. Circle-ness becomes a circle.⁸³ *A Horizontal Scape* covers over. Thereby, the circle acts as a class. The class enables us to name and define empirical things that merely have a circular shape, though with

75 For further details, see Hovestadt, 'Elements of a Digital Architecture'.

76 However, the entailed operations and their distributions tend towards the generic. A general principle that applies to all of the *Horizontal Scapes*. I will further elaborate this point in the following chapters.

77 A corporeal manner that is guided by a capital – a head. For Kittler this also applies to media. Media allows for flows upon infrastructures and logistics which, following Kittler, are based on technology, networks, graphs, intersections, capitals, data, addresses, and commands. "Media exist to process, record and transmit numbers." See Kittler, 'The City Is a Medium', 720.

78 "Set theory is the field of mathematics that studies abstract sets and their properties, commonly used as a foundational system for mathematics. German mathematician Georg Cantor introduced it in his 1874 paper 'On a Property of the Collection of All Algebraic Numbers'. The elementary notion of the set-theoretic paradigm is a set, a mathematical object used to define a collection of objects." See Wikipedia, s.v., 'Set Theory'.

79 For further details, see Moosavi, 'Pre-Specific Modeling'.

80 For further details, see Hovestadt, 'Elements of a Digital Architecture'.

81 "For example, whiteness is an abstract universal as there is no empirical (concrete instance) which can count as 'whiteness'. As another example in the context of language models, being a 'verb' is a property that can be assigned to many words, but 'verb' itself is an external definition and it is not self-participating in the sets of concrete verbs." Moosavi, 'Pre-Specific Modeling', 40.

82 For further details, see Wikipedia, s.v., 'Gödel's Incompleteness Theorems'.

83 "... the word 'ideal' literally comes along with 'those perfections that cannot be fully realized'. For example, Circle-ness as a property is an ideal, which cannot be fully realized and any empirical circular shape has the Circle-ness property to a degree." Moosavi, 'Pre-Specific Modeling', 38.

84 Essential ontological dichotomies such as universals and particulars, substance and accident, abstract and concrete objects, essence and existence, determinism and indeterminism, monism and dualism, as well as idealism and materialism, even when not explicitly mentioned, play a decisive role throughout our meditations and mediations.

deviations. This understanding of ontological categories,⁸⁴ however, is merely taxonomic and classificatory. A simplification of the real.

We can see an implementation of this approach with the classification of individuals as species in biology and botany.⁸⁵ The individual being as a concrete instance is fitted into the frame of a species;⁸⁶ a class, a *Horizontal Scape*. All aspects, properties, distinctions, and predications make up an abstract dictionary. This is subject to the same problem as the division of the horizontal line. Unfortunately, one can never be precise enough; it is always insufficient unless the model were to become the world.

SPECIFIC MODELS, THEORY DRIVEN

The parts of the set, such as the properties of a certain system, need to be defined in advance in order to adequately describe the specificities of the system itself. This approach allows for a parametrisation.⁸⁷ Moosavi describes this as 'Specific Modeling'.⁸⁸ Specifying these models necessitates prior theoretical knowledge.⁸⁹ The global presupposes knowledge in order to be able to deal with the local in a consistent manner. This gives dominance to one side—the one that orders and knows—the *Horizontal Scape*.

LINEARITY, METHOD, TECHNOLOGY, TOOL, EXPERTISE

The *Horizontal Scape* traces trodden paths to define a straight line⁹⁰ – a method. It supersedes rambling on local sight and seeks the shortest path. The method behaves like a tic⁹¹ that wipes away specificities which it is not able to frame. It cancels out

85 "Finally, the third difficulty in setting order in the world was that, 'There are really only individuals in nature', as Buffon said, 'and genera, orders and classes exist only in our imagination'. In the extreme, therefore, to follow nature faithfully, classification of living beings should be ramified *ad infinitum*. It should comprise as many categories as individuals. However, that would make science impossible. To study botany, one has to come to terms with nature. According to Tournefort, it is necessary 'to collect, as if in bouquets, plants that resemble one another and to separate them from those that do not'. That means discerning 'dividing lines' where there seems to be continuity, finding gaps which nature appears not to recognize." Jacob, *The Logic of Life*, 47.

86 "The species represented a sort of rigid entity, a prescribed frame into which the individual being was fitted." *ibid.*

87 Within the field of architecture we can prominently see this approach with Patrik Schumacher and his attempt to frame a system of communication for architecture alongside his unified theory. "The realization that a theory is designed rather than discovered opens up a whole new game, with a whole new freedom and burden. Instead of going round in circles with the received, crude apparatus of traditional architectural thinking, we might aim to construct a new, more sophisticated apparatus." Schumacher, *The Autopoiesis of Architecture*, 6.

88 "As an example, if we are comparing many concrete objects (e.g. several cities), we first need to define a set of specific properties (such as population size, area, GDP, etc.) to construct a representation of city-ness. Therefore, city-ness is reduced to a parametric set up. We call this approach Specific Modeling as it is based on a set of specific properties of the target system." Moosavi, 'Pre-Specific Modeling', 46.

89 "... we could say that a theory in a particular domain sets the structural conditions for any modeling, including the modes of applying any particular model within just that domain. These conditions are conceivable as rules about the modeling, how to organize the symbols, how to operationalize a question, how to organize the relations between concepts, which concepts to allow or to import from other domains and how, how to apply models and when not, and so on. Strictly spoken, we need to accept that theories are not about the segment of the world which is addressed by the models derived from within that theory. Theories are just about models, they regulate them." Wassermann, 'Sema Citta: Deriving Elements for an Applicable City Theory', 135.

90 "A path allows movement in a band and in a line. Method results from an optimizing calculation. Go straight ahead but above all do not multiply senses and directions beyond necessity; choose. From several possible paths, you must choose one and stick to it. Even before making this choice, you must in addition decide on a dimension, and only one, and stick to it. Do not disperse yourself across planes or in volume; the traveller lost in the wood wanders into the clearing and climbs the trees but sees nothing but foliage." Serres, *The Five Senses*, 300.

91 "The hand drives away, excludes, expels. The spectre, death, the third." Serres, *Statues*, 90.

noise and disorder. This path then becomes reason. It makes sense and should be followed as it promises the least possible effort.⁹² Copies of the primarily idealised path become automated through their projection⁹³ into theories and practices. The one who is able to follow becomes experienced. He becomes an expert.⁹⁴ The expert's activity consists of administering this path according to a defined procedure. The rigorousness of the procedure secures its future replication. This is incorporated in technologies and tools and helps to maintain the line.

The adequate usage of technologies and tools entails following their intrinsic lines. These lines guide activities—expertises—that go in sync with that which the tools permit to do in a priorly rationalised manner. Everything has to run in sync alongside the same line in order to be able to move towards the origin – to harmonise and thereby get rid of any noise. This mechanical enframing⁹⁵ is itself framed in the method which needs to be utilised.

We can see this in practice in a modern and still contemporary agriculture. It creates an asymmetric metabolic relationship between the landscape and the city. The gap between man and nature⁹⁶ gets closed by the technological forces of an industrial agriculture.⁹⁷ Technologies perform at best on hitherto deserted and flattened grounds. Scientific methods turn a flourishing nature into a flat plateau. They aim to liberate themselves from the wildness entailed in the local conditions. Each method makes up a path that merely passes through the desert and thereby frames one image—one reality—as *Flat Land*.

In order to overcome this monocultural approach, we follow Michel Serres' proposition, throughout the course of our *Ventures*, to come along with the poet that strives for *Vertical Scapes*.⁹⁸ These *Vertical Scapes* allow for rich panoramas and thereby make the thickness of the real graspable.

92 "Arriving at the best result with the least effort: managing one's heritage like a good paterfamilias, earning the maximum by paying the minimum. The economy of the laws of nature, or the supposedly natural laws of economics. The classical age has triumphed here; this most direct strategy, which has become reason, is the only one we know." Serres, *The Five Senses*, 260.

93 "Science becomes research through the projected plan and through the securing of that plan in the rigor of procedure. Projection and rigor, however, first develop into what they are in methodology," Heidegger, *The Question Concerning Technology, and Other Essays*, 120.

94 "'Having had experience; skilful', from Old French expert, expert 'experienced, practiced, skilled'" See *Etymology Dictionary*, s.v., 'Expert'.

95 "Enframing means the gathering together of that setting-upon which sets upon man, i.e., challenges him forth, to reveal the Real, in the mode of ordering, as standing-reserve. Enframing means that way of revealing which holds sway in the essence of modern technology and which is itself nothing technological," Heidegger, *The Question Concerning Technology, and Other Essays*, 20.

96 Marx names this a "metabolic rift." For further details, see Marx, *Capital: A Critique of Political Economy*.

97 "Capitalist production, therefore, develops technology, and the combining together of various processes into a social whole, only by sapping the original sources of all wealth – the soil and the labourer." Marx, *Capital: A Critique of Political Economy*, 556.

98 "Method passes through the forest considering the trees of no account; it crosses the wide sea. Thus the farmer ploughs the field to kill all plants and roots and to coax it so that a single plant may flourish without rivals; he despises as a savage the woodsman who is expert in trees and vines, in the places and times of each, finding his way in the forest with no paths or compass, by means of markers so ingrained that they become instinctive. Taking the straight path out of the woods without seeing anything is equivalent to liberating oneself from savagery or wilderness. These two relationships to places and space are still the distinguishing mark today of the distance between the man of science and the man who is called, disparagingly, a literary man or poet—wild—the distance between the landscape and the panorama." Serres, *The Five Senses*, 270.

The *Horizontal Scapes* are amalgamated in theories and thus allow for a knowledge. Theory's productive twin practices engineering alongside constantly updated technologies. The prevailing analytical and methodical momentum enables the generalisation of *Land*.⁹⁹ It defines a partition, a part on a flat surface, within set boundaries. Thereby nature can be made a *Flat Land*.

GROUND, INTELLIGIBLE, AXIOMATICS

The principle of sufficient reason¹⁰⁰ stipulates that everything must have a reason. Everything needs to have a ground. Any fact necessitates a consistent explanation. With this claim mathematics has become intimately linked to our physical reality. This intelligible ground is made up of axioms. They are the starting points and foundation of reasoning and do not necessitate any prior proof. Theorems in turn are grounded in axioms and allow for a spectrum of meaningful operations and consistent combinatorics. Logic is used to deduce theorems from axioms. It must preserve the truthfulness of the axiom. If logically deducible, the statements become true. This truthfulness can solely be derived from the axioms.¹⁰¹

This notion of truth neglects anything that relates to religion, tradition, or any other kind of belief system that is in one way or another a subject-driven attempt. It instead provides a generalised assurance for consistency for any kind of area to gain true propositions if derived from an axiomatised and therefore internally coherent ground. These *Land Scapes* are based on necessities. They allow for contingencies with the promise of truthfulness.

In arithmetic and logic, systems of axioms make up a well rooted foundation upon which basic propositions can make an objective reality possible.¹⁰² We find similar attempts in the formal logic of Bertrand Russell¹⁰³ and Alfred North Whitehead¹⁰⁴ as well as a deductive system without meaning by David Hilbert.¹⁰⁵ These formal systems reach their limits, as Gödel's incompleteness theorems show. Gödel states that any axiomatic system which is capable of modelling basic arithmetic is either incomplete or inconsistent.¹⁰⁶

99 "Old English *lond, land*, 'ground, soil,' also 'a definite portion of the earth's surface owned by an individual or home of a nation.'" See *Etymology Dictionary*, s.v., 'Land'.

100 "The Principle of Sufficient Reason is a powerful and controversial philosophical principle stipulating that everything must have a reason, cause, or ground." See Melamed and Lin, 'Principle of Sufficient Reason'.

101 "An axiom or postulate is a statement that is taken to be true, to serve as a premise or starting-point for further reasoning and arguments. The word comes from the Greek *axiōma* (ἀξίωμα) 'that which is thought worthy or fit' or 'that which commends itself as evident'." See *Wikipedia*, s.v., 'Axiom'.

102 "What Russell (and, before him, the German mathematician Gottlob Frege) sought to show was that all the axioms of number theory can be deduced from a small number of basic propositions certifiable as purely logical truths." Nagel and Newman, *Gödel's Proof*, 42.

103 For further details, see Irvine, 'Bertrand Russell'.

104 For further details, see Desmet and Irvine, 'Alfred North Whitehead'.

105 For further details, see Zach, 'Hilbert's Program'.

106 "The first incompleteness theorem states that no consistent system of axioms whose theorems can be listed by an effective procedure (i.e., an algorithm) is capable of proving all truths about the arithmetic of the natural numbers. For any such consistent formal system, there will always be statements about the natural numbers that are true, but that are unprovable within the system. The second incompleteness theorem, an extension of the first, shows that the system cannot demonstrate its own consistency." *Wikipedia*, s.v., 'Gödel's Incompleteness Theorems'.

INFINITE, WAVE, FREQUENCY

The ground aims for orders of the infinite plane of the real. It allows consequent activities to be consistently reasoned. Though this common ground makes up a continuous infinite wave. It becomes continuously annulled and re-triggered. Within the domain of agriculture, inventions such as fertiliser by Fritz Haber¹⁰⁷ make this visible. The technology of chemical treatment for plant nutrition allows for a dynamic relationship with time and space, with the aim of higher yields. The attempt tries to integrate everything with an expanding logic, analytically tuned towards optimisation. The origin in nature gets optimised and copied in an infinite re-production¹⁰⁸ – a frequency change from a traditional expansive to an industrial intensive type of farming that entails a novel order.¹⁰⁹ However, this attempt reaffirms nature as the sole common ground.

UNDERSTAND, SAME, DIMENSIONS, FINITE

The real—the shape of nature—finds expression in a multitude of forms. In order to reach an understanding of these individual points, Joseph-Louis Lagrange¹¹⁰ orchestrates them alongside interpolations that are derived from arithmetic formulas. Lagrange draws lines that pass multiple points. Polynomial – many lines.¹¹¹ Each line has multiple names. Multiple theories aim to read and analyse the cosmic order. They are made sense of alongside the formula that generalises. They relate to what can be understood by the formula, which was itself rationalised beforehand. Thereby each plotted line can be owned individually. These individual movements towards the origin are linked back to general anchors. Lagrange aims for the lines' common root, the polynomial root. A root that makes it possible to draw a line through the points, a zero function that allows for harmony and stability.¹¹² Everything that follows finds its foundation, stability, and position in this essence.¹¹³

These *Land Scapes* frame the essence of nature. They make the text of nature—the wild and yet undomesticated—alongside individual movements towards the origin readable. These movements towards the unreachable are merely intelligible. Each individual linearity makes up one dimension of reality.¹¹⁴ A certain characteristic. An analysed shape of the equality of the individual

107 See Haber, 'The Synthesis of Ammonia from its Elements, Nobel Lecture, June 2, 1920'.

108 "Yet I would still like to know what produce means. Those who call production reproduction make the job easy. Our world is full of copiers and repeaters, all highly rewarded with money and glory. It is better to interpret than to compose; it is better to have an opinion on a decision that has already been made than to make one's own. The modern illness is the engulfing of the new in the duplicata, the engulfing of intelligence in the pleasure [*jouissance*] of the homogeneous. Real production is undoubtedly rare, for it attracts parasites that immediately make it something common and banal. Real production is unexpected and improbable; it overflows with information and is always immediately parasited." Serres, *The Parasite*, 4.

109 "It might be stated as a general formula that the technology of reproduction detaches the reproduced object from the sphere of tradition. By replicating the work many times over, it substitutes a mass existence for a unique existence. And in permitting the reproduction to reach the recipient in his or her own situation, it actualizes that which is reproduced." Benjamin et al., *The Work of Art in the Age of its Technological Reproducibility, and Other Writings on Media*, 22.

110 For further details, see Wikipedia, s.v., 'Joseph-Louis Lagrange'.

111 "The word polynomial joins two diverse roots: the Greek *poly*, meaning 'many', and the Latin *nomen*, or name. It was derived from the term binomial by replacing the Latin root *bi-* with the Greek *poly-*." See Wikipedia, s.v., 'Polynomial'.

112 "The roots of a polynomial are those values of the variable that cause the polynomial to evaluate to zero." See Math Open Reference, 'Root (of a Polynomial)'.

113 See Hovestadt, 'Elements of a Digital Architecture'.

lines – the same. Lines that together make up one formula. This generalisation enables an understanding, the ability of description and predication as well as that which is rooted and thereby stabilised within this finiteness. A root that takes place and gives a position to the *Land*.

NATURAL, SHAPES, READ, WILD, COUNTRYSIDE

However, the local *pagus*,¹¹⁵ a rustic element, is not yet completely covered by the deserted plain of the rural. Its multitude can neither be fully framed nor understood. Its shape entails the infinity of nature. Hence it becomes celebrated as the wild, a romantic transfiguration which we can see in the current longing tendencies of the green environmental movement to go back¹¹⁶ to the local, straight away.

The country allows for multiple rambles through local *pagus*. Adventurers¹¹⁷ are wandering the earth¹¹⁸ and search for unity and harmony, views on and aspects of nature.¹¹⁹ They search equilibria between god, man, world, and nature in order to gain growth proportionally to the gifts rooted in the natural shapes – natural substantial extracted by the domestication of the wild. By means of constructed *Scapes* and analytical power, they unveil ostensibly given harmonies. They make *Land* distinct—as artificiality—from the wild. A clear reading of the cosmic order of that which is given.¹²⁰ The natural shapes get a form.¹²¹

114 "Dimension must be first of all understood in the sense of size, and then in the sense of a topological invariant defining a space in two or three dimensions, or in a fractional dimension. As a result, our vision is immediately transformed and turned upside down. The beauty lies next to her component parts: tissue, cells, large molecules, or otherwise in the middle of her tiny twin or cloned sisters. In the midst of her elemental composition and her possible reproductions." Serres, *The Five Senses*, 240.

115 "The *pagus*, canton, department, partition of ground or space, is a piece of the country, an element of the countryside: a patch of lucerne, vineyard, plot of land, small meadow, neatish garden and its enclosure, village square, tree-lined walk. Held in tenure by the peasant, the *pagus*—his age-old noble lineage—is where rustic divinities dwell. Gods repose there: in the hollow of the hedge, in the shadow of the elm." Serres, *ibid*, 236.

116 See Wikipedia, s.v., 'Green Politics'.

117 "While I dared at that time (1806) to unify great land masses into a single portrait of Nature and to discourse before the public upon subjects of a complexion that bespoke the somber disposition of our minds, I will now, restricting myself to a narrower variety of phenomena, attempt to sketch the friendlier picture of luxuriant vegetation and effervescent river valleys." Humboldt, *Views of Nature*, 117.

118 More than 200 years after Humboldt, Günther Vogt states: "A landscape is first and foremost visual. We walk and drive through landscape and in this way become a part of the object we are researching. Forest, meadow, field and river create a conglomerate that we call landscape. The only border seems to be the horizon. Concentrating on detail activates several senses. In the course of close examination, we see, smell and taste a complex entity of landscape." Vogt and Olafur Eliasson, *Miniature and Panorama*, 24. Vogt bases his conceptions on the strollology of the sociologist Lucius Burckhardt. "Strollology—the science of walking—was quick to develop a notion of architecture and urbanism, planning and building, for the globalized world. It proved useful as an instrument with which to render visible hidden aspects of the man-made environment, and to challenge conventional modes of perception." Jesko Fezer and Martin Schmitz, *Lucius Burckhardt Writings. Rethinking Man-made Environments*, 25.

119 Rick Dolphijn was also travelling the world in order to frame 'Foodscapes'. He does so by looking for an ethics of food in the Deleuzian sense of the word. "It does not come up with rules that inform us as to 'what is good', but shows us ways of searching for it, composing a manifold of scapes based on how foods affect and are affected." See Dolphijn, *Foodscapes*, 10. Dolphijn is looking for concepts, but in his attempt, they do not become machines but merely stay representations – maps.

120 "Generalization of physical appearances and enumeration of results belong to the study of the Cosmos, which admittedly remains for us an inductive science. But the living description of organisms, of animals and of plants, within the context of their natural local relationship to the many-faceted surface of the Earth (as a small part of the Earth's collective life) presents the material of that study. Wherever this description can examine great natural phenomena in an aesthetic manner, it excites the mind." Humboldt, *Views of Nature*, 142.

121 "The distinction between a place where nature was cared for and the surrounding untended wilderness came to be called landscape: a formal artifact of nature crafted for both utilitarian and symbolic purposes." Girot, *The Course of Landscape Architecture*, 335.

The movements start from the centre and aim to make the wild their own(ed) unified¹²² countryside¹²³ with the creation of thorough maps and territories.¹²⁴ Nature becomes deserted and rationalised, as a *Land Scape*.¹²⁵

The *Land Scape* is owned. It is an economical necessity for the city, still rooted in divine laws but with an earthly concentration of power, ownership, and control¹²⁶—the key characteristics of feudalism¹²⁷—a continuous tyranny of the centre over its periphery,¹²⁸ the city's territory.

REFLECTIONS ON ENTROPY

The sheer vastness of the multitude of the local, and the principal tendency entailed therein towards disorder,¹²⁹ makes the real entropic.¹³⁰ Representational models aim to reflect on this nature, however. They hard-wire a reality and lay it out as projected plans. These World-Pictures,¹³¹ as Heidegger calls them, come in the form of painted mirrors and are at best in sync with the real. They enable the display of all that which is in order to be clearly read and understandable: quite a complicated undertaking.

SYSTEMS, PLANE, NETWORKS, COMPLICATION

The multitude of localities becomes arranged by a global intelligible framework which makes nature a knowable entity.¹³² A system sets, orders, and fixes the real positions of the partitioned individual parts and units of the orchestrated whole in a hierarchy.¹³³ All on a plane of the real. The system thereby defines the limits of the possible and excludes that which is external to its

122 "'Section of a country, piece of land'; mid-15c., perhaps literally 'one side of a country'; from country + side (n.); hence, 'any tract of land having a natural unity.'" See *Etymology Dictionary*, s.v., 'Countryside'.

123 "The countryside brings together places, a page of pages. The desert, with neither hearth nor home, tends towards the global, nothing new ever appearing in its homogeneous space. Method crosses the desert easily but is hindered by the countryside, every place is an obstacle. A walk through the countryside is called a ramble." Serres, *The Five Senses*, 259.

124 We can find a similar approach to lay out a whole country in front of us in Diener and ETH Zürich, Studio Basel, *Die Schweiz – ein städtebauliches Portrait*.

125 "The countryside, pages surrounded by rambling paths, becomes a logical model, and logic, conversely, redraws the landscape." Serres, *The Five Senses*, 286.

126 A one-directional relationship, from the host to the parasite. "The abuse value, complete, irrevocable consumption, precedes use—and exchange—value. Quite simply, it is the arrow with only one direction." See Serres, *The Parasite*, 80.

127 Jane Jacobs precisely elaborates the ordering, grounding and framing of the natural shapes as *Land* by the cities *Scapes* in Jacobs, *The Economy of Cities*.

128 "This early association of urban growth with food production governed the relation of the city to its neighboring land far longer than many observers now realize." Mumford, 'The Natural History of Urbanization'.

129 See *Wikipedia*, s.v., 'Second Law of Thermodynamics'.

130 "Measure of the disorder of a system". See *Etymology Dictionary*, s.v., 'Entropic'. For further details, see *Wikipedia*, s.v., 'Entropy (Arrow of Time)' and *Wikipedia*, s.v., 'Entropy (Information Theory)'.

131 "Hence world picture, when understood essentially, does not mean a picture of the world but the world conceived and grasped as picture. What is, in its entirety, is now taken in such a way that it first is in being and only is in being to the extent that it is set up by man, who represents and sets forth." Heidegger, *The Question Concerning Technology, and Other Essays*, 129–30.

132 Paul Edwards on the famous slogan "Think globally, act locally": "It asserts an intimate relationship between two vastly different scales: macro, world-scale environmental and economic systems, on the one hand, and the micro sphere of individual choice and action, on the other. It extends an arrow of agency, comprehending macro effects as the results of vast aggregations of micro causes. Thus it locates the meaning of individual action in its relationship to the gigantic whole. Finally, it affirms that global change matters so deeply that it should occupy the intimate corners of everyday awareness and guide each person's every choice." Edwards, *A Vast Machine*, 1.

133 "Internal differentiation means the way in which a system builds subsystems, i.e. the difference of system and (internal) environments within itself. Forms of differentiation determine the degree of complexity a society can attain. Sociocultural evolution began with segmentary systems. Some of these societies developed a higher order of differentiation, above that of families or villages, namely stratification according to rank. All traditional societies that produced enough complexity for high culture were stratified societies and, in this sense, hierarchical systems." Luhmann, 'The World Society as a Social System', 132.

frame.¹³⁴ The local can either be included and integrated, or it simply does not exist.¹³⁵

This finds an expression in the concept of urbanisation—the grounding of the city on infrastructure, supported by capital and implemented by administration—in early modernist proposals by urban planners such as Ildefons Cerdà in Barcelona¹³⁶ and Otto Wagner in Vienna.¹³⁷ Various other modern architects also designed exemplary blueprints that related land and city. Le Corbusier constructs the ‘*Ville Radieuse*’, with its counterpart the ‘*Ferme Radieuse*’, a functionalist plan of the “city as machine for living” sourced by agriculture.¹³⁸ Ludwig Hilberseimer integrates agriculture by expanding the functionality of the city towards a holistic regional system in the ‘New Regional Pattern’.¹³⁹ Frank Lloyd Wright elaborates a natural and organic form of architecture embedded in harmony with the rhythms of a decentralised agriculture in the ‘Broadacre City’.¹⁴⁰ Ebenezer Howard connects elements to an idealised construction grounded upon an endless green site in the ‘Garden Cities of tomorrow’.¹⁴¹

Urbanism continuously expands the *Scape*. It frames increasingly vaster swathes of *Land* and thereby reaches a certain ‘bigness’.¹⁴² An intelligible centre orchestrates individual sensible multitudes and aims for order and balance of the whole and its parts. Infrastructures and logistics become the primary conditions for the development of the city.¹⁴³ A system of functions, processes, and dynamic flows of matter and energy holds possibilities that can certainly be unlocked throughout dynamic developments.¹⁴⁴ A fertile ground that enables the creation of value.

Reyner Banham proclaims the control of parameters from multiple interlocking machines towards a higher performance of

134 “A self-referential system defines itself by the way in which it constitutes its elements and thereby maintains its boundaries. In systems theory, the distinction between system and environment replaces the traditional emphasis on the identity of guiding principles or values. Differences, not identities, provide the possibility of perceiving and processing information.” Luhmann, 133.

135 They would otherwise lose the ability to govern alongside general equations. Michel Serres states this for all three types of systems that he names in ‘The Origin of Language: Biology, Information Theory, & Thermodynamics’: “... the first, logico-mathematical, is independent of time; the second, mechanical, is linked to reversible time; the third, thermodynamic, is linked to irreversible time.” See Serres, ‘The Origin of Language’, 72.

136 Ildefons Cerdà proposed a plan for the extension of Barcelona. For further details, see *Wikipedia*, s.v., ‘Ildefons Cerdà’.

137 Otto Wagner proposed the expansion of an urban transit system outwards to the new neighbourhoods of Vienna in order to enable the ‘Unlimited City’. For further details, see Geretsegger, Peintner, and Pichler, *Otto Wagner*.

138 For further details, see Le Corbusier, *The Athens Charter*.

139 For further details, see Hilberseimer, *The New Regional Pattern*.

140 “As I see Architecture, the best architect is he who will devise forms nearest organic as features of human growth by ways of changes natural to that growth.” Wright, ‘Broadacre City: A New Community Plan: Architectural Record (1935)’.

141 For further details, see Howard, *Garden Cities of To-morrow*.

142 See Koolhaas, ‘Bigness or the Problem of Large’.

143 “The word ‘infrastructure’ typically conjures associations with physical networks for transportation, communication, or utilities. Infrastructure is considered to be a hidden substrate – the binding medium or current between objects of positive consequence, shape, and law. Yet today, more than grids of pipes and wires, infrastructure includes pools of microwaves beaming from satellites and populations of atomized electronic devices that we hold in our hands. The shared standards and ideas that control everything from technical objects to management styles also constitute an infrastructure. Far from hidden, infrastructure is now the overt point of contact and access between us all – the rules governing the space of everyday life.” Easterling, *Extrastatecraft*, 11.

144 “Landscape is a medium, it has been recalled by Corner, Allen, and others, uniquely capable of responding to temporal change, transformation, adaptation, and succession. These qualities recommend landscape as an analog to contemporary processes of urbanization and as a medium uniquely suited to the open-endedness, indeterminacy, and change demanded by contemporary urban conditions.” Waldheim, *The Landscape Urbanism Reader*, 39.

engineered environments.¹⁴⁵ Archizoom's pop vision of a 'No-Stop City' urbanisation treats infrastructure as a form- and limitless repetition of conditions.¹⁴⁶ Andrea Branzi constructs a territory for the new economy in 'Agronica', focusing on transportation, communication, infrastructure, environmental conditions, and an urbanisation with a holistic ecological awareness.¹⁴⁷ Archigram's mediatised machinic environments intertwine landscape with architecture at all scales and deal with systemic flexibility, the dissolution of buildings and the final goal of the total consumption within ludic atmospheres of vigilance absorption.¹⁴⁸ Buckminster Fuller develops the 'Operating Manual for Spaceship Earth', a cybernetic approach of operations, processes, and integral functions treating the Earth as a mechanical vehicle that needs to work, driven by the question, "how big can we think?" in order to make the world work for humanity.¹⁴⁹

The emerging ecological urbanism attempts to control rationalised and parametrised flows alongside a geometric infrastructure of holistic systems. This cybernetic notion of a system¹⁵⁰ is still conceived upon reason and causality in a Newtonian sense of determinism:¹⁵¹ generalised, a complicated mechanical system at work. The abstract model of a mechanic chain expands towards a network-building of holistic ecologies which administer everything by knowledge. An analytical and scientific understanding of nature and its properties makes up a representational model with measurements at specific points, related to engineered chains of causes and effects, albeit imaginary and normative. Everything becomes named, valued, and fixed.¹⁵² Since there appear only forms, a systemic approach neglects the shapes of the underlying nature. The system harmonises forms and realises a horizontal intelligible plane. The local becomes integrated into a global system of knowledge.¹⁵³ Hence, arithmetic helps to treat

145 "A large part of that ease and leisure comes from the deployment of technical resources and social organisations, in order to control the immediate environment: to produce dryness in rainstorms, heat in winter, chill in summer, to enjoy acoustic and visual privacy, to have convenient surfaces on which to arrange one's belongings and sociable activities. For all but the last dozen decades or so, mankind has only disposed of one convincing method for achieving these environmental improvements; to erect massive and apparently permanent structures." Banham, *The Architecture of the Well-Tempered Environment*, 18.

146 For further details, see Branzi, *No-Stop City*.

147 For further details, see Waldheim, 'Notes Toward a History of Agrarian Urbanism'.

148 For further details, see Sadler, *Archigram*.

149 For further details, see Richard Buckminster Fuller, *Operating Manual for Spaceship Earth*.

150 Norbert Wiener aims for the control of communication based on a statistical mechanics. "In the case of communication engineering, however, the significance of the statistical element is immediately apparent. The transmission of information is impossible save as a transmission of alternatives. If only one contingency is to be transmitted, then it may be sent most efficiently and with the least trouble by sending no message at all. The telegraph and the telephone can perform their function only if the messages they transmit are continually varied in a manner not completely determined by their past, and can be designed effectively only if the variation of these messages conforms to some sort of statistical regularity. To cover this aspect of communication engineering, we had to develop a statistical theory of the amount of information, in which the unit amount of information was that transmitted as a single decision between equally probable alternatives." Wiener, *Cybernetics or Control and Communication in the Animal and the Machine*, 10.

151 See Hovestadt, 'Elements of a Digital Architecture', and Hovestadt, 'Cultivating the Generic: A Mathematically Inspired Pathway for Architects'.

152 This is what the economical theories up until Marx were doing. They were founding the dimensions of the household. For further details, see Smith, *An Inquiry into the Nature and Causes of The Wealth Of Nations*, and Marx, *Capital: A Critique of Political Economy*.

153 "... engineering initially was applied not to the city but to the countryside of the territory," as "civil engineering became a tactic of spatial organization that blended similarities and differences, norms and exceptions, in one total and flexible system of knowledge." Aureli, *The Possibility of an Absolute Architecture*, 160–61.

this infinite void horizon. The calculation with numbers allows for balances between a sum and its individual values. The system gets a real body on Earth. A unity, a result, a sum.¹⁵⁴ The system becomes reality. The land thereby loses its specificity. It becomes the territory of the city.¹⁵⁵ *A Flat Land*.

IMAGES, FUNCTIONS, LIMITS, FORMS

The extraterritorial image 'The Blue Marble', taken by the crew of the spacecraft Apollo 17, framed the whole Planet Earth.¹⁵⁶ The limits of the whole seemed to be clear and have since then seemingly not been negotiable anymore. Our shared ground has to be treated as a necessity. A necessity that, since our expulsion from a lap of luxury, frames various *Land Scapes* of possibilities – *Land Scapes* from which an escape seems not worth considering yet.

The *Land* is framed from a certain position which is taken by the *Scape*.¹⁵⁷ Either it frames a certain aesthetic appearance¹⁵⁸ in perspective or it flattens a topography from a global superincumbent perspective. In both cases, one is expected to know beforehand in order to find and take the right position to design¹⁵⁹ and paint a unified image¹⁶⁰ – a public view, a *Land Scape*.¹⁶¹

The frames mark the limits of that which can objectively be known. Within these frames we have to seemingly rely on a generous nature provided by our Planet Earth. The Earth is our host and provides us with resources. This parasitical relation depicts man merely as consumer. It poses an imperative to live at best in sync with that which nature has to offer and repeatedly compels us to set the limits anew.

The city, which sources from the given, perpetually fears the danger of a dystopian population growth exceeding the productivity of nature – the 'Malthusian trap'.¹⁶² From early economic theories to the Club of Rome,¹⁶³ limits are reasoned based upon the apparent scarcity of natural resources. One tries to understand all this with extended analytics, debates, and theories and describe

154 See Hovestadt, 'Elements of a Digital Architecture'.

155 For an in-depth reading of a notion of territory, see Foucault, *Security, Territory, Population*.

156 "The Blue Marble is an image of Earth taken on December 7, 1972, from a distance of about 29,000 kilometres (18,000 miles) from the planet's surface. It was taken by the crew of the Apollo 17 spacecraft on its way to the Moon, and is one of the most reproduced images in history." *Wikipedia*, s.v., 'The Blue Marble'.

157 Man-made landscapes that are dealt with in disciplines such as landscape design, landscape architecture, landscape planning and landscape urbanism.

158 Famous representatives of the Land Art movement from the 1960s and 70s were Richard Long, Robert Smithson, and Dennis Oppenheim, amongst others. They took part in the 'Earth Art' exhibition at the Andrew Dickson White Museum of Art at Cornell University, Ithaca, New York. See Andrew Dickson White Museum of Art, *Earth Art*. This conceptual attempt can be found until today. See for example the prominent work of Olafur Eliasson, 'Studio Olafur Eliasson'.

159 "Landscape architecture is the design of outdoor areas, landmarks, and structures to achieve environmental, social-behavioural, or aesthetic outcomes." See *Wikipedia*, s.v., 'Landscape Architecture' and Jellicoe and Jellicoe, *The Landscape of Man*.

160 Daniel H. Burnham about Frederick Law Olmsted, the father of American landscape architecture: "[He is] first in the hearts and confidence of all American artists. He paints with lakes and wooded slopes; with lawns and banks and forest-covered hills; with mountainsides and ocean views ...". See Martin, 'He Paints With Lakes And Wooded Slopes...'

161 "In many ways the history of civilization is a history of humans' relationship with nature. Starting from the dual inclination to clear land for cultivation and to enclose space for protection—the forest clearing and the walled garden—there emerges a vital and multifaceted narrative that describes our cultural relationship to, and dependence on, the landscape." See Girot, 'Chair of Landscape Architecture', and Girot, *The Course of Landscape Architecture*.

162 "I said that population, when unchecked, increased in a geometrical ratio, and subsistence for man in an arithmetical ratio." See Malthus, *An Essay on the Principle of Population*, 6.

163 See Meadows, *The Limits to Growth*.

the city-nature relation as an economical necessity with the hope for lesser exploitation and impact of the systems on the environment in order to sustain humanity on a limited Planet Earth. The given marks out the limits and becomes the foundation for reasoning – a myth that since then has taken its course. Even though the outlook paints images of a constant crisis, those images are constantly updated¹⁶⁴ and re-designed.¹⁶⁵ Revolutions, like technological inventions such as fertiliser, thereby change the global outlook of formerly naturalised calculations. This does not merely apply to the production and consumption of food,¹⁶⁶ this applies in principle to anything that is still treated as a resource.

The ground comes under the control of economical forces, whereby functions order and harmonise equal parts towards a common root. This allows for the management and modification of so called *Land Use*.¹⁶⁷ The underlying theory of rent finds its limits in “the law of diminishing returns,”¹⁶⁸ a fundamental principle since classical economics. It puts limits on the calculated sum of the production processes.

The limits of the necessary resources induce optimisation processes of a worldwide formalised food system¹⁶⁹ linked to the performance of expanding urban infrastructures and logistics.¹⁷⁰ The grounding of the city in nature forces it to become more productive.

NUMBERS, VALUATION, CALCULATION, SIMULATION, HARD-WIRING, CHAIN

The synthetic interplay of multiple functions in unity becomes a construction. A construction of engineered functionalities in connection with food is called a value chain. Food value chains are built upon the performance of global infrastructures as well as their abilities of a just-in-time logistics. Articles float as points in spacetime within the administered frameworks of resources, productions, logistics, and consumption—made possible by an urban ground—a cascade allowing frictionless flows of matter, energy

164 *The Limits to Growth* of 1972 were updated in 1992 in *Beyond the Limits* and in 2006 in *Limits of Growth – the 30-Year Update*. For further details, see Meadows, Meadows, and Randers, *Beyond the Limits*. and Meadows and Randers, *Limits to Growth*.

165 “The endless reproduction of scarcity within our world is mostly designed, and so the obverse is also true, namely that design can engage with conditions of scarcity.” For further details, see Goodbun, Klein, and Rumpffhuber, *The Design of Scarcity*, 42.

166 The Expo 2015 ‘Feeding the Planet, Energy for Life’ hosted in Milan redrew global scenarios that strengthened the image of a limited ‘Planet Earth’ *Wikipedia*, s.v., ‘Expo 2015’.

167 “Land use involves the management and modification of natural environment or wilderness into built environment such as settlements and semi-natural habitats such as arable fields, pastures, and managed woods.” *Wikipedia*, s.v., ‘Land Use’.

168 The “law of diminishing returns” can be traced back to early economists such as Johann Heinrich von Thünen, Jacques Turgot, Adam Smith, James Steuart, Thomas Robert Malthus, as well as David Ricardo. Ricardo attributed the successive diminishment of output to the decreasing quality of the inputs. “The produce of the earth – all that is derived from its surface by the united application of labour, machinery, and capital – is divided among three classes of the community; namely, the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the laborers by whose industry it is cultivated.” See Ricardo, *On the Principles of Political Economy, and Taxation*, v.

169 “A food system includes all processes and infrastructure involved in feeding a population: growing, harvesting, processing, packaging, transporting, marketing, consumption, and disposal of food and food-related items.” *Wikipedia*, s.v., ‘Food Systems’.

170 “First of all I mean that this difference—between city and landscape—in fact no longer exists. And if this is the case, then we must discuss landscape in an entirely different way. Urbanized landscape means that the city has spread extensively into the landscape and taken possession of it. Essentially, this is not a new phenomenon, but it has acquired new dimensions. Landscape, at least in the form we in Europe know it today, has been urbanized for centuries, whether through forestry, transformation for the purposes of agriculture, or human settlement.” Vogt and Bornhauser, *Landscape as a Cabinet of Curiosities*, 49–50.

and information that sums up as processed food. The process realises at each step horizontal mechanical machines that together make up a functioning unity—a *Land Scope*—in a seemingly natural equilibrium of relations – a rationalistic mechanic order.

These representations make nature sensible, knowable and administrable. Therein *Land* becomes represented by numbers. Like calories, CO₂ emissions or monetary values.¹⁷¹ The underlying economy of numbers allows for the foundation of balanced systems. The resulting images thereof are based on previously determined calculations and normative models which in turn are able to hard-wire reasonable lines between primarily defined objects, and thereby frame causal relations.

We find these simulations wherever we look. Our relation as humanity to Planet Earth is defined by them. A growing global population, a high rate of people living in cities, and the wish for a sustainable development of the relationship between humans and nature are issues at stake in the Agenda 21 plan of action as well as in outlooks by the FAO (Food and Agriculture Organization) by the United Nations.¹⁷² The balances of these calculations aim for an equilibrium of our reality. They naturalise the underlying givens and translate it into knowledge. A *Flat Land*, that becomes the source for a continuous extraction of values.¹⁷³

OIKOS, HOUSEHOLD, ADMINISTRATION, REALITY, RULESETS

The limits of reality seem fixed and non-negotiable. But we have to maintain its interior, which is commonly referred to as the economy – Greek, *oikos* 'house', *nomos* 'manage'¹⁷⁴. The constitution of a household arose within the Enlightenment movement as a manner in which to act within nature. Incremental movements lead to the grounding of the household as our global economy, which underwent formalisation in economical theories.¹⁷⁵ These

171 "To suppress all objects in favour of words. To suppress the word itself and its meaning in favour of codes and numbers. To eliminate culture with currency." Serres, *The Five Senses*, 188.

172 See United Nations Conference on Environment and Development, *Agenda 21*.

173 We can find something similar in Niklas Luhmann's notion of communication. "The system is closed with respect to the meaningful content of communicative acts. This content can be actualized only by circulation within the system." He further states: "Modern society is, therefore, a world society in a double sense. It provides one world for one system; and it integrates all world horizons as horizons of one communicative system. The phenomenological and the structural meanings converge. A plurality of possible worlds becomes inconceivable. The world-wide communicative system constitutes one world which includes all possibilities." See Luhmann, 'The World Society as a Social System', 133.

174 See *Etymology Dictionary*, s.v., 'Economy'.

175 The movements which aimed to constitute a household in nature comprised economical theories such as mercantilism, physiocrats, and classical economics. The theory of mercantilism emphasises the sovereign's opulence by the accumulation of gold and the balance of trade which is achieved by collecting money from circulation regulations. The principles and methods of commerce are the trade of goods between towns and colonies and the construction of a state household. The naturalisation of money is assumed, as mercantilism holds that wealth is fixed and finite – which is precisely examined in Thomas More's *Utopia*. See More, *The Utopia of Sir Thomas More*. Another critique of the symbolic is formulated by the physiocrats as for them the wealth of nations is derived solely from the value of agriculture – in a proportional geometric order through an earthly mastership – an economical model described by Francois Quesnay in the *Tableau économique*, reasoned upon the powers of God. See Quesnay, *Quesnay's Tableau Économique*. Adam Smith states that, "the most opulent nations, indeed, generally excel all their neighbours in agriculture as well as in manufactures; but they are commonly more distinguished by their superiority in the latter than in the former. Their lands are in general better cultivated, and having more labour and expense bestowed upon them, produce more, in proportion to the extent and natural fertility of the ground." See Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations*, 6. Smith becomes the key figure in an evolving economics—the science of economy—dealing with abstract models of value chains in terms of properties of production, trade, law, custom, government, distribution, national income, and wealth – all in equilibrium maintained by an invisible hand as a self-organising power within market cycles.

theories step by step laid out a rational horizontal plane, which was intended to cover any individual activity. Elements that were primarily mystified, such as the invisible hand in the economic theory of Adam Smith,¹⁷⁶ later became parts and units of a systemic whole with Karl Marx.¹⁷⁷ Marx factored in that which was naturalised with his predecessors on a flat plane in order to gain full control over the household.

In the past, this housekeeping was done by farmers who were used to working in circular movements of cultivation, which we call agriculture. This became laid out to the linearity of a chronological agronomy.¹⁷⁸ The agronomy formulates a geocentric practice of administration where one always attempts to work in sync with cosmic conditions upon the horizontal line of the so-called environment. Thereby nature, as a household, becomes administered as a predefined *Land*. The *Land* is based on limits and scarcity and therefore needs to be treated as a necessity from which a mechanical metabolism is optimised alongside various energy translations.¹⁷⁹ A hard-wired chain of translations of energy levels is represented in equivalent values and relations and thereby frames the whole reality of food. This practice becomes incredibly efficient,¹⁸⁰ although the rationality behind this practice expels anything that vertically spaces out from the horizontal line. The desert becomes the only reality that counts: a universe of empty space, whose name it bears.¹⁸¹

The horizontal alignment to a manageable level also applies to other areas, such as natural languages. Grammar is a set of rules that together formulate a closed ruleset,¹⁸² a ruleset that structures and governs composition and thereby allows for natural languages to be consistently and coherently useable. Grammar is designed to separate philosophical language from non-sense, as Ludwig Wittgenstein states.¹⁸³ Grammar is a mechanical judge,

176 "This meant that not only did economics have its own peculiar domain of study – what we now call 'the economy', though the idea that there even was something called an 'economy' was very new in Smith's day – but that this economy operated according to laws of much the same sort as Sir Isaac Newton had so recently identified as governing the physical world. Newton had represented God as a cosmic watchmaker who had created the physical machinery of the universe in such a way that it would operate for the ultimate benefit of humans, and then let it run on its own. Smith was trying to make a similar, Newtonian argument." Graeber, *Debt*, 44.

177 See Marx, *Capital: A Critique of Political Economy*.

178 "'Science of land management for crop production'; 1796, from French *agronomie* (1761), from Greek *agronomos* 'overseer of land', from *agros* 'a field, a farm; the country', as opposed to the town (from PIE root *agro- 'field') + *nomos* 'law or custom, administering', related to *nemein* 'manage' (from PIE root *nem- 'assign, allot'). Related: Agronomist; agronomic." See *Etymology Dictionary*, s.v., 'Agronomy'.

179 "Every form of agriculture practiced in a given place and time appears first of all as a complex ecological and economic object, composed of several categories of production units that exploit different types of terrains and diverse species of cultivated plants and animals." Mazoyer and Roudart, *A History of World Agriculture*, 21.

180 "Humanity has succeeded—only recently—in providing enough food for everyone. The planet produces enough for all, for the first time in human history." Anderson, *Everyone Eats*, 3.

181 "Monoculture. Nothing new under the solitary sun. Never-ending, homogeneous rows prevent or efface the watered-silk effect; the isotope excludes the unexpected; agronomy replaces agriculture; a small number of laws replace tiny, incremental pointillist permutations. In the place of culture, chemistry, administration, profit and writing holds sway. A rational or abstract panorama expels the combinatory spectra of a thousand landscapes." Serres, *The Five Senses*, 254–55.

182 "In linguistics, grammar (from Ancient Greek *γραμματική*) is the set of structural rules governing the composition of clauses, phrases, and words in any given natural language. The term refers also to the study of such rules, and this field includes phonology, morphology, and syntax, often complemented by phonetics, semantics, and pragmatics." See *Wikipedia*, s.v., 'Grammar'.

183 Wittgenstein's famous statements: "What can be said at all can be said clearly; and whereof one cannot speak thereof one must be silent" and "the limits of language mean the limits of my world" Wittgenstein, *Tractatus Logico-Philosophicus*, 23, 74.

which parses distinctions relating to whether a sentence is either correct or not, postulates Noam Chomsky¹⁸⁴ – an approach that he also proposes to use in a generative manner. The mechanics of a formal model consisting of syntax and grammar provides the ability to unfold consistent sequences.¹⁸⁵ For Ferdinand de Saussure,¹⁸⁶ grammar is detached from the language and too dependent on, and limited by, logic.¹⁸⁷ He therefore provoked a revolution in linguistics with the aim of unravelling hidden structures of coexisting signs that are not identities but merely differential to other signs that together constitute a system.¹⁸⁸ The underlying methods find prominent applications amongst many other sciences, such as anthropology, in order to find the global structural character of social phenomena observed from strange, remote, local societies, as with the approach of Claude Levi-Strauss.¹⁸⁹ This mindset is also spreading in other areas, such as political discussions about nature, which become increasingly replaced by purely economic ones. Thereby rulesets create a scenario of a reality which guides a global discourse. They make up an imperative for correct behaviour within the limits of nature. They mark the *Land* within which possibilities are allowed to be taken up in a politically correct manner.¹⁹⁰

The attempt to frame the complexity of the real and to conduct the administration of dynamic environments alongside defined rulesets finds a symmetry in the theory of economist John Maynard Keynes.¹⁹¹ He formulates variables for the control of values within aggregates alongside machines that are controlled by the quantity theory of money and not by a state, which would merely destroy the natural equilibrium of the market. The tyranny of government control of the economy and its central planning should be handed over to individual subjects who would gain general freedom within a framework made up of a ruleset, that of a liberal system on a

184 For further details, see Chomsky, *Syntactic Structures*.

185 "Starting from an axiom and a set of well-defined rules, the desired sequences are generated 'mechanically'. Chomsky, *On Language*, 102.

186 For further details, see Saussure, *Course in General Linguistics*, 1-2.

187 We can find similarities to the problematics Levi-Strauss is dealing with. "There is no way out of the dilemma: either the anthropologist adheres to the norms of his own group and other groups inspire in him no more than a fleeting curiosity which is never quite devoid of disapproval, or he is capable of giving himself wholeheartedly to these other groups and his objectivity is vitiated by the fact that intentionally or not, he has had to withhold himself from at least one society, in order to devote himself to all." Lévi-Strauss, *Tristes Tropiques*, 384.

188 "Language is a system of signs that express ideas, and is therefore comparable to a system of writing, the alphabet of deaf-mutes, symbolic rites, polite formulas, military signals, etc. But it is the most important of all these systems. A science that studies the life of signs within society is conceivable; it would be a part of social psychology and consequently of general psychology; I shall call it semiology (from Greek *sêmeion* 'sign'). Semiology would show what constitutes signs, what laws govern them." Saussure, *Course in General Linguistics*, 16.

189 Levi-Strauss refers in *Structural Analysis in Linguistics and in Anthropology* to four basic operations of the structural method of N. Troubetzkoy: "First, structural linguistics shifts from the study of conscious linguistic phenomena to study of their unconscious infrastructure; second, it does not treat terms as independent entities, taking instead as its basis of analysis the relations between terms; third, it introduces the concept of system – 'Modern phonemics does not merely proclaim that phonemes are always part of a system; it shows concrete phonemic systems and elucidates their structure' –; finally, structural linguistics aims at discovering general laws, either by induction 'or ... by logical deduction, which would give them an absolute character.'" Lévi-Strauss, *Structural Anthropology*, 33.

190 "The implicit authoritarianism of the digital regime sits in strange tension with a world that is slowly waking up to the realization that the neoliberal universality announced after the upheavals of 1989 will not happen. Instead, political correctness is now a system shared by East and West: It is the official ideology for the twenty-first century. A perverse new human-rights charter (improved, limited, achievable, value-free) is about to unite all peoples, all regimes, and is, by definition, popular. As a substitute for the French Revolution's *liberté, égalité, fraternité*, a new universal trinity has been adopted: comfort, security, sustainability." Koolhaas, 'The Smart Landscape: Intelligent Architecture'.

191 See Keynes, *The General Theory of Employment Interest and Money*.

global scale. This is continued in further macro-economic thoughts of the monetary and financial theories of Friedrich Hayek and Milton Friedman. "Rules Instead of Authorities" is proclaimed in Friedman's *Capitalism and Freedom*.¹⁹² Michael Hardt and Antonio Negri draw this out in a critical image of an imperialist 'Empire' that acts globally and thereby rules over the entire civilised world.¹⁹³

These theories contain two seemingly opposite poles with the aim of either liberating *Land* or communalising the *Scape*. Both sides continue to celebrate the persistent gap between liberalism, the liquefying space that is supposed to deterritorialise all areas of life, and communism, which craves for a collective sovereign that shall be able to administer and control the economy and its underlying circulatory flows.

INDIVIDUAL, MULTITUDE, ORCHESTRATION

The gathering of individuals around centres and the concomitant accumulation of a population as labour made something hitherto local—the individual human and his workforce—global.¹⁹⁴ Labour was framed as a magnitude and became a novel, though peripheral, ground. Capitalism orchestrates and administers the multitude alongside global infrastructures and logistics.¹⁹⁵ This orchestration of *Land Scapes* needs to be continuously optimised since capitalism is seen as entropic.¹⁹⁶

In order to overcome these modes of dissipation and dissolution, which drive and are driven by urbanisation, Pier Vittorio Aureli proposes that architecture become an island, an archipelago. Architecture shall emancipate itself from the infinite other. This shall find expression in an absolute architectural form. Architecture shall become a subject that takes place as an individual site—specific framing—a Stop City that resists the global by means of confrontation and demarcation.¹⁹⁷ This concept makes the city an architectural project, again.¹⁹⁸ A theoretical, projective model for a radicalised orchestration of an individual absolute form at the yet urban periphery. This might enable the local land to escape the from the urban city adjudicated *Scape*.¹⁹⁹

192 See Milton Friedman, *Capitalism and Freedom*.

193 "The concept of Empire is characterized fundamentally by a lack of boundaries: Empire's rule has no limits. First and foremost, then, the concept of Empire posits a regime that effectively encompasses the spatial totality, or really that rules over the entire 'civilized' world." Hardt and Negri, *Empire*, xiv.

194 "The precondition of capitalism is the removal of the mass of the population from the soil, which makes possible the historical development of capital itself." Foster, *Marx's Ecology Materialism and Nature*, 174.

195 "With the crisis of the *ancien régime*, the advent of industrialization, and the rise of capitalism, the role of the 'urbs' absorbed the idea of "civitas" to the point that over the last three centuries we have witnessed the triumph of a new form of human association based entirely on the mastery of the urbs. Enter urbanization." Aureli, *The Possibility of an Absolute Architecture*, 8.

196 "Capitalism is, in fact, the very affordable and conservative path to death dictated by the human organism on an all-encompassing level." See Negarestani, 'Drafting the Inhuman', 195.

197 See Aureli, *The Possibility of an Absolute Architecture*.

198 "The city within the city is thus not only the literal staging of the city's lost form within the limits of architectural artifacts; it is also, and especially, the possibility of considering architectural form as a point of entry toward the project of the city. In this sense, architecture is not only a physical object; architecture is also what survives the idea of the city." See Aureli, *ibid*, 226–27.

199 Although I think that Aureli's proposal is missing the adequate level of abstraction to allow for an architectonics to cast off the urbanised ground.

200 Peter Atkins and Ian Bowler show the rich variety of disciplinary and theoretical contexts in which 'Food Studies' happen. This comprises historical, cultural, sociological, structuralist and post-structuralist, as well as systematical approaches which are all driven by a certain purpose, or as I would say, an ideology, which does not exempt their own proposed inter-/multidisciplinary approach. For further details, see Peter J. Atkins and Ian R. Bowler, *Food in Society*.

SCIENCE, ANALYSIS, COUNTING, FORMULA, RATIONALISTIC Food has no model, yet. There is no abstraction. Food science is an experimental science. Hypotheses and theories are based on observations from empirical experiments.²⁰⁰ Experiments put the sensible before the intelligible. They are on the one hand grounded in extensive analysis and on the other hand upon the statistical activities²⁰¹ of counting,²⁰² studying, describing, and interpreting appearances as well as measuring²⁰³ the state of things alongside a preset meter. However, it is difficult to make sense of all of this, even though food is sensible.²⁰⁴ The observations literally move in the dark upon many local plots. They are looking for individual points that might line up to a population and formulate a straight line²⁰⁵—a normal—and in a more complex manner include their entailed distribution.²⁰⁶ Both are aimed at showing and representing reality.

The scientific framework comprises generalisability, consistency, rigorousness and reproducibility, and thereby predictability.²⁰⁷ The experiments happen on a flattened and cleaned plateau, a space of non-law, where merely non-civic experts deal with cases in a deserted rural area. This safe and enclosed *Scape* is owned by those who know. From there, the one that knows aims to rationalise and generalise cases.²⁰⁸ Science makes itself the final tribunal.²⁰⁹ A *Scape* that aims for one ultimate judgement. It flattens the spatiality that is entailed in natural law. Science formalises and economises our relationship with nature in order to escape the overwhelming states that nature could have to offer. Science dismisses a vertical orientation.²¹⁰ It replaces this

201 Michel Foucault points at the etymological meaning of 'statistics'. "That is to say, the sovereign's necessary knowledge (*savoir*) will be a knowledge (*connaissance*) of things rather than knowledge of the law, and this knowledge of the things that comprise the very reality of the state is precisely what at the time was called 'statistics.'* Etymologically, statistics is knowledge of the state, of the forces and resources that characterize a state at a given moment." Foucault, *Security, Territory, Population*, 274.

202 "In statistics, count data is a statistical data type, a type of data in which the observations can take only the non-negative integer values {0, 1, 2, 3, ...}, and where these integers arise from counting rather than ranking." See *Wikipedia*, s.v., 'Count Data'.

203 See *Wikipedia*, s.v., 'Statistics'.

204 "At the extreme consequence of empiricism meaning becomes totally submerged in noise, the communication space becomes granular, like the space in which neither Achilles nor the arrow reaches their goal; dialogue becomes condemned to cacophony. The empirical only makes noise." Serres, *Geometry*, 75.

205 "God no doubt saw the world and things, we on the other hand merely visit them: not only because of the site occupied by the body; not only by means of tools, instruments and machines; but also intellectually: each discipline, experiment or theorem, provides a view that has to be sought after, another movement. We visit the encyclopedia, if it exists, like the world, if it exists." Serres, *The Five Senses*, 305.

206 See *Wikipedia*, s.v., 'Normal Distribution'.

207 "In the rich and novel Galilean relationship between experiments and theories, physical theorizing is meant to provide intelligibility of phenomena as well as predictability: one first observes and measures, then the theory should produce a prediction capable of confirming it. The scientifically expected future was set at the core of the understanding of modern science." Longo, 'Are Financial and Scientific Views of the World Similar?'

208 "The experimental sciences make themselves masters of this empty, desert, savage space. Philosophers thought that such space, if it existed, contained the conditions of possibility, the source, the foundation, the history, the genesis, the genealogy of all law, and even implied its distribution among several authorities, all of whom respond to the indefinite question 'by what right?' and converge toward a final reference point. By becoming owners of the space of non-law, the sciences, with their competence, furnish experts for courts and thus decide before they do, and in their place." Serres, *The Natural Contract*, 85.

209 "Natural law is dying because science has conquered its space. Science plays the role, now, of our Last Judgment. Henceforth law and science are opposed as the man-made and the natural once were, always to the benefit of the natural." Serres, *ibid*, 85.

210 "Science has never had, does not and will never have the dimensions, weight or status of a culture: to impose itself it has set aside cultures or set up its influence beside them; science does not have the status of a language, but that of language itself: it transforms evolution rather than history and affects the process of hominization. Universal in space and for every culture, this transhistorical sweep also marks its universality in time." Serres, *The Five Senses*, 337.

richness entailed in nature with merely one language that aims precisely and rigorously to represent that which is.

I will again move closer to a nascent state and look for elements that are able to entail and deal with the infinity of nature.²¹¹ In order to make nature's contingency graspable, I will aim for a communication in the universal language of mathematics. This will allow me to deal with the underlying land in a manner such that nobody needs to be originally native:²¹² a *Venture*, which I will continue to pursue through the course of this work.

COMMON GROUND, RURAL

The rustic, merely intelligible, divinities, that dwell in the *pagus*²¹³ become ruralised, hence sensibilised.²¹⁴ The open, rustic, becomes unified, named and specified. It is made global and economised by a centre, the city. The city's *Scape* frames the *Land* in a resolution and dimensionality that is as precise as possible. The role of the city extends in space and time. It is devouring the countryside, which it resides next to, and makes it its hinterland.²¹⁵ The periphery becomes flattened and grounded.²¹⁶ It is made a simple and plain *Flat Land*.

This attempt is driven by a sun ego that aims for one truth and thereby uniformity.²¹⁷ A truth that covers the rich beauty of multiplicities under planed grounds.²¹⁸ The global desert covers over the local. The entailed simplification is made possible by the modern distinction between objects and subjects.

However, we have never been modern.²¹⁹ Bruno Latour proposes to prepare a common ground on which everything can be founded. A fiction that shall allow for a collective and objective

211 "Every religion, it was said, comes from the feeling of being overwhelmed humans have in front of nature. The gods are the intentions of the lightning, the subject who holds the thunderbolt, the power of germination, the irresistible surging of spring, the dark and cold terrifying entrails of the earth. The gods are astronomy, atmospheric phenomena, genetics, agrarian and pastoral activities, the elements. In other words, religion is physics in its nascent state, archaic. Invent the hard sciences, and you will no longer have religion." Serres, *Rome*, 176.

212 See Bühlmann, 'Arché, Arcanum, and Articulation'.

213 See Serres, *The Five Senses*, 236.

214 See *Etymology Dictionary*, s.v., 'Rustic'; and *Etymology Dictionary*, s.v., 'Rural'.

215 "Koolhaas describes the 'hinterland' as 'an arena for genetic experimentation, industrialised nostalgia, new patterns of seasonal migration, digital informers, flex-farming, and species homogenisation'" Taylor-Foster, 'Rem, Redacted'.

216 Antoine Picon dares a dystopian look back. "The traveler arriving at Newark airport—provided he is seated on the right side of the plane and the weather is good—notices the towers of Manhattan. In the late afternoon, as the sun reflects on the glass walls and reddens the brick partitions, it appears like a magic city made of crystal and porcelain, a city filigreed like a work of art, a transposition of the celestial Jerusalem dreamt up by the painters of the Middle Ages. But in front sprawls a sort of hell, or purgatory: cranes, immense bridges spanning platforms lined with containers, refineries and factories between which are creeping swamps, everything in poor condition and rusted out, as though irreparably polluted yet somehow endowed with a strange beauty. In their brutality, these 'steps' to Manhattan create a landscape, a somewhat frightful landscape, but much more real in its crudeness than the distant sparkling of the Empire State and Chrysler Buildings." Picon, 'Anxious Landscapes', 65.

217 "To the Platonic ideology of a single sun-struck truth, Immanuel Kant added an image of such a high degree of narcissism, that it should have worried the wise. Brightly positioned on those days at the center of the world, the sun became, in his philosophy, the very subject of knowledge: the Sun-Ego, in a word." Serres, 'Information and Thinking', 18.

218 "How have divine landscapes, the saintly mountain and the sea with the innumerable smiles of the gods, how have they been transformed into sewage farms or horrifying dumping grounds for corpses? By scattering material and sensory garbage, we are covering or erasing the world's beauty and reducing the luxurious proliferation of its multiplicities to the desert and solar uniformity of our laws alone." Serres, *The Natural Contract*, 24.

219 "By all means, they seem to say, let us not mix up knowledge, interest, justice and power. Let us not mix up heaven and earth, the global stage and the local scene, the human and the nonhuman. 'But these imbroglios do the mixing,' you'll say, 'they weave our world together!' 'Act as if they didn't exist,' the analysts reply. They have cut the Gordian knot with a well-honed sword. The shaft is broken: on the left, they have put knowledge of things; on the right, power and human politics." Latour, *We Have Never Been Modern*, 3.

understanding of the underlying. The *Land* is laid out as a reality that shall be taken as common. It is based on a social body that gathers and creates a continuous discourse in order to form a subject which is able to deal with the thing and thereupon define the object.²²⁰

Latour's 'AIME'²²¹ project and 'The Parliament of Things'²²² both have at their core Serres' ideas of the quasi-object. However, for Latour merely the multiple of the social shall circle around existing things and their entailed possibilities.²²³ This activity he aims to administer. He focuses on the construction of a novel institution that allows a social gathering in order to manage the underlying complexity of multiple views and concerns,²²⁴ though thereby he neglects the object and its becoming. He moves between a realism and constructivism and sets up another totalitarian *Scap*e. The object is not architectonic—a proposal which I will make following Serres quasi-object in the chapter *City Scapes*—but merely a collective construction of a common world²²⁵ that is composed, debated, purified, agreed on, and proven in a parliament which again constitutes another city-centric tribunal.

Nature becomes dominated by the construction of a rationality. Rationalistic world views take the Earth as the centre of the universe. We read the order of the universe from our perspective—though mistakenly understood as the common point of view—in order to define ourselves.

Thereby the geocentric model²²⁶ is merely able to deal with niches. We can see this with topics such as ecology, sustainability, and the Anthropozoic era: a misconduct, since this is thought without nature as our partner.²²⁷ The global sense emerges without nature and keeps spreading in *Inert States*.²²⁸

220 "What would critique do if it could be associated with more, not with less, with multiplication, not subtraction." Latour, 'Why Has Critique Run out of Steam?', 248.

221 For further details, see Latour, 'AIME Project: An Inquiry Into the Modes of Existence'.

222 "The Parliament of Things is a speculative research. Law should not be centered around Men, but around Life. We are just one party, among all animals, plants and Things." See 'Parliament of Things', and Latour, *Politics of Nature*.

223 Latour seemingly proposes a kind of interruption of Nancy's interrupted myth.

224 "A thing is, in one sense, an object out there and, in another sense, an issue very much in there, at any rate, a gathering. To use the term I introduced earlier now more precisely, the same word thing designates matters of fact and matters of concern." Latour, 'Why Has Critique Run out of Steam?', 233.

225 "A common world is not something we come to recognize, as though it had always been here (and we had not until now noticed it). A common world, if there is going to be one, is something we will have to build, tooth and nail, together." Latour, 'Whose Cosmos, Which Cosmopolitics? Comments on the Peace Terms of Ulrich Beck', 455.

226 "In astronomy, the geocentric model (also known as geocentrism, or specifically the Ptolemaic system) is a superseded description of the Universe with Earth at the centre. Under the geocentric model, the Sun, Moon, stars, and planets all orbited Earth." See *Wikipedia*, s.v., 'Geocentric Model'.

227 "When our tools were local, and kept us working on only our own hayfield, we weren't constantly informed of the Earth's global changes. A little harness was enough for us, so that along with a few neighbors we could just manage to draw or tract a narrow plow. The only interesting information had to do with the plot of ground. In those days, outside the field and the village we knew only of the desert and of vague peoples. Our social contract comprehended but a few objects, drawn by a modest number of members. There were always more mouths than bread, and therefore more words than things, more politics or sociology than objects of consumption. There was no nature, in the global sense of the word; the so-called modern social contract is unaware of nature, since for it the collectivity lives only in its history, and that history lives nowhere." Serres, *The Natural Contract*, 109.

228 Christophe Girod also calls for a revolution, a cultural and empirical one. "A cultural revolution of nature is now necessary: deep ecology – understood as the fabrication of 'real' nature at the polar opposite of 'real' civilization – could replace history at a stroke, fulfilling a redeeming role as an empirically driven biological 'restart' of the planet." Girod, *The Course of Landscape Architecture*, 337.

THE INERT STATES

The *Land Scapes* enable inert and immobile *States*.²²⁹ They apply within the limits of the framed *Land* and allow for a reality to be worked, dwelled, performed, and moved in by means of a stable framework. These *Inert States* steer and support the everyday life of the *Land*'s inhabitants.

PROGRAMS, PERFORM, GROUND, WORK

The *Inert States* maintain a balance in a procedural manner alongside programs that can be used and protocols that can be followed. The procedures are made up of a finite number of steps. They allow mechanical work on the underlying, already digitised, ground.

The *Inert States* operate on numbers. Aligned in a row, they can be operated alongside calculators that allow for various configurations and still guarantee the desired results. One can perform with and within those. However, they provide an objective stance through their rigour and capacity for reproduction.

The *Inert States* hard-wire problems with their corresponding solutions by means of comprehensible algorithmic calculation procedures.²³⁰ They work the *Land* positively. This provides results and solutions to priorly defined problems.

The *Inert States* find their performative use in nearly any domain. From cooking recipes to the organisation and control of any system,²³¹ such as the urban²³² or the digital reality itself.²³³ However, they presuppose a global intellect.

FIX, OBJECT, SUBJECT, INSTITUTIONS

Institutionalised reference systems guide processes of individualisation alongside an objective frame of representation. The *Inert States* allow us to keep order and identities in sync with space and time, and thereby our own position on Earth in balance. They allow us to move on Earth in a safe manner. We turn our heads towards the sky and try to objectively reflect the ongoing cosmic activities in earthly dispositions, arrangements, instructions, educations,

229 "'States' entails and relates to a series of meanings such as statements, circumstances, station, standing, order, rank, set, positions, conditions, estate, fix, posture, situate, status, power, nation, knowledge, idleness, assurance, reality and safety." See *Etymology Dictionary*, s.v., 'State', and Merriam Webster, s.v., 'State'.

230 "In computer programming, to 'code' (in certain languages) refers to the formulation of instructions, the running of protocols, and the setting up of algorithms to perform work." Colman et al., *Ethics of Coding: A Report on the Algorithmic Condition [EoC]*, 26.

231 "An algorithm is a finite set of instructive steps that can be followed mechanically, without comprehension, and that is used to organise, calculate, control, shape, and sometimes predict outcomes, applied across various fields." Colman et al., *Ibid.*, 8.

232 "Infrastructure space is a form, but not like a building is a form; it is an updating platform unfolding in time to handle new circumstances, encoding the relationships between buildings, or dictating logistics. There are object forms like buildings and active forms like bits of code in the software that organizes building. Information resides in the, often undeclared, activities of this software – the protocols, routines, schedules, and choices it manifests in space." Easterling, *Extrastatecraft*, 14.

233 "... Big Data-type analyses lay claim to a form of objectivity – not a critical form of objectivity based on the knowledge of the circumstances, the context and the causes of phenomena and hence on an acknowledgment of their contingent nature, but a mechanical objectivity, based on the one hand on the automation of data processing systems and a disregard of subjectivity (selectiveness, specific viewpoints, perception, interpretation) and, on the other, the apparent independence of algorithmic modelling vis-à-vis politically instituted or socially experienced categorisations." Rouvroy, 'Of Data and Men'. *Fundamental Rights and Freedoms in a World of Big Data.*, 33.

234 We can see this with initiatives such as 'Green Is Not a Colour' which provides an environmental education in order to understand the relationship between economy, technology, society, and nature. It formulates guidelines which allow the reader to become and do better. The Lightning Lab, 'Green Is Not a Colour'.

and institutions.²³⁴ These fundamental circumstances form the core of our reality, from analytical sciences and capitalism to engineering and industrialisation.

Being needs to be sought in objectiveness, states Heidegger. Its representation needs to be fixed globally. If it cannot be described, represented, and understood in this manner it simply does not exist. That is true for both nature and history.²³⁵

The modern age introduced not merely objectivism and subjectivism but also the non-individual. Man became a subject. Thereby the objectivity is set by abstract universals. The truth of this universal grounding guarantees the truth in each particular case as well. This framework provides certainty and safety in our relationship to objects.²³⁶ The persistence of the world-picture, including sense, reason, and values, is grounded upon this *State*.²³⁷

VALUES, METRICS, RIGOROUS, TRUTH, REASON, STATEMENTS, RESULTS, PRODUCTS

The *Inert States* provide the tools to administer. They play the henchman for idle mates. Thereby values—sets of objects—become divided, framed, related, ordered, and aligned on a global sensible plane. The plane is pre-set and able to make up, access, and understand a distinct reality. It forms a predefined reference system with specific units for measurements. The metric allows us to objectively frame and value the given. It makes up the ground which supports reason; it just has to be used rigorously. Based on that, 'magniloquent' statements can proclaim the truth. Within the *Land Scape* of food, things become valued in a series of metabolisms by the unit of energy, calories. It becomes a parameter,²³⁸ that in each step of the value chain allows us to quantify, understand, and control the ongoing translations up to the sum total, the product as its result. These valuations reach a global scale.²³⁹ Climate science is based on the gathering of global data, data analysis and simulation models. It directly transforms the gathered measures and information resources into a global knowledge. It proclaims truth. This is a shortcut that applies not only to the topic of climate and sustainability, but to the sciences in general.

235 "Nature and history become the objects of a representing that explains. Such representing counts on nature and takes account of history. Only that which becomes object in this way is considered to be in being. We first arrive at science as research when the Being of whatever is, is sought in such objectiveness." Heidegger, *The Question Concerning Technology, and Other Essays*, 127.

236 "This objectifying of whatever is, is accomplished in a setting before, a representing, that aims at bringing each particular being before it in such a way that man who calculates can be sure, and that means be certain, of that being. We first arrive at science as research when and only when truth has been transformed into the certainty of representation." Heidegger, *ibid*, 127.

237 "However, when man becomes the primary and only real subject, that means: Man becomes that being upon which all that is, is grounded as regards the manner of its Being and its truth. Man becomes the relational center of that which is as such. But this is possible only when the comprehension of what is as a whole changes." Heidegger, *ibid*, 128.

238 "A parameter (from the Ancient Greek παρά, *para*: 'beside'; 'subsidiary'; and μέτρον, *metron*: 'measure'), generally, is any characteristic that can help in defining or classifying a particular system (meaning an event, project, object, situation, etc.)." See *Wikipedia*, s.v., 'Parameter'.

239 "Building the weather and climate knowledge infrastructures spread a specific way of making global knowledge – one whose techniques, values, and implications now extend not only throughout the sciences but far beyond." Edwards, *A Vast Machine*, xix.

240 "Ongoing activity" is the rendering of Betrieb, which is difficult to translate adequately. It means the act of driving on, or industry, activity, as well as undertaking, pursuit, business. It can also mean management, or workshop or factory." See Heidegger, *The Question Concerning Technology, and Other Essays*, 124.

ACTIVITIES, SPACE-TIME, SAFETY, CONTROL, STATES, TRAGIC

The ongoing research activities in the sciences make the subject a researcher that works in the name of the objective by following the mechanisms of a scientific machinery.²⁴⁰ They detach the subject from traditions and embed it in *Inert States*. Tradition aims to transport local activities. Merely loose lines connect individual points. The points need to be constantly reconnected. Thus it is incumbent on subjects to pass the requisite know-how from generation to generation. Thereby the ground is with the subject. It needs to be prepared and cultivated, over and over again. It is never common, never there.

In contrast, research activities are like cooking with given recipes. One has to follow a given line in space-time. The making of sense, which formulates this line, is prior to the activity. Research administers everything in space-time. Things are set in the right place.²⁴¹ A fixed place guarantees stability and continuation. One always knows about the next step. A linear handrail guarantees safety.²⁴² The activities are grounded and reasoned and thereby allow for meaningful operations and consistent combinatorics.

The preliminary linearity of a methodology, its capacity to be improved and expanded, requires a worker that drives the advancement alongside the line's inherent vector in order to keep the line itself alive by the very act of following it.²⁴³ Results are thereby not to be seen as accumulated in order to expand the sphere of science but are themselves a mere necessity to guarantee stability for the continuation of the methodology implied in the machinery of science.

Institutions allow for this continuation. They are expressions of the orchestration of the multitude kept in global balance. Therein object and subject become fixed. The subject defines the object. The stability of the object necessitates the rigidity and control of the institution. This is a rigorous way to establish truth.²⁴⁴

The *Land* becomes an epistemology, as the study of how to draw lines. It makes the subject think, invent, and divide *Land* within the primarily set limits of the objective *Scapes*.²⁴⁵

241 "Research has disposal over anything that is when it can either calculate it in its future course in advance or verify a calculation about it as past. Nature, in being calculated in advance, and history, in being historiographically verified as past, become, as it were, 'set in place' [gestellt]." Heidegger, *ibid*, 126–27.

242 Francis Fukuyama proposes in *The End of History and the Last Man* that alongside the modern natural science, capitalism, and the universalisation of liberal democracy, we would reach the end of struggles between ideologies and thereby that of history. "That is why modern man is the last man: he has been jaded by the experience of history, and disabused of the possibility of direct experience of values." The resulting global framework would provide equality and liberty for future local activities and events. "The last man at the end of history knows better than to risk his life for a cause, because he recognizes that history was full of pointless battles in which men fought over whether they should be Christian or Muslim, Protestant or Catholic, German or French." See Fukuyama, *The End of History and the Last Man*, 306, 307.

243 "More and more the methodology adapts itself to the possibilities of procedure opened up through itself. This having-to-adapt-itself to its own results as the ways and means of an advancing methodology is the essence of research's character as ongoing activity. And it is that character that is the intrinsic basis for the necessity of the institutional nature of research." Heidegger, *The Question Concerning Technology, and Other Essays*, 124.

244 "By this is to be understood first of all the phenomenon that a science today, whether physical or humanistic, attains to the respect due a science only when it has become capable of being institutionalized. However, research is not ongoing activity because its work is accomplished in institutions, but rather institutions are necessary because science, intrinsically as research, has the character of ongoing activity. The methodology through which individual object-spheres are conquered does not simply amass results. Rather, with the help of its results it adapts [richtet sich ... ein] itself for a new procedure. Within the complex of machinery that is necessary to physics in order to carry out the smashing of the atom lies hidden the whole of physics up to now." *ibid*.

Following Michel Serres, this objective consciousness allows for a continuous reproduction of tinned States. Meanwhile this spreads out and finds expression in all domains of life.²⁴⁶ The *Land Scapes* of sustainability and its *Inert States* merely seem a pale and helpless life-prolonging approach that situates itself somewhere between tame marketing²⁴⁷ and tragic activism.²⁴⁸ Contemporary one-liners of the Anthropocene content-wise sound as follows: "Consume as little as possible."²⁴⁹ Such one-dimensional imperatives frame and sustain the unidirectional relation between man and nature alongside the primacy of the city over the rural. So far, this relationship is solely treated on the level of resources and energy translations. It is about maintenance and optimisation and hence about saving and the conservation of life. A communion between two partners is rarely thought of, yet.

REMARKS

Land Scapes are not merely the countryside, a piece of land, nor certainly nature itself. *Land Scapes* are beautifully painted images of the real which make up a reality themselves. They describe views of a world that are set up in advance by *Horizontal Scapes*. Though this is not meant in a romantic sense of a picturesque imagination and symbolisation but as attempts of a representation of the world in a sheer rationalistic manner. That which can be known is made up in the way it is fashioned by the approach adopted to frame it as such.

Horizontal Scapes depict views of scenery. There are many of them. Together they provide us with an understanding of the world, sharply and precisely drawn on an analytical canvas. Constructed views that represent. The specific and local becomes globally framed. It becomes generalised and classified, predicated and objectified, grounded and naturalised, sensible and empirical. It becomes *Flat Land*.

Land Scapes aim to fully understand that which they cannot. They are not yet thought of in a universal manner. This is becoming crucial, since the attempts to frame the real get even more complicated by the upcoming vast *Computational Grounds*. However, we affirm the accompanying *Informational Thinking* since it will allow for an inversion. A turn towards *City Scapes* which will bring back contingency and the political, not merely into the household of food.²⁵⁰

245 "I think if and only if I am speaking in my own name. Knowing demands that one forget oneself. Thought cares nothing for these memories. Science loses consciousness in the consciousness of the scholar-subject and, through this loss, the latter thinks and invents," Serres, *The Five Senses*, 338.

246 "When the scientific city grows, it increasingly resembles the city itself," Serres, *Statues*, 8.

247 "How can the city, with all its mechanisms of consumption – its devouring of energy, its insatiable demand for food – ever be ecological?" See Mostafavi, "Why Ecological Urbanism? Why Now?"

248 See "Fridays for Future".

249 "You have stolen my dreams and my childhood with your empty words. And yet I'm one of the lucky ones. People are suffering. People are dying. Entire ecosystems are collapsing. We are in the beginning of a mass extinction, and all you can talk about is money and fairy tales of eternal economic growth. How dare you!" See National Public Radio, "Transcript: Greta Thunberg's Speech At The U.N. Climate Action Summit".

250 "Let the multiple graze in peace; tragedy vanishes. And consequently, history is erased," Serres, *Rome*, 233.

INFORMATION TECHNOLOGIES, COMPUTER POWER

Information technologies comprise computer, communication, network, and information systems that have the capacity for operations such as to store, retrieve, transmit, and manipulate data and information in a procedural manner.²⁵¹

Alan Turing declared computers as automatic machines that follow a mechanism able to compute logical operations upon sequences of symbols and numbers.²⁵² This statement accounts for computers merely as machines.²⁵³ It grants them an increasing power as they seem to run positively, as generators of all kinds, on a background that is entropic. This assumption is fuelled by 'Moore's Law',²⁵⁴ which claimed exponential growth for processing power in the 1970s and has actually proven to be true, as well as by decadent and heroic demonstrations of the present calculation power such as by IBM Watson.²⁵⁵ Hypothetically, the increasing computational power should enable a technological singularity.²⁵⁶ This either leads to a positivism, which we can see with institutions such as the MIT Media Lab,²⁵⁷ or to one of various modes of critical contemplation.²⁵⁸

COMPUTATIONAL NETWORKS, DATA STREAMS

On the other hand, entire networks of computers and mobile devices turn from mere 'computing machinery' towards a generic infrastructure²⁵⁹ of a global network.²⁶⁰ They provide the connectivity²⁶¹ for the World Wide Web, a standard protocol of communication that accommodates hundreds of billions of documents, or

251 "... the technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data." See *Merriam Webster*, s.v., 'Information Technology'.

252 For further details, see Turing, 'On Computable Numbers'.

253 "If an a-machine prints two kinds of symbols, of which the first kind (called figures) consists entirely of 0 and 1 (the others being called symbols of the second kind), then the machine will be called a computing machine." Turing, *ibid*.

254 See Moore, 'Cramming More Components Onto Integrated Circuits'.

255 See IBM, 'IBM Watson'.

256 See *Wikipedia*, s.v., 'Technological Singularity'.

257 "The combined forces of technology and human nature will ultimately take a stronger hand in plurality than any laws Congress can invent." Negroponte, *Being Digital*, 58.

258 "Computers seem to be as universal as architecture, at least as long as they are thought of as abstract machines. But if, due to an improper notion of abstraction, they are perceived as mere-albeit-fast-machines, they are frightening, having by now become superfast: ...just listen, e.g., to Paul Virilio in his *War and Cinema* (1989), *Speed and Politics* (1986), or *The Information Bomb* (2000), and you cannot help but get scared. Or to Jean Baudrillard in *Carnival and Cannibal*, or the *Play of Global Antagonisms* (2010), or ask *Why Hasn't Everything Already Disappeared?* (2009). Why not, indeed? Trying to slow them down? Not a chance." Hovestadt, 'Cultivating the Generic: A Mathematically Inspired Pathway for Architects', 10.

259 "When referring to or using the concept of networks itself, and also when speaking about networks, most people think of the geometrico-graphical aspects of them. In other words, the static aspects of their topology dominate, literally, their 'layout', or their transduction or transport capabilities and capacities. While it is true that 'being connected' means that I can send something from point A to point B, it is equally true that it is not the whole story. Thinking in this way about networks we immediately find ourselves in the domain of logistics, trying to optimize time, energy, material, needed for setting them up and throughput capacity. The necessity for a flexible routing between arbitrary points A and B usually lead to a cell-structure of hubs and terminals, which we can observe for air traffic networks, mobile communication networks or the hardware of the internet. As interesting and powerful as these structures are, they are highly deterministic machines for organizing flows. As a matter of fact, they have to work deterministic because they are essential infrastructural elements for our contemporary life form. Nevertheless, there is a completely different type of networks showing drastically different phenomena, namely associative capacities and structural learning." Wassermann, 'SOMcity: Networks, Probability, the City, and Its Context', 198–99.

social networking services²⁶² that connect half the world's population. This makes up for a completely new basic order²⁶³ and allows for new movements within abstract and symbolic spaces.²⁶⁴

Information technologies and the abstract thinking implicit in them have not only changed the way we are able to deal with data or communicate with each other, but have made possible applications such as photovoltaic cells, which in turn have enabled access to a novel wealth of abundant energy. This capacity marks a completely different starting point for any kind of thinking about our relationship to nature.²⁶⁵

This change is supported by the plenty of givens that we can find in the current world of data. We are exposed to a world of an infinity of lists.²⁶⁶ Big Data is based on extremely large data sets of structured and unstructured data.²⁶⁷ These stocks of givens comprise collections of a multiplicity of local data that make up computational grounds. They are made up of anything that is sensible and recordable—discretised times as givens²⁶⁸—and increasingly become continuous streams.²⁶⁹

In the world of food, these novel grounds potentially comprise any data alongside what we have so far called the value chain. From information stored in DNA, environmental data derived from satellite images, analytical data with numerous dimensions that are related to the activity of farming, technical spectral data of

260 Benjamin Bratton's idea of the stack combines hardware, software, and network into a stack of planetary-scale computation. "Unlike modern political geography, which divided up horizontal maps, Stack geography also vertically layers spaces on top of one another. Instead of surveying all the various forms of planetary-scaled computation – cloud computing, smart cities, ubiquitous computing, massive addressing systems, next-generation interfaces, nonhuman users, and so on—as different genres or species of computing, each off on its own, this model locates them on layers of a consolidated metaplatform, an accidental megastructure. We observe these bottom-up from the Earth layer up to the User layer. Energy drawn from planetary resources at the Earth layer drives Cloud computation, and its global platforms organize new political topologies. The City layer is animated by those Cloud platforms from within, organizing things, events, and relations at the Address layer into Interfacial regimes that provide a window into the whole system for Users. Together these sectional layers comprise the larger apparatus: The Stack." Bratton, *The Stack*, 375.

261 "Connectivity had become the defining characteristic of our twenty-first-century urban condition." Mitchell, *Me++*, 11.

262 "Interactive computer networks are growing exponentially, creating new forms and channels of communication, shaping life and being shaped by life at the same time." Castells, *The Rise of the Network Society*, 2.

263 "... computers were no longer understood as 'symbolic machines' but increasingly as an infrastructure for applications, called the 'global network'. Mobile computing, services, and social networks emerged, combining toward a new basic order." Hovestadt, 'Cultivating the Generic: A Mathematically Inspired Pathway for Architects', 14.

264 This allows for a re-spatialisation on a different level of abstraction. "In terms of general spatial feelings, it is characteristic of the third wave of globalization that it de-spatializes the real globe, replacing the curved earth with an almost extensionless point, or a network of intersection points and lines that amount to nothing other than connections between two computers any given distance apart." Sloterdijk, *In the World Interior of Capital*, 13.

265 "... energy isn't a resource, energy is clean, and energy isn't scarce, in fact the opposite, it is abundant! Because now, with information technology, energy has become what we might call an 'intellectual wealth' that can be captured, stored, distributed—"cycled", so to speak—by electronic coding. And as there are no limits in principle to how much 'energy cycling' is possible, energy itself loses the limitations we're used to associate with it." Hovestadt, Bühlmann, and Michael, *A Genius Planet – Energy: From Scarcity to Abundance: A Radical Pathway*, 6.

266 "In conclusion, the search for lists was a most exciting experience not so much for what we managed to include in this volume as for all those things that had to be left out. What I mean to say, in other words, is that this a book that cannot but end with an etcetera." Eco, *The Infinity of Lists*, 7. Doug Laney, Vice President and Distinguished Analyst of Gartner's Data and Analytics, defines Big Data in terms of the '3Vs' of volume, velocity, and variety. "Big data is high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation." Gartner, 'Big Data'.

268 "This notion of data is opposed to its classical notion, where data is produced mainly as the result of designed experiments to support specific hypothetical models. These new data streams are the raw materials for further investigations and are being emitted from one activity and being used for another activity." Moosavi, 'Pre-Specific Modeling', 19–20.

269 "In many recent applications, data may take the form of continuous data streams, rather than finite stored datasets." Babu and Widom, 'Continuous Queries over Data Streams', 109.