

# I A SCHEME FOR A FANTASTIC GENEALOGY OF THE ARTICULABLE LUDGER HOVESTADT

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In the first volume of this series I introduced a ‘fantastic genealogy of the printable’: today we print not just written or drawn material, today we print all things that are, in a machinic and analytical way, depictable. And of course, every new abstraction of the technics of writing—and we understand printing as just such an abstraction—engenders a new kind of language. Therefore we shall here, in a next step, attempt to raise the question of the articulable on a new plateau. That’s no easy job, of course. And I am far from pretending that I have fully understood it, or that I’m able to embrace it in its totality. I am an architect and computer scientist who chafes against the limits of his disciplines. Nevertheless,

a promising body of thinking is shaping up and this is the second part of its presentation. The first one, *Towards a Fantastic Genealogy of the Articulable*,<sup>1</sup> served to prepare the ground for this second one now, entitled *A Scheme for a Fantastic Genealogy of the Articulable*.

A first draft of this text originated two years ago, and as I now go over it and complete it, I cannot help but realize that it is taxing: it comes as an incredibly large gesture —something I still treasure, and so often and acutely miss in the texts of others—, but at the same time it is, for my own taste today, too impulsive, too activist and too engaged. Finding the right balance, though, is demanding: not

<sup>1</sup> Vera Bühlmann and Ludger Hovestadt, eds., *Domesticating Symbols, Metalithikum II* (Vienna: ambra, 2014).

to be aloof and neutral, but neither to come across as over-committed and agitated. *Stirred* might perhaps be the word. Stirred up by the beauty of contemporary forms of thinking, by the terror of their technical might and by the abysses of their thoughtless exaltations and damnations. How do you take a position in the technical performance of computers without becoming part of a technocratic game that accelerates at an alarming rate? Hence my focus on the intellect, hence also my impatience with the intelligible, and at the same time my avoidance of clearly defined problems, but above all my rejection of concrete solutions and conclusions. It is, then, an intellectual exercise. But in spite of these reservations about

the text, I have decided to make only minimal modifications. After two years of involvement with it, there are now mainly compositional inconsistencies that jump out at me, as there forever will be. If you juggle a bunch of balls in the air, then every so often you will drop one. But, short of restarting the game, it's difficult to pick up and reintegrate the drop-outs. So let us consider this text an exercise, a workout: live and evolving, rather than serene and final.

#### I A LOVE AFFAIR

Let's get stuck in, right in the middle. On the one hand, there are today's institutional infrastructures, the dependabilities, availabilities, reassurances, stabilities, *references* of the 'second nature' described in Part I. We are used to them, in the form of technical infrastructures, cables, pylons, pumps, pipes, tanks, machines, sensors, displays, actuators. And we know them as standardized global media-izations, embedded in the schemata of formats like news, photography, telephony, music, cinematography, teaching programs, cleaning programs, foodstuffs, control systems, research programs, production schemes, politics, jurisdiction... —in fact in all those things on which we can depend. With these, we described technology as *deceleration*. On the other hand, there are things that are open, that unexpectedly burst into being, that surprise. Things that we may bring about through humor, know-how, affection,

concentration. Things that never were, and things that always have been, but that suddenly appear in a new light. An affair: possible any time, anywhere; possibly right here, right now. Beauty, fascination, love, elegance. Out of the blue. The *immanence* of its possibility, by removing the tiniest part, by adding the slightest nuance, by just nudging, touching, briefly arresting it: a bated breath, merely. Perhaps. These immanences throw wide open the reference system, give birth to new things. Create new references, sometime...

Things around us are, on the one hand, *referenced*, secured. On the other hand, they are *indexed*, open to any new reference. Our second natures are endowed with *liveliness* and animated within the secured schemata. As human beings we can be *ingenious* by indexing and cultivating these natures.

Let's pick up from our discussion, in Part I, of Dedekind, his cut, and the notion of continuity, and turn now to the mathematician Andrei Andreyevich Markov.<sup>2</sup> In 1913 he grabbed the first 20,000 characters of *Eugene Onegin*, Alexander Pushkin's novel in verse, and mechanically counted off the alternations of vowels and consonants. Imagine: simply counts off the characters of this famous Russian poem, mechanically puts these numbers in relation to each other, pulls up a probabilistic structure, and in doing so is able to show that there is no need to analyze a text, or to fully comprehend it, in order to synthesize from it the next characters, the most obvious next steps in Pushkin's vein, for any given position in the text. It means there is no need to have a precise notion of a text in order to find your way around it. For Markov, the spirit of the text lies not with the letters, and not within the relations or *references*. It resides in the *immanences*. And with his schematic indexing system, he demonstrates for the first time that it is possible to operate with immanences. All we need is a fragment, a hint of an idea; and a system made of indexes begins to gleam. Abstraction from analysis and synthesis. That's Markov. Fabulous.

And by now it has become commonplace. Any blurred technical picture,<sup>3</sup> any phone call beset by noise interference: we recognize the person, recall the mood, hear the intonation. It does not take many fragments of our analytical reference systems for situations to become rich. This is a challenge to any supposedly intuitive immediacy, to analytical care, to the scientific method, to enthusiasts of analogue hi-fi recordings, even to statistics: they have all been relegated to the status of trivial functionality. Flushed out. Analytics cannot succeed where Markov does. Not through care, not through orderliness, not through hygiene.

<sup>2</sup> Philipp von Hilgers and Wladimir Velminski, ed., *Andrej A. Markov – Berechenbare Künste. Mathematik, Poesie, Moderne* (Berlin: Diaphanes, 2007).

<sup>3</sup> Vilém Flusser, *Into the Universe of Technical Images* (Minneapolis: University of Minnesota Press, 2011 [1985]).

Nor through real or metaphorical psycho-technology or bio-technology. Those are but lesser or higher degrees of complications of the trivial. Let's look at an example to demonstrate the confusion Markov ought to create. This one from medicine: certain diseases can be diagnosed by their symptoms. That's how we diagnosed and treated ailments in the Middle Ages. Others are predictable through stochastics. That's how we've identified them since the modern age, and fought them with hygiene, or controlled them through vaccination. And then there are diseases that defy these methods, that are unpredictable, and therefore beyond hygiene and control. Yet they exist, such as cancer. Markov, we assume, ought to be able to deal with them, because he no longer tries to understand Pushkin's poem, and correspondingly desists from any attempt at describing what cancer is, which is precisely what makes it possible for him to handle it—by 'diagnosing' it based on attributed 'predictions'. That's putting it maybe a bit imprecisely. More adequate would be to speak in terms of a coexistence with cancer, as something that actually can't be 'named' in a definitive way: it would be a case of living with cancer, in order to avoid it.

Science fiction? Not really. This is exactly how Google's PageRank algorithm works. It meets the fragment that is our search term with an ordered list of useful documents. No analysis, no comprehension on Google's part: just near-infinite lists, indexes, and probabilities. It is us users who, in our coexistence with the medium, set the links, the frequencies, the probabilities. Google, just as Markov, doesn't care one bit about the why or how. No settlement on any particular set of assumptions is required by the Markov way of proceeding. And it is because of this that its 'indexical system' is so fantastic: not in our wildest dreams could we have imagined anything so multifarious, just 20 years ago: adaptable, fast, stimulating; movement within movements, an intellectual propellant; intentionalities... it's liberating because it's ungraspable. Not a machine. Not stochastics, not hygiene. Not multitude, but rather *'potentude'*.

Therefore we had better examine, alongside oft-misinterpreted Deleuze, the conditionalities for the faculties of reason that are at work within the differences.<sup>4</sup> In contrast to Deleuze, however, we want to reflect on ways in which we might familiarize ourselves with such a notion of reason, how to 'manage' such wealth; how to economize those riches, which Deleuze still tends to naturalize as abilities.

Does that sound adventurous? We have been used to it for a long time! For more than 100 years Boole, Dedekind, Peirce, Wittgenstein, Turing, Gödel, Markov, and then Foucault, Deleuze and Guattari, have been playing within this orthogonality.

4 Gilles Deleuze, *Difference and Repetition*, translated by Paul Patton (London: Continuum, 1994 [1968]).

Today, on the new stage of intentional quantities, we may—in the metaphor of running, channelled, and retained water—let the water come. Because we don't have to hold on to it in one particular way, but are able, on this new orthogonal stage, to hold it any way we like. Because computers are not machines; or rather, in keeping with Michel Serres,<sup>5</sup> a computer is not an apparatus, but an abstract apparatus. We are no longer being talked to via channel systems, addressed by some nature, some machine, some bureaucracy, some technocracy; we now place these as algebraic bodies orthogonally on stage, and simply let them do the talking. Now the general apparatus are speaking; the processors are able to decelerate applicatively, analytically, vividly that which is being attributed to them. We assemble them on stage, appreciatively. This is what we shall call 'articulating'. In this interplay—electro-magnetic, quantum-mechanical, for example—we 'pump' water, energies, currents, data, telephone calls; and they no longer run off, instead they congregate, concentrate, narrate, crack jokes, turn cunning and perfidious, get excited, tense and fall in love, they have affairs...as long as we appreciate them.

To illustrate, we can draw a simple, functional image of an inverted channel system: the quantum-mechanical effects of a solar tree conduct electro-magnetic effects—electrical current—through a cable to the sea. There, now once again in way we can readily visualize, a pump presses water through a membrane to desalinate it, and a pipe then leads the desalinated water back to the solar tree. Thus the one solar tree delivers enough water for twenty natural trees, simply because we are able to articulate it, and because we appreciate having water for our trees in the desert, for example. Nothing, in this staging, is used up, and very little is used. The scenario is pure intellect. But if we wanted to express this in physically descriptive (rather than physically articulatory) terms, something or other would forever have to be held up, channelled, consumed. In the world of our intuitive expectations, water doesn't just 'arrive' like that: water—in fact, everything—always runs out. A purely intellectual scenario, by contrast, is abstract, and so we can relax. In valuative terms we inspect from the outside the many things that talk intuitively to each other. There are many of them. We can hear them talk, noisily: they are all intent upon 'withholding'. No longer can we take analyses seriously, but *populations* of analyses. Not models, but that which is model-like in kind. Not generalizations, but *abstractions*. No longer the functions, causes and signs. In our linguistic handling of symbols of code, we are able to create stabilities on the level of symmetries and invariances, of trusting in symbolic algebra in lieu of arithmetics and analytical geometry; in articulations instead of linear, structural or post-structural constructs or historical accounts. We may become operational from within the universal flow of a generic richness.

5 Michel Serres, *Verteilung, Hermes IV* (Berlin: Merve, 1995 [1977]).

Here we propose to delve into a closer examination of the invariances and symmetries of our bodies of thinking, and to understand the inversion of those bodies, so as to acquire a notion of the ways in which they may cross-fertilize one another, and how we can move about within a cultural richness without being retentive and impervious to new things. In so doing, we hope to overcome the ravages and blockages imposed on us by the conception of cultural and technological progress. We trust in mathematics, which, literally translated, and to the surprise of many, means ‘the art of learning’. So let me, as an architect, devise a body of thinking that is at once comprehensive and beautiful. I hope you will indulge me by overlooking some imprecisions in the detail.

We know three infinities:

- the space of whole numbers,
- the space of rational numbers,
- the space of complex numbers.

We also know that there are definitions of further number spaces, and we know that the concept of the number space, and indeed of the number itself, is fairly recent. We further know that rational numbers possess the same cardinality<sup>6</sup> as natural numbers. Nevertheless, we find this trisection useful for our purposes. So let’s proceed as follows:

- whole numbers –  $x$ : numbers are brought in relation to things — they determine the body of thinking of antiquity and medieval scholasticism
- rational numbers –  $x/y$  or  $dx$ : two whole numbers are brought into functional difference — they determine the body of thinking of the modern era
- complex numbers –  $x+iy$ : two rational numbers are put into an operation — they determine the body of thinking of the present era (we cautiously suggest since 1890, although we still tend to perceive ourselves within the rational-number body of thinking)

Our assumption is not that rational numbers will replace whole ones, or complex numbers rational ones. It is rather a question of specificity.<sup>7</sup> In the rationality of the rational-number space, design takes place *before* things are realized in the whole-number space. We’re used to that. However: accordingly, in the complex-number space operation takes place prior to design in the rational-number space. In the rational think space real things are pre-specific. In the complex think space rational designs are pre-specific.

6 Georg Cantor, *Contributions to the Founding of the Theory of Transfinite Numbers* (Chicago: Open Court, 1915)  
 7 Vera Bühlmann and Martin Wiedmer, eds., *Pre-specifics. Some Comparative Investigations on Research in Art and Design* (Zurich: JRP|Ringier, 2008).

In this text, our interest turns mainly to the Third Infinity, the body of thinking in the complex-number space. We want to cultivate operation and, in doing so, treat rationality as pre-specific. The familiar differentials, functions, transformations, probabilities, eigenvectors, Möbius strips; the fascination of fractals, grammars and their nestings, non-linearities: they are all logical systems, flawless and consistent, and for this very reason incomplete.<sup>8</sup> Systems clearly delimitate what they can integrate from what they cannot. That is why we speak of bodies that we can inspect from without or from within. To look at them from within we can use logic, geometry, and arithmetic: means that for an outside inspection are unfit. But we have algebra. More precisely, we speak, in line with Peacock,<sup>9</sup> De Morgan,<sup>10</sup> Boole,<sup>11</sup> Babbage and Peirce,<sup>12</sup> of a symbolic algebra (exterior view), as clearly distinct from a logical algebra (interior view) around Frege<sup>13</sup> or Russell.<sup>14</sup> Only symbolic algebra allows us to operate with algebraic bodies before having symbolically determined them to the extent where design within this constitution, rationally and logically—that is with logical algebra, from an interior view—is possible.

Too abstract? Too complex? Actually, we experience this all the time: it has become commonplace. Only 20 generations ago, our medieval ancestors, within the rational, geometric body of thinking of natural numbers, built gigantic aqueducts to channel water to their cities. This was necessary because water, within animistic thinking, flows downward, without question. Today, in the analytical thinking of the rationalist body of thinking, we build pumps, and water flows wherever we want it to. No more aqueducts, and running water in every house: wizardry. Demonic, to the eyes of the Middle Ages. People were burnt at the stake for much less, as late as 20 generations ago, three of which I personally knew (my grandfather was born 1890). So: not long ago, really. Today we are in a situation where water does indeed flow wherever we want it to go, but it still has to come from somewhere, always: we consider it a scarce resource, and in the end it always drains away. We imagine that we use up water, and so we mean to use it sparingly. But

8 Kurt Gödel, *On formally undecidable propositions of Principia Mathematica and related systems I*, in Solomon Feferman, ed., *Kurt Gödel Collected works*, vol. I. (London: Oxford University Press, 1986 [1931]): 144-195.  
 9 George Peacock, *A Treatise on Algebra* (Cambridge: J.&J. Deighton, 1830).  
 10 Augustus De Morgan, *Formal Logic* (London: Taylor & Walton, 1847).  
 11 George Boole, *An Investigation of the Laws of Thought on Which are Founded the Mathematical Theories of Logic and Probabilities* (London: Walton & Maberly, 1854).  
 12 Charles Sanders Peirce, *On the Algebra of Logic, A Contribution to The Philosophy of Notation*, in *American Journal of Mathematics*, 3,1 (1880): 15-57.  
 13 Gottlob Frege, *Basic Laws of Arithmetic: An Exposition of the System* (Berkeley: University of California Press, 1964). The original full title in German is: *Die Grundlagen der Arithmetik. Eine logisch mathematische Untersuchung über den Begriff der Zahl* (1884).  
 14 Alfred North Whitehead and Bertrand Russell, *Principia Mathematica* (Cambridge: University Press, 1910-1913).

what if today someone were to claim that water does not come from rain, or from storing it up, but is where it is simply because we know how to express it, how to encode it? No more dearth. Water *is*, because we know how to express it. This is the magic of algebra seen from the perspective of rationality. Magic that is the same as an electric current, as mobile telephony, or the Internet. Not really abstract or complex, just from a different world. Everybody uses it. Everybody likes it. It's been with us for a good one hundred years now. We are just loath to admit that it's from a different world.

So let us differentiate:

We *argue* in the whole think space.

We *narrate* in the rational think space.

We *articulate* in the complex think space.

Also:

We move in a natural *place*,

or in a rational *space*,

or in a complex *universe*.

And:

We argue *substantively*,

we narrate *functionally*,

we articulate *valuatively*.

And:

In argumentative speech the *noun* is primary.

In narrative speech the *attribute* is primary.

In articulative speech the *verb* is primary.

Accordingly we speak of the:

epistemic locus,

diastemic space,

and choreostemic universe.

And:

Epistemically loci are being encapsulated on the stage of space.

Diastemically spaces are being encapsulated on the stage of time.

Choreostemically times are being encapsulated on the stage of values.

And the:

choice of ratios or proportions,

bundle of functions or potentials,

displacement of concentrations or intentions.

So much for now on the mutual delimitation of the various stages. To gain a better understanding of today's discursive landscape, we shall briefly compare these exhilarating vistas with the more sobering day-to-day business on the analytical stage. We turn, for example, to the notion of 'construction', for it says a lot about our self-image as architects and engineers, and the image we present to others. And the way it is worded is remarkably weak: under 'technical construction', for

example, we find in Wikipedia (August 2011, German version, translated here): "A construction, e.g. a building or a machine, is the material result of preceding constructive activity." Or: "Just as technology developed at breathtaking speed over the last 150 years, the construction process changed comparably over the same period." And: "Around 1850, construction was workshop-oriented. T. Edison, for example, is known for his intensive laboratory work, following the trial-and-error principle." As a performance, this is incredibly slow, incredibly dull. How is that possible! 'Construction in mathematics' yields a bit more: "In geometry, construction, in particular with compass and ruler, means development of the precise graphic representation of a figure based on given variables, whereby, as a rule, a restriction to the use of exclusively Euclidean tools —compass and ruler—is required." This, too, is extremely sparse, seeing that there is only so much construction you can do with a compass and ruler, and it wasn't that simple even with the Ancient Greeks. What is missing is any reference to 'understanding' or 'skill', or particularly to 'artifice' with which 'technics' and 'mechanics' are normally associated. For example, there were levers—strong physical lines—by means of which Archimedes claimed he could dislodge Earth from its axis, if only he had a fixed anchor point. Similarly, there were circular lines arranged around points in the form of strong winches and worm gears. There was a comfortable, free and easy, urban lifestyle of '*friends*' who were expected to hold their own in oratory, and, in case of a dispute, be capable of defending themselves in court. Sophists were concerned with 'persuasiveness': they were crafty persuaders, masters at applying their levers of argument to great effect, and whose art could be bought by whoever had need of it. And of course there were political, military quarrels. How do you trust words, when anything can be said and anything may be believed? Plato set up a school of dialectics to educate roaming strays in friendship by Dialogue, Eros and ideals. Homer's *Odyssey*. Aristotle's *ethos*, *pathos* and *logos*. Tragedies, comedies on the strident stages of the amphitheater... Life in those days wasn't any less rich, nor were people more stupid, nor were the personal differentiations in the world's currents any less considerable than they are today. It is a poor advisor who, like the dike watchman standing high and dry upon his levee, assesses the power of the water masses that are being channeled, the dike's construction, and takes this as the measure of all things.

History may be channeled, but our languages are rich.

Our languages provide the indexes for what we've so far learnt to articulate and treasure in our world's currents. With them, we want to learn to speak on the new stage of the Third Infinity. We don't want to build any new canals, write down history, work on our progress, or suchlike. We don't want to hold back. All that would be acting the play on the Second Infinity stage. Here it is about letting analytical persons

interact, setting indexes and working out invariances on which the many analyses—which are now the characters—may cross-fertilize one another. Hence our predilection for *abstraction*. This is why we take concepts seriously and want to challenge the engineers, because too often they say: ‘Come on, you know what I mean.’ Hence also our predilection for *populations*, taking numbers seriously—not common in the humanities—seeing that all too often we hear: ‘What does it matter, really, whether we are talking about 10 or 100.’ And in consequence, therefore, also our predilection for *operations*. It’s on their behalf that we do the staging, which to us is fascinating: based on the variety of differences and repetitions,<sup>15</sup> we may concentrate, form notions, without losing stability in the currents. From dike watchmen we turn into surfers. We want to learn how to articulate on the new stage. That’s no less than cultivating our cultural history, which from our old stage we remember as the prudent analytical assembling of potentials into ‘resources’.

So let’s take a step back in abstraction and consider what a cultural history based on an algebraic shift of concentrations would look like. We hope we have piqued your curiosity, and not made too many mistakes on the way. Let us begin our Speech Exercises in the Third Infinity, in a valuative discourse, especially about architecture.

There are precedents for using this procedure. Alfred North Whitehead,<sup>16</sup> for example, faced with an at the time largely encyclopedic mathematical interest, conceives exactly this new algebraic stage,<sup>17</sup> but later composes a Greek play with an ontic, organistic philosophy,<sup>18</sup> writing the very shadow of the Third Infinity into the First one. We may be better off emulating Michel Serres<sup>19</sup> or Jules Vuillemins.<sup>20</sup> They populate a vivid stage with encyclopedic interest and mathematical, technical curiosity, thus setting a valuable basis for a new, valuative stage.

### III A GENEALOGY OF LEARNING TO SPEAK

Let us proceed one step further into detail. Let us characterize the first stage—that of the Greek sophists—in a way that lets us build the algebraic symmetries, invariances, concentrations that are needed for the subsequent stages of this text.

15 Gilles Deleuze, *Difference and Repetition*, translated by Paul Patton (London: Continuum, 1994 [1968]).

16 Alfred North Whitehead, *Process and Reality: An Essay in Cosmology* (New York: Prentice-Hall, 1929).

17 Alfred North Whitehead, *A Treatise on Universal Algebra: With Applications* (Cambridge: University Press, 1898).

18 Alfred North Whitehead, *Process and Reality*.

19 Michel Serres, *Hermes I – IV* (Paris: Éditions de Minuit, 1968–1980).

20 Jules Vuillemin, *La philosophie de l’algèbre. Recherche sur quelques concepts et méthodes de l’algèbre moderne* (Paris: Presse Universitaire de France, 1962).

#### LEARNING HOW TO SPEAK MYTHICALLY

The **clauses** / gods / loci / media are sacred. They ordain the significance of words. In the interplay of spoken clauses / gods / loci / media, with the stability of words (for example by practicing Homer’s *Odyssey*), new clauses are being generated through new word combinations – rhetoric / didactics / topic... Divinity is **the** [one] clause. Diabolic are **the** [many] words.

**And let us straight away shift our concentration along algebraic symmetries, onto the next, rational stage of the Greek idealists and empiricists, as well as medieval scholastics:**

#### LEARNING CORPOREAL SPEECH

The **words** / forms / personae become sacred. They ordain the significance of the properties / phonemes / figures / numbers, in the interplay of written words, with the stability of properties (such as the *mores* in Ovid’s *Amores*). The erstwhile sacred clauses have become a chorus of words (syllogistic), so as to influence the property of another word, through two properties / propositions (categories) – *Organon*: deduction – God is **the** [one] word / being – diabolic are **the** [many] properties / phonemes – eroticism, friends, insemination, ethos, pathos, logos. Heraclitus the word mover, Aristotle the word creator.

**And on we move, onto the next analytical stage, that of the modern age:**

#### LEARNING OSTENSIVE SPEECH

The **properties** / figures / numbers now turn sacred. They ordain the significance of the modi, in the interplay of narrated properties (logic, analytics) with the stability of modi (such as the drama in Shakespeare’s *Hamlet*). The erstwhile sacred word has become a co-narration of properties, so as to influence, through its modi, the modi of other properties – God is now **the** [one] property / becoming / life / nature – analysis, construction – diabolic are **the** [many] modi – Leibniz the generator of properties, Kant the gatherer, Hegel the doer.

**And—anticipating somewhat—on to the next, the algebraic stage of the 20th century:**

#### LEARNING VALUATIVE SPEECH

The **modi** / imagination / intellect now turn sacred. They ordain the significance of the values, in the interplay of the articulated modi (logic)... The erstwhile sacred properties have become the co-articulation of modi, so as to influence, through its values, the values of other properties – God now is **the** [one] modus – diabolic are **the** [many] values – Nietzsche the modalizer...

### IV UNDERSTANDING ONE ANOTHER

Even after this brief, diagrammatic outline we sense that it will not be easy to find stabilities, if we are to refocus not only the actors and plays, but the stage sets as well with our pieces. On the stage of

talking bodies, we see the performances of the thoroughly differentiated Greek buildings, for example; or, with barely changed sets, of the successful megalopolis Rome, of the pragmatically controlled orations of free Roman citizens, or of late medieval scholasticism. The word is ever sacred, and ever are the properties that are not enshrined in words diabolic: elementary, contemplative motions of man on the scholastic stage of geometric, syllogistic rules. We suspect that it will be impossible to replicate these performances on the sets of the era, because we no longer have these sets. Today we find ourselves on a new stage, slightly blind to the productions of days gone by. We watch their relics and think them a little gauche as they move about on our present-day stage. Their richness does not lie in some objective reference, some precise analysis. Those are the sets, the personae and the plays of the analytical stage that were unknown then. All of them schemata of our contemporary, or rather of yesterday's stage, clouding our view to the abundance of our cultures. That makes us like the dike watchman who doesn't want to get wet, who isn't even able to swim, but who'll talk about anything and everything. Then again, if all you can do is swim, and, while unwilling to step out of the water, are still prepared to talk about everything, you won't be able to appreciate the richness of the dike-builders' art either. These small overlaps of various bodies of thinking: we may be able to call out to each other in the storm. But talk about what? The riches of different worlds encapsulated. Nearly speechless.

A system of coordinates, for example, like the one by which today we so easily map movements, did not exist in antiquity (it took Descartes to formulate it in 1637), which is why drawings of a Greek temple, or a Roman house, or a Romanesque church are all at least as much instances of self-staging as of third-party staging. If we take these mappings as references, we decelerate the irritations of our own flickering past, channeling them, literally petrifying them, self-analytically tracing, as archeologies, our throttled infrastructures. The same applies to the prominent grammars of William J. Mitchell in his book *The Logic of Architecture* (1990):<sup>21</sup> of course we can reproduce existing architectures! But designing them is a whole different ball game. Christopher Alexander does better in his *Pattern Language*,<sup>22</sup> but he, too, has analysis precede synthesis, in order to avoid inventing new truths. Every snapshot reflects the same game: we stage nature and ourselves on the setting of analytical, throttled projections. The photographic images, which today we see as so natural, veracious—innate, as it were—did not exist 200, let alone 500 years ago. It's almost unimaginable now that the photographic view is an

21 William J. Mitchell, *The Logic of Architecture: Design, Computation, and Cognition* (Cambridge, MA: MIT Press, 1990).

22 Christopher Alexander, *A Pattern Language. Towns, Buildings, Construction* (New York: Oxford University Press, 1977).

invention of ours: cultivated by us; a convention, a highly regarded staging. As a student I heard an impressive story (whether it is true or not I can no longer verify): in some jungle, ethnologists filmed some natives that had never seen a photographic or technical picture in their lives, and now beheld themselves as tiny manikins on a monitor. They viewed those figures with great interest and, after a while, went looking round the monitor in order to watch themselves from behind. When they found there was nothing to see, they laughed and walked away. The idea that a person has a face, a mask, that is capable of expressing different things, the idea that you can peel a figure off a thing, but still be able to talk about the thing itself, or even just the idea that you can talk as a friend to friends, were all unknown to them. They did not know anything of such an explicit nature, and so they didn't trust it, were unable to appreciate it. They will have had other sets of values on their stages.

Indeed, Vitruvius' ten treatises about architecture contain exclusively text, just as Euclid's geometry manages practically without illustrations. To us it's hard to imagine how that could have worked. It's even less imaginable that people were not in the habit, then, to conceive of graphic, geometric representations of architecture, or use draughtsmanship to visualize geometric problems, or consider drawings or diagrams as helpful in the construction of their buildings. Just as to us it is hardly conceivable that scale drawings, or indeed every word of our language, are not natural, but in fact complex inventions: we developed them, because we experienced them as useful and were able to enter a cultural compact about them. Now they have become internalized, second nature: innate movements and well practiced speech; like swimming or riding a bicycle: once you've learnt it, you don't ever lose it; it's impossible to lose it, you don't even have to think about it any more.

How then do we overcome the mutual speechlessness of our encapsulated worlds? How avoid the reductionisms of too-tiny overlaps? Michel Foucault may be able to help.<sup>23</sup> With his notion of 'device' or 'apparatus' (*'dispositif'*), he densifies every cultural articulation and frees the discourse from the powerful constraints of script. Habermas, by contrast, locks them up in idealistic 'rational discourses'.<sup>24</sup> Lyotard, too—to give just a couple of indexes to today's discourses—dissolves this openness into melancholy-tainted multitudinities.<sup>25</sup> What we are looking for, however, is a self-confident, open, purposeful, masterly quest for invariances that corresponds most closely to Foucault's approach. Thanks to these invariances, we are able to let the encapsulated riches compete on the algebraic stage and produce, in the theatrical, performative sense, new abundances.

23 Michel Foucault, *Archaeology of Knowledge* (New York: Vintage, 1982 [1969]).

24 Jürgen Habermas, *Theory of Communicative Action*, transl. by Thomas A. McCarthy (Boston, Mass.: Beacon Press, 1984 [1981]).

25 Jean-François Lyotard, *Les Immatériaux*, Paris, Centre Georges-Pompidou, 1985.



Let us now describe in more detail the concept of the stage that is so central to our text. For us as architects, Vitruvius<sup>26</sup> is the reference. Come the Renaissance, Alberti translated Vitruvius' texts for a fresh, urban public,<sup>27</sup> expanding/reducing them with drawings and graphic representations. Thus, the 15th century reenacted the ancients. Vitruvius had authored a tractate, a text whose purpose was to didactically, dogmatically stabilize and popularize institutional Roman power, as we might put it today. Alberti, too, calls his Vitruvius text a tractate. In so doing, he deliberately places it in the traditional line of religious-dogmatic scholastic treatises. The perspectives, constructions, architecture models that make their first appearance in the 15th century are thus part of a tradition of teaching, persuasion and rhetoric, but now addressing an affluent, urban 'public'.

Thus we get to the first assumed invariance on our stage. Vitruvius, in the language game of rhetoric/didactics/poetics, distinguishes between

*orthographia* [ὀρθός orthós, 'upright, right' – the 'performer'],  
*ichnographia* [τό ἴχνος, íchnos, 'track, footprints' – the 'play'] and  
*skenographia* [ἡ σκηηνή, skēné, 'every covered, shadowy place; tent; stage, scene' – the 'stage'].

We shall label them **O**, **I**, and **S**.

We shall then follow Aristotle's logic. It, and in particular his syllogistic, has an exceptional influence upon the history of Western thinking. In his *Categories*, the first book of writings later gathered in the *Organon*,<sup>28</sup> he regulates free-standing linguistic expressions with two so-called essential (primary) properties:

exists in an inherent [**Z**] and  
 is being expressed by an inherent [**A**].

Therefore a 'word' is always either (ontological square):

[**¬Z**, **¬A**] e.g. the individual, Socrates, the first substance,  
 [**¬Z**, **A**] e.g. the species 'man', the second substance,  
 [**Z**, **¬A**], e.g. individual property 'white', or  
 [**Z**, **A**] e.g. property as species 'whites'.

Additionally, a 'word' has other, accidental (secondary) properties: quantity, relation, quality, plus another few that are subordinate: place, time, situation (or position), action and passion ('being acted on').

<sup>26</sup> There are 73 editions of Vitruvius' *Ten Books of Architecture* (1497 and 1909) available at the Stiftungsbibliothek Werner Oechslin in Einsiedeln: <http://echo.mpiwg-berlin.mpg.de/content/florentinecathedral/oechslin>.

<sup>27</sup> Leon Battista Alberti, *De re aedificatoria libri decem*, 1452, 1485.

<sup>28</sup> Robin Smith, "Aristotle's Logic," in *The Stanford Encyclopedia of Philosophy* (Fall 2011 Edition), Edward N. Zalta, ed., <http://plato.stanford.edu/archives/fall2011/entries/aristotle-logic>.

In *Organon's* second book, *De Interpretatione* (*Περί Ἑρμηνείας*, *Perí Hermeneías*), Aristotle defines as proposition a word structure that may be either true or false. In the third book, *Prior Analytics* (*Ἀναλυτικά Πρώτερα*; Latin: *Analytica Priora*), the doctrine of deductive reasoning, he discusses how, from two propositions or observations, a new proposition may be deduced (syllogism). Then the outlines of this procedure are drawn and good examples of scholars' disputes are given (*Topics*; *τά τοπικά*; Latin: '*Topica*' – written by Aristotle first, in fact, but later treated as an appendix, especially in the Middle Ages), as well as examples of fallacies.

So let us put Aristotle's *Organon* upon the Vitruvian stage, proceeding quite schematically, and see what happens. The words, then, are staged as substances (**¬Z**), attributive of properties/propositions (**Z**) to another substantial word (**A**); with the purpose of his language game being the enacting of clauses, *topoi*; in Vitruvius' case in order to guide the erection of buildings in accordance with the speech modes of the scholars. In the enactment, the words correspond to *orthographia* (**O<sub>1</sub>**), syllogistic to *skenographia* (**S<sub>1</sub>**), and the proposition to *ichnographia* (**I<sub>1</sub>**). We shall call this constellation (**S<sub>1</sub>**, **O<sub>1</sub>**, **I<sub>1</sub>**).

To be sure, anchoring these so readily may give rise to some justified criticism. But let us demonstrate how well the invariances thus positioned can describe the shift of concentration in relation to Vitruvius with Alberti.

So what does change, with Alberti and the Renaissance, in respect of Vitruvius? According to our thesis, all we have to do is switch one position within the vector (**S<sub>1</sub>**, **O<sub>1</sub>**, **I<sub>1</sub>**): during the Renaissance, properties—as we have shown—become substantial (**Z** > **¬Z**) and start assuming the part of substantives. Now adjectives stand as upright persona on stage; now properties (which, recast in the orthographic role, we shall call **O<sub>2</sub>**) attribute values to other properties (**O<sub>2</sub>**). This shift in concentration becomes apparent everywhere in the comparison of Vitruvius' and Alberti's texts. (Owing to my lack of knowledge of Latin and Greek, I'm afraid I have to rely on the available, idealistically and analytically distorted modern language translations). Properties become substantial, values specific, *topoi* pre-specific. Therefore, the shift of concentration in the Renaissance shall be called (**S<sub>1</sub>**, **O<sub>1</sub>**, **I<sub>1</sub>**) > (**S<sub>1</sub>**, **O<sub>2</sub>**, **I<sub>1</sub>**). It will take some time and a few further shifts before we will be able to find a consistent (**S<sub>2</sub>**, **O<sub>2</sub>**, **I<sub>1</sub>**). But more of this later.

Now, notions such as property, value, substance, role, concentration, etc., are highly abstract. And our perception of the Renaissance or of antiquity does not yet gain much differentiation from the schema as presented here. But before we continue to elaborate on this thought game, a couple of brief remarks about our use of language in our algebraic body of thinking: within it, notions have lost their specific meaning. While it is convenient to have a definition for a specific term, we

soon find that there are many definitions. We may refer to conceptual histories, encyclopedias, discourses, etc, but the closer we look, the more complex, more sluggish and more contradictory things become. We get stuck. If we are curious and take pleasure in our abilities, then, try as we might, this is not how we are going to discover any stabilities, unless we trivialize the stage on which the play is supposed to happen, and follow boring rules. So on the specific stage, we can only either move slowly and be interesting, or move fast and be boring. But what we want to do on our algebraic stage is to grant constitutive agility to our concepts, which we shall not quantify, but quantize. We know they can have many meanings, it just depends. But if we place three of them onto the stage, they start stabilizing each other, even though individually they are ungraspable. Then add a fourth one. It's a different kind of play! The identities of these concepts show a different characteristic. How thrilling! Thus we are, in our descriptions, not looking for definitions or clarities, but for agilities in which may develop rich stabilities, in which, in turn, the concepts involved may enrich each other as much as possible, may cross-fertilize each other, may show us just what they're capable of.

A brief demonstration may be of help. Krufft, the German architecture theorist, for example, writes about Vitruvius: "Although proportion is the precondition for *ordinatio*, *eurhythmia* and *symmetria*, it is not defined as these concepts are introduced; it is not, for Vitruvius, an aesthetic term. For Vitruvius, proportion is purely the relationship of numbers, not the effect brought about by its application."<sup>29</sup> There are many such passages, by many such authors. And of course, this is not wrong; but with its funneling, it does not get us very far. We would call this kind of writing and thinking functionalist, perhaps even minimalist or existentialist. It's too easy to interpret the 'missing definition' of 'proportion' as a failing. We believe that it in fact enhances the role of proportion within Vitruvius. To suggest that Vitruvius reduces proportion to "purely the relationship of numbers" is inappropriate and tells us more about Krufft's idealization of numbers than it contributes to Vitruvius. Even more drastic is the effective short-circuiting of the concepts 'effect' and 'application': a curious, slap-dash jumble of concepts held together in a minimalistic corset. What a strange cast for our stage. What a strange interplay that yields so little about Vitruvius, but so much about Krufft and his time.

From today's perspective, it is tempting to cast the Vitruvian concepts as somewhat authoritarian personae: grown up, educated, fully formed figures, resembling, perhaps, the architect that Vitruvius outlines in his first book: an architect who he demands should have a

29 Hanno-Walter Krufft, *Geschichte der Architekturtheorie* (München: C.H. Beck, 1985): pp. 28.

comprehensive education, be a competent craftsman and specialist expert, an eloquent speaker and skillful writer, familiar with geometry and optics, as well as arithmetics (so as to be able to calculate project costs and master proportion), historical learning (to appreciate ornamentation and understand its meaning), philosophy (to shape character), music, medicine, law, astronomy. And then some. Of particular interest though is what he does *not* demand. He does not demand a personality. His concepts have no facial expression, no personal names, no history of their own, no political position. I would suggest that concepts and figures are not specifically distinguished, that in Vitruvius' time they were typified. I'd be inclined, therefore, to cast Vitruvian concepts as authorities, and have them exchange carefully proportionately stabilized properties, after the speaking manner of wise men. So our personae are: *Firmitas*, *Utilitas*, *Venustas*, *Eurhythmia*, *Symmetria*, *Distributio*... *Orthographia*, *Skenographia*, *Ichnographia*... They all perform a complex play upon Vitruvius' stage and demonstrate, among friends, what they are capable of. In the construction of a building, a temple, the play of these authorities is being re-enacted. That's how it might happen: that's how we might attain the riches of these texts. Krufft, however, differentiates much too much between subject and object, cause and effect... Proportion is to be understood as 1) the relation of the parts to each other, 2) the relation of all measurements in respect of an underlying modulus, 3) analogy to the proportions of man.<sup>30</sup> How weak all this is. These are all unnecessary reductions, impoverishments.

So let our concepts play on the algebraic stage:

Vitruvius has substantial [Z, -Z] words [O1] attribute properties [A, -A] to other words [O1]. Alberti, however, has substantial [Z, -Z] properties [O2] attribute values [A, -A] to other properties [O2]. The ancient stage [S1, O1, I1] in the Renaissance mutates to [S1, O2, I1].

And let's see what this can contribute to architectural representation: On the Renaissance stage, we find the special properties (O2) of place, situation, and quantities cast as substances. Lines (O2) are now attributing points to one another in order to specify themselves. Euclid's geometry still performed clauses, i.e. specific motional figures (O1). They attributed elements, for example lines, to one another, so as to generate new motional figures. With Euclid, it was still "a point is that which has no part."<sup>31</sup> Now, lines are attributing values to one another, calculating them rationally, utilizing the particular motility of numbers against magnitudes,<sup>32</sup> to test the ratio, the proportions of the old

30 Krufft, *ibid.*, 28.

31 Euclid, *The Elements: Books I–XIII – Complete and Unabridged*, translated by Sir Thomas Heath (New York: Dover, 1956): Book I, Postulate I

32 Augustus De Morgan, *The Elements of Algebra* (London: Taylor & Walton, 1837).

authorities, prior to acting, to building. The *topoi* of antiquity, the proportions, the buildings become pre-specific. They become negotiable, so as to enable the enactment of new stage plays. Thus originates the architectural model, thus representation in perspective. Thus beckons Descartes' analytical geometry; thus the bourgeoisie supplants the guilds; the clergy, aristocracy; thus the theoretical planner disunites from practical execution. And so on.

It is striking, for example, how Palladio in his *Villa Rotonda* adopts the geometrical motions and symmetries of the scholastic models in the mounting of his figures (O<sub>2</sub>) and through his *Ichnographia* (I)—we'll grant him an 'I' for this projected imitation—and how, in the gap of the new figurativeness of *Orthographia* (O<sub>2</sub>), he sets up urban Roman figures of power as upright persona. These Roman figures are no longer words, but they embody the virtuality of word generation. Talking figures. They are no longer articulated by the scholastic order, but impersonate it; they have ingested scholasticism, as it were. And now they stand on stage, projecting the old scholastic order into the world with their scholastic linguistic apparatus. An unfriendly take-over of the old feudal and clerical order by the new urban one. We've met this shift in focus of concentration before, and called it (S<sub>1</sub>, O<sub>1</sub>, I<sub>1</sub>) > (S<sub>1</sub>, O<sub>2</sub>, I<sub>1</sub>). We can observe many such shifts in our culture.

If we look at the plans of St. Gallen monastery of the late 11th century, or indeed the drawings of Honnecourt in the early 13th century: what a difference from Palladio. Although here, too, there are only lines and circles, these are contemplations, rather than projections. What then makes medieval monks on their stage copy books over and over again, build quadrate cloisters, and amble round well-tended gardens for centuries? We don't know. We just note: they built cloisters. Sediments, today. We don't know how they talked, we don't know how they read, we just know how they wrote. Sediments, today. We can only bring these sediments back to life in a very limited way on our stage. We can perambulate around the cloisters, for example. But today, after the third lap at the latest, we get bored. Yet if we put the cloisters and their bodies of thinking on stage and let them converse with a Palladian body of thinking, the whole thing gets vastly more interesting. It's unthinkable that Palladio would just keep on walking about that paradise. He wraps it up into the explicit interior of his villas, he takes it along in his projects and projections, he expresses it in his facades. Thus, if Palladio draws a square, he draws a different square from the monks before him. If Palladio writes a word, he writes a different word from the monks before him. Different worlds. There's no chance of enacting them together on an analytical stage. The Cantor set would be approaching zero. On the analytical stage, we wouldn't perform common roots, etymologies, epistemologies, lest we should fall into a mute aestheticized contemplation. Some are content to wander round the

quadrangle forever. Others sit down right in the middle of it. A square is not a square, a word is not a word.

Conversely, the logical quantifiers of Boole, Dedekind, or Peirce open up the situation on the algebraic stage. What we, in common with them, suggest is to take specifically positioned invariances and let the riches of our world talk on the algebraic stage. This approach is neither analytically rational, nor arbitrary, opportunistic, positivistic, or aestheticizing. It means to be challenging, fast, masterly. It demands charm, wit, ambition, skill, responsibility. This is how we can put worlds on stage, enrich our world.

What we want to avoid, however, are generalizations. They reduce the one world as a quantitative picture into the accelerations of the channel systems of a projective world. Furthermore, we shall pay particular attention to the notion of abstraction. Abstraction is to mean that a notion stands in a concentrated relationship with a population of other notions. In terms of a counter concept, we shall promote that of concreteness and take it to mean the transformation of a notion into a population of other notions. We shall call the corresponding processes 'symbolizing' and 'articulating'. They shall be our means to assess abundances. So much about the algebraical approach, and the symmetries and invariances we posed. Now we are going to let our cultural history rotate. Spin at high speed, in fact, and see what happens. In a subsequent text, we will have space and time for more detail.

## VI THE WHOLE POINT, O<sub>1</sub> > O<sub>2</sub>

Let us begin (S<sub>1</sub>, O<sub>1</sub>, I<sub>1</sub>) with the perfused, mystical, very early representations of the visions of Hildegard von Bingen in the 12th century: the properties have not yet found a form, are not yet substantial, but they offer the fascination of meditation. In contrast to this the institutionalized, as we might say today, scholastic 'mappings' of about 100 years later: the myths are signified, for example by way of the square intertwined with the circle. Also, man no longer perceives himself as a second substance ( $\neg Z$ , A), as unfounded and unexpressed, but is being extracted from the representation and replaced by the interplay of symbolized properties: founded and expressed (Z, A) without a symbolized external onlooker, who has obviously been moved from the pictorial plane to the reality in front of the picture. The skill of contemporary Honnecourt in dealing with properties (Z, A) might be of a similar nature. He draws labyrinths, perpetuum mobiles, as well as many useful machines. And he is involved in building gothic cathedrals. Their medialization of substance is not far from that of the Renaissance discussed above, not least because in the gothic period, too, it was the cities and townspeople who, during the long boom years of the 12th–14th centuries, took position opposite the contemplative, epistemic

order. A period that comes to an abrupt end in the second half of the 14th century with a catastrophe that wipes out swathes of the European population, while the orthodox order faces a crisis so real that it bears no comparison to anything we can imagine, or bemoan, today: in the North, the Reformation, and in Italy, the Renaissance.

Leonardo now takes the human form and with it casts the old divine order, takes it over, as described above. With the massive successes of the great merchants, the *Reconquista*-induced sense of liberation and self-assurance—the crusades were ritualistic by comparison—and Columbus' hoards of gold that represent a projective potential that doesn't originate from the ancestral lands and that consequently leads to the abolition of the ban on usury, comes a boom in projective, increasingly descriptive modes of speech. This is the climate in which Alberti experiments (1477), in which Michelangelo articulates (1512; he uses the means of the corporeal order for articulating the phantasm of representation) that which Palladio will be able to stabilize architectonically (1577; he develops the vocabulary and the grammar for the visual architectonic order, which will swiftly differentiate through to our present day) and which Machiavelli, for instance, will stabilize politically (S<sub>1</sub>, O<sub>2</sub>, I<sub>1</sub>).

#### VII THE MOVING POINT, I<sub>1</sub> > I<sub>2</sub>

The counter-reformation, of course, is not long in coming and plays a virtuoso piece on the new stage. While Palladio's figures still cast very simple geometrical movements on an epistemological ground, that ground itself now turns into a project—the *Tractatus*, the *Ichnographia*, this ground is re-written in the counter-reformation. Pope Sixtus V (1521-1590) rebuilds Rome in just five years, 1585-1590, by not only constructing a new church or some new compound, but by projecting axes and erecting obelisks at strategic points. Thus Sixtus, the gardener, folds and wraps Rome into a new order, cleanses the city for the first time, provides it with water again and, taking off from these strategic points, lets it grow into the planned directions.

While the Renaissance was about making the subject O<sub>2</sub> 'mobilized' by S<sub>1</sub> along I<sub>1</sub>, now I<sub>2</sub> is being made 'mobilized' by S<sub>1</sub> on the moving O<sub>2</sub>. The epistemological Renaissance interplay I<sub>1</sub> is being projected into the moving O<sub>2</sub>. The point turns into a baroque pearl. The natural-number space, the epistemological, geometrical interplay of I<sub>1</sub>, is being turned by I on O into an upright rule, is being orthogonalized, becomes I<sub>2</sub>.

And a supremacy over the figurality of the interplay is what baroque is about: individual faces enigmatically distorted, individual motions focused, from the dark, mysterious ground, onto one sole, vertical, bright, central vector. The folds of the garments detach from the figures. The

motion of the medium explodes the frame<sup>53</sup>... Who yields power over the properties, their potentialities? On the one hand the power of wild speculation (tulip mania 1637), on the other hand the concentrated baroque interplays—concentration/inclusion, expansion/explosion. The skills and the might, the 'management'—of multiplication, integration, differentiation under projective, illustrative control—that they generate become extraordinary: a self-projective orchestration of the projective subjects into ever diminishing size. The point turns into a baroque pearl. And at the end of that era, there is no outcome in the exhausting power play between the cities, the church, and the aristocracy. Just productivities and differences. The Peace of Westphalia, 1648: pragmatism from the projective difference of baroque pearls. An open contest over the most attractive performance, in front of the unchanged scenery (S<sub>1</sub>, O<sub>2</sub>, I<sub>2</sub>).

#### VIII THE MENSURATED POINT, S<sub>1</sub> > S<sub>2</sub>

Only now, during this phase of the expansion of language games that exhaust themselves in an open contest, do we get, in 1637, along with Descartes' offensive counter-reformation, analytical geometry, the succession of the primacy of epistemological geometry by the new primacy of the difference of numbers (pure formality with Leibniz, pure functionality with Spinoza), rational numbers, a modified *Skenographia* (S<sub>2</sub>). Now a number is the difference of two baroque pearls, and no longer a contemplative circularity. In 1673, Leibniz develops an angled line into a sprocket wheel, to execute calculations based on the interacting movements of such wheels. The stage has changed.

The mutually stable epistemological reflection of *Ichnographia* (interplay) and *Orthographia* (upright rule) allows us now to abstract *Skenographia* (S) from the geometrically skillful perspective (S<sub>1</sub>) into the perspectivity of two numbers (S<sub>2</sub>). And here we are, with two infinities: the arithmetical infinity in the coordinate system, the rational-number space (I<sub>2</sub>), and orthogonally the geometrical, upright projection into the infinity of the natural-number space (O<sub>2</sub>).

Now the object of mensuration is no longer perspective. It is the perspectival possibility that is now being measured. And it is termed 'function'. Louis XIV (1638-1715) dismisses Bernini, the papal builder of St. Peter's Square, gently but firmly, because he is not up to meeting the demands of the court ladies' functional requirements and the standards of comfort expected at Versailles. Inwardly, perspectivity is in demand; outwardly its possibilities are measured in absolute terms. Which is why, in such a unique gesture and in the face of Parisians'

53 Gilles Deleuze, *The Fold: Leibniz and the Baroque* (Minneapolis: University of Michigan Press, 1993 [1988]): pp. 197.

resistance, the young king builds Versailles on the interface between city and countryside, as an abstraction from everything. It proclaims power over the differences of the pearls and their ability to express themselves. Therefore, too, is the Würzburg residence (1719-1744) by Neumann inwardly 'perspectivistic', and outwardly 'mensurative'. Kant's transcendental reason (1781) is measured in an idealized space and time. Numbers, things, persons become alive, and this aliveness is being measured. The stage is rebuilt. *Skenographia* is no longer perspective, it is analytics. In 1702, wheat prices are released from the aristocratic, territorially defined order, and a series of rampant famines can finally be brought to an end. In the medical field, vaccinations bring the plague under lasting control by measuring it before a new outbreak...—invisibilities in the old epistemic orders. Witchcraft, and the basis for the new, much more powerful diastemic orders.

Perspectivity becomes a comfort system, in the difference of numbers. They measure comfort, becoming its infrastructure. The numbers are pre-specific, a not yet perspectively projected geometry: potential geometry. The potential of comfort. That's how we want to see analytics, and arithmetic. Quite contrary to today's view: analytical geometry is not geometry. Analytical geometry is calculating with numbers, is arithmetic, is mensuration, is infrastructure for the co-ordination of rendering into geometrical movements, i.e. putting it into difference, in specific places. For the first time calculus as we know it today becomes possible. We are becoming very fast: emerging along the orthogonal vector from the baroque pearl of the one point (integration), gaining an overview over the other pearls that are abstracted into numbers, while swiftly reaching another place through calculations (diastemic order), now differentiating again into epistemic differentiation of the baroque pearl at the other place. Hence the performance of diastemic arithmetic and analytics—finding shortcuts between A and B, as channels in the epistemically invisible.

We easily forget these two planes, treating numbers as geometries on the same stage, and squander the potentials, the rationality of this difference. A natural number is part of the epistemic order, a rational number of the diastemic one. These are the first two infinities. Our concept today of construction takes place on the level of rational numbers and therefore is infrastructure, orthogonal to the perspectival epistemic concept of space. Perspectival space conception is rendering a body, comfort, a baroque pearl. Natural numbers are orthogonal to rational numbers. It is too simplistic to view numbers as equal to numbers, to treat 3.0 (diastemic) as equal to 3 (epistemic). 3.0 is a channel, 3 is a thing.

I like these symmetries of abstract notions. Now, we can look further. What then did happen during that time?

Euclid's first axiom still says: "a point is that which has no part." Now, the difference between two numbers is understood as elementary.

Points, lines, circles are now being 'recounted', for staging. Monads (Leibniz) or modi (Spinoza) now become elementary. New forms develop on the new stage. Visibilities emancipate from Plato's elements and Euclid's motions. In the visibilities of difference we can now talk about, and deal with, things that formerly were fantastic, that now can be turned into a project: Locke (separation of powers), Hume (empiricism—world and perception), Newton (new pragmatism in the old order), Leibniz (idealism in the figurative order), Spinoza (idealism in the functional order): this new, enlightened order abstracts from city/estates, and land/gentry. What we now have are planned, mapped projects that are calculable, 'recountable'. And now publicity-minded groups make their entrance: scientists, journalists, authors; critical 'regents'. Disputes are located in the scientific area. We have a bourgeoisie, the economy, medicine, comfort. Comfort systems. Networking. Gabrielle Émilie Le Tonnelier de Breteuil, Marchioness of Châtelet-Laumont (Paris 1706–1749 Lunéville) translates Newton. While Rome formulates, with St. Peter's Square, the absolute urban claim to power (people, bodies), Versailles formulates the absolute, elementary interface between town and countryside (all things are being put into difference, Versailles as controller of that difference, the absolute measure. Resources – lines – infrastructures). Meanwhile in a leafy Bath, a club of moneyed Englishmen who have grown globally rich in worldwide competition, meet and spur each other on in their dealings (values) in a landscape that is considered to be motile. During that time, competing systems of measuring visibility are being developed that are highly efficient thanks to their claim to absoluteness. Equality. Fraternity. These are Euler's new lines. Kant's *transcendentia*. Ichnography rewritten. *Skenographia* is no longer the subject in Euclid's space; *skenographia* is now analytics.

#### IX THE RATIONAL POINT, 02 > 03

Whither now? Let's start with the hot air balloon of the Montgolfier brothers, on 19th October 1783. Let us imagine that everything we just discussed regarding Versailles, or Rome, or Bath—all the mensurations and encapsulations—that all of it got encapsulated in the balloon and forced from the horizontal into the vertical direction. A vertical rocket-Versailles, the palace in the blast-pipe, the intersection between the measured within and without, town and countryside. Town and countryside no longer: the words, analytically, geometrically measured, or indeed re-counted, are now single properties, temperatures, densities, measured and set into the perspective of difference, into speed. Steam into motion, coal into energy. Watt the rocket-builder; Durand develops ground-breaking (I) rocket buildings (each knot of the typologies/genealogies a measured baroque pearl of

double perspectivity), Schinkel conceives idealistic upright (O) rocket buildings, the encyclopedists provide the rocket fuel; Boullée designs rocket arsenals. Lagrange supplies the mathematics for motility, for the fuse, shakes the rocket until it ignites. Fichte is a self-igniter, with Kant as the blast-pipe, Pestalozzi the flying instructor, Goethe and Schiller brilliant flying champions, Mozart the pushed prodigy with his jet music. Popular, vulgar, speedy, breathtaking... For the first time, the Montgolfier flight displays this world from above. Properties pervade the words, numbers the figures, steam the machines (they mutate into apparatus), knowledge the people (they turn into citizens), the balloon flies over cities (they turn into states) and countrysides (they turn into landscapes). Then, a few years later, in 1789, the revolution of the rocket men. Every upright citizen (O) a rocket-Versailles. A legal system. Liberty. Equality. Fraternity. While in England rocket men start their industrialization with rocket machines, Napoleon conducts rocket men all over the continent from above. Until the self-sustaining fuel runs out and he has his budgets cut: he loses steam and the bubble bursts—wonderfully described by Thomas Robert Malthus in *An Essay on the Principle of Population* (1798), and re-edited, along a largely unchanged frame of thinking, in the Club of Rome's *The Limits to Growth*, in 1972.

What just happened? It is important to me that we find the *invariances* in abundance. If we were in pursuit of forms, such representations would be boundless and presumptuous, reductionist in their perception and unrestrained in the speed channelled by that reduction. A rocket embodiment, what else. And that's precisely what we don't want. Which is why I emphasize again the mutual orthogonality of our phases of the genealogy of the articulable. The traces of the properties, of the 'rockets', precisely aren't traces of numbers any longer, of baroque pearls on the coordinate system of the analytical scenery. We are going to call the rocket-points on the coordinate system 'substantial' because, in the sense of the primary Aristotelian categories, they belong 'not to the underlying'. They are 'expressed' or 'non-expressed' upright individuals or species. In accordance with Vitruvius/Alberti, we called this invariance by which we focus our interest 'orthography' (O). The columns, facades, windows, doors of a building in this sense are substantial and are, in classicism, indeed reformulated with great precision. Because the new points are 'not underlying', their driving force is not visible in *Ichnographia* (I), in front of the *Skenographia* (S) of analytics. These special constellations of (S<sub>2</sub> | O<sub>3</sub> | I<sub>2</sub>) describe classical phases, such as we were already able to describe in the Renaissance (S<sub>1</sub> | O<sub>2</sub> | I<sub>1</sub>) in front of the syllogistical *Skenographia* (S<sub>1</sub>). Yet, the driving forces are still analytically visible (I<sub>1</sub>), they are still represented in the interplay (I<sub>2</sub>) in front of an analytical scenery (S<sub>2</sub>). We shall call this special constellation (S<sub>2</sub> | O<sub>3</sub> | I<sub>3</sub>) 'manneristic'. We already met

it when talking about baroque (S<sub>1</sub> | O<sub>2</sub> | I<sub>2</sub>). We'll separate it neatly from the classicistic (S<sub>2</sub> | O<sub>3</sub> | I<sub>2</sub>) previously referred to. Against the security of analytics (S<sub>2</sub>) and of the substantial point (O<sub>3</sub>) we'll find it easy to formulate new interplays (I<sub>2</sub> > I<sub>3</sub>). Now the substantial points are no longer geometrical elements (O<sub>1</sub>) or baroque pearls (O<sub>2</sub>), but energetic propelling charges (O<sub>3</sub>). And the interplay (I) is no longer one of differential logic (syllogistic – I<sub>1</sub>), or of differential calculation (I<sub>2</sub>), but one of differential transformation (I<sub>3</sub>). In the 19th century, this transformative interplay of driving forces (I<sub>3</sub>) becomes familiar and is exercised in its innumerable forms.

#### X THE MOVING POINT, I<sub>2</sub> > I<sub>3</sub>

Everything wants to fly. William Turner paints, a thousandfold and almost journalistically, the dream of a weightless energetic fusion. And as in his pictures, steam engines waft about the land. Not thresholds, not projects, not motion: energetic streaming becomes the dominant feature. In the fast-expanding grid of these transforming energetic streams, the old territory gets potentialized into a resource. Industrial cities give root to these potentialities. Nation-states stake out the fields of potentialities. The Panic of 1857: The first great blowout of global potentialities. The British in particular suddenly show up in the oddest places. As if from another planet, they arrive and do strange things; look on, slightly bored and aloof, observe what's there, and ponder what could be done about it. And then do nothing. At first. Tourists. The rich daughters of British 'mighties', in particular, turn their backs on marriage and discover the Alps in winter. Lying out on the terrace surrounded by the snowy peaks, they bask in the sunshine, doing nothing. At least for the time being. On the continent, priorities differ only slightly. As Wilhelm von Humboldt puts it: "Transforming as much of the world as possible into your own person is, in the highest sense, living." Or: "The true purpose of man—not that prescribed by ever shifting inclinations, but by eternally immutable reason—is the highest and most proportionate development of his powers toward one whole. First and indispensable prerequisite to this end is liberty." His brother Alexander, meanwhile, gathers and examines meticulously anything he can get his hands on during his extensive travels. Wilhelm, in turn, examines with committed self-transformation his own language in *On Language: the Diversity of Human Language-Structure and Its Influence on the Mental Development of Mankind*. Darwin, through population-related dynamics, examines species that do not exist. Medicine fights diseases whose existence is only probable. Hygiene, travel agencies, kindergartens. It really gets quite breezy, when we all fly: Joseph Paxton, with his Crystal Palace, manages to put up, at vertiginous speed and in luminous boundlessness, a no-longer-building, a climatic mega-space for negotiating

industrial potentials. Eiffel and Boileau, in Paris, build the first department store, *Le Bon Marché*. In a combination of bright skylights, light iron gangways, slim girders and ornamental forms, the architectural bodies dissolve in airy logistics. “The 19th century turned bold while nobody was watching,” Giedion writes about construction behind this scenery of a dissolution into light. Eiffel builds, without scaffolding, a free-standing tower such as the world has never seen before. Up into the air. Without any tangible purpose. Whereas for Hegel, weaver of transformations, things are getting more serious: “The State is the reality of concrete liberty.” Cantor packages the infinities, Marx dispenses them. Meanwhile in Chicago, Sullivan takes the Midwestern wheat glut as his cue to pile stores on top of each other and turn them into skyscrapers. Gaudí naturalizes emoted potentials as a suspended model into the Catalan ground, by way of elementary, mythically transformed figures. Ludwig II of Bavaria dreams up Neuschwanstein; his father creates, against massive resistance from the city’s population, the Technical University of Munich. His friend Richard Wagner, in *Tristan und Isolde*, lets harmonics explode in such a way that nothing can ever be the same again... Fourier the transformer; Maxwell thinks up a fantastic 20th century infrastructure, Werner von Siemens builds it; Boole amalgamates analytics into 0 and 1, Hilbert symbolizes the extant mathematical world into algebraics; modern chemistry symbolizes matter that is not yet there... Things threaten to dissolve, in accelerating self-transformation, towards entropy. Everything flies, anything can transform itself into anything else. The world is detached from its ground, has become atmospheric, climatic. The analytic double points, the self-projective pearls, the linear analytic opening-up of the point with Descartes, Newton, Leibniz...—they all dissolve in diffractive patterns. Analytics and numbers have exhausted their possibilities. Symbolic algebra integrates logic, analytic algebra, and arithmetics. Points are being renewed: non-linear probabilistic openings. (S<sub>2</sub>, O<sub>3</sub>, I<sub>3</sub>). Impressionism. The time is ripe for the next transformation.

But before we proceed into our own era, S<sub>2</sub> > S<sub>3</sub>, let us briefly summarize. We described the stage thus:

- O : *Orthographia* – Elevation – The Actors
- I : *Ichnographia* – Ground Plan – The Play
- S : *Skenographia* – Perspective – The Scenery.

We ranged the times into:

- 0 : Sophists
- 1: Antiquity and Scholasticism
- 2: Modern Age
- 3: Enlightenment
- 4: Today

And we repeatedly cautioned against the view of linear-energetic sequences, stories, figures, or reduced series. We much prefer the idea

of diverse stages relating to different times. The actors have different identities in different eras:

- Settlers [00] – Merchants [01] – Seafarers [02] – Pilots [03] – Astronauts [04]

Or:

- Friend [01] – Person [02] – Individual [03] – Identity [04]

The play, too, receives different identities in different eras:

- to talk [I0] – to order [I1] – to move [I2] – to balance [I3] – to appraise [I4]

As does the scenery:

- myth [S0 – syllogistic/order [S1] – analytics/motion [S2] – logic algebra/balance [S3] – symbolic algebra/constitution [S4]

To exemplify what is being generated with the help of the stages, the simple case of the line:

A line as a friend [01] is the way covered [I1] between two points on the ordered earth [S1]. Merchant.

A line as a person [02] is calculated motion [I2] on moving water [S2]. Seafarer.

A line as an individual [03] is a balanced, energetic tension [I3] in the climate of the (interlinked) air [S3]. Pilot.

And what about the next step?

A line as an identity [04] is a fertile constitution of indexes in the available universe [S4]. Astronaut.

And:

An identity [04] becomes, via a fertility in the availabilities [I4], an individual [03].

The individual [03] becomes, via an equilibrium in an energetic field [I3], a person [02].

The person [02] becomes, via a position in a motional system [I2], a friend [01].

The friend [01], via a position in a *topos* [I1], is real.

It would be reckless to permit shortcuts here: it’s a long way, across the various stages, from a friend to a person to an individual to an identity; or from symbolic algebra (S<sub>4</sub>), via logic algebra (S<sub>3</sub>), via analytics (S<sub>2</sub>) and syllogistic (S<sub>1</sub>) to myth (S<sub>0</sub>), and back.

Or more directly: the steam engine cannot be described syllogistically, in the orders of friends. Protective vaccination cannot be narrated analytically, in a person’s motions. Mobile telephony cannot be comprehended logically-algebraically, in individuals’ balances. It’s a long way, out and back, and shortcuts must be avoided. It’s not about progress: it’s about different worlds.

An everyday example to show how ingrained these reductionist and impoverishing patterns have become today: *National Geographic’s* films on mega-factories. ‘Behind the scenes at Coca-Cola’. We’re shown fast, massive machines. We come face to face with a ‘natural

phenomenon' called *Coca-Cola*. Untold numbers of bottles, dizzying speeds. Impotent, we gape, as at the Niagara Falls. The might of Coca-Cola is visualized through technics, and technics through nature. Outrageously totalitarian and outrageously boring. And all the while Coca-Cola is about our idea of food, and food about our idea of our body. Here, Coca-Cola is a genuine pioneer. For Coca-Cola is no invention, no design. Just as mobile telephony is not design. Pasteurized milk would be a designed product: milk that keeps is balanced, hygienic, healthy, functional. Coca-Cola, however, was created as a brand. Coca-Cola is an identity. Its objective is not to be healthy or to function. That objective (equal to logic algebra) is being taken for granted and translated into the negative. Coca-Cola is neither toxic, nor spoilt, nor immediately unhealthy. That's why Coca-Cola is neither healthy nor unhealthy. Coca-Cola was created as a brand, which holds out the promise of an identity. An identity that is welcome amidst the global mess: a welcome identity that is helpful in medializing the totalities of the functions and machines so lionized in *National Geographic*. With Coca-Cola we learn to play the machines. This is Coca-Cola, not a shortcut to plant engineering (which indeed would also have to be introduced as an identity and as a brand, so as to liberate it from logic algebra).

Returning to our summary: we described our cultural history as an overlap of stages in which *Skenographia*, *Orthographia* and *Ichnographia* develop in a staggered relay, drive each other mutually and amalgamate their respective know-hows and riches, comparable to an Archimedean pump or to the phase delay of electro-magnetic waves.

Sophists [S0 | 00 | I0] The settlers talk to each other within the myths

Idealists [S0 | 01 | I0] The merchants talk to each other within the myths (Plato)

Empiricists [S0 | 01 | I1] The merchants self-organize within the myths (Aristotle)

Scholasticism [S1 | 01 | I1] The merchants self-organize within the order

Renaissance [S1 | 02 | I1] The seafarers self-organize within the order

Baroque [S1 | 02 | I2] The seafarers move within the order

Absolutism [S2 | 02 | I2] The seafarers move within the motion

Classicism [S2 | 03 | I2] The pilots move within the motion

Romanticism [S2 | 03 | I3] The pilots equilibrate within the motion

*Generalism* [S3 | 03 | I3] The pilots equilibrate within the balance

*Redesire* [S3 | 04 | I3] The astronauts equilibrate within the balance

## XI THE MENSURATED POINT (S2 < S3)

Shall we explicate our own era in this schema? We want to break open the shortenings of our time, cultivate them. It was easy enough to

confront bygone eras with our alien body of thinking. Very few people are informed enough to feel challenged or concerned. But after having given our new body of thinking stability within the past, we shall now let it speak in our present time. And yet, we find ourselves immediately startled and challenged by its unfamiliar view. Let us be good hosts, and see what this stranger has to tell us.

But first, let's have a look at the symmetries-deduced 20th century schema:

The mutually stable diastemic reflection of *Ichnographia* (Interplay) and *Orthographia* (upright rule) allows us now to abstract *Skenographia* (S) from the perspective of two numbers (S2) into the probabilistics of four numbers (S3). And we now deal with three infinities: the arithmetical infinity in the coordinate system, the rational number space (I2); orthogonally to it the geometric upright projection into the natural number space (O2); and the balanced algebraic infinity of the complex number space (S2).

And:

The modi / imagination / intellect now become sacred. They rule the significance of the values. Interplaying with the articulate modi (logic)... The erstwhile sacred property now turns into an inter-articulation of modi, so as to influence, through their values, the values of other properties – god is now modus – diabolic are the values – Nietzsche the modalizer..

For example, economy: Adam Smith writes about wealth (S1), Stuart Mill about political economy (S2), Keynes about employment (quantity of work), and Friedman about money supply (S3). Money supply, or rather money supply policy or, actually, the politics of money supplies (S3), provides more political leeway in a secure economic framework (S2), generates economic wealth, and thereby generates greater individual freedom of movement for people. This is how we would view liberalism (S2) and the somewhat unfortunate notion of neo-liberalism (S3). Unfortunate, because neo-liberalism ought to be about labor and money-supply politics rather than economics of capital (S2). 'This conceptual shortcut of 19th century economics and 20th century capital produces the unspeakably corrupt and tyrannical—not to say fascistoid—conditions found in so many parts of the world,' says our guest. Accordingly, the energy question: energy is either possessed in the form of wood (S1), generated from resources in the form of coal or petrol (S2), or produced through photovoltaics (S3). Therefore, energy is a rare resource and capitalizable merely in the diastemic body of thinking (S2). Today (S3) it shouldn't be all about capitalized and fair energy distribution, but about energy supply politics in an environment of basic abundance. And that's where today's Greens and ecologists, referencing their work to the scarce resources typical of the 19th century diastemic body of thinking, turn up in uneasy symmetry with



FIG. 1  
Oskar Schlemmer,  
The Triadic Ballet  
1916.

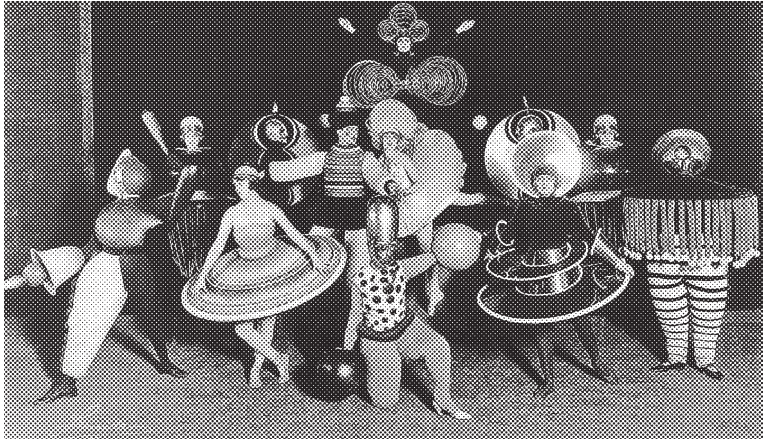


FIG. 2  
Busby Berkeley,  
Footlight Parade,  
1935.



FIG. 3  
Jaques Tati,  
Playtime, 1967.



FIG. 4  
Quentin Tarantino,  
Pulp Fiction, 1994.



FIG. 5  
James Cameron,  
Avatar, 2009.

those neo-liberal excesses that they so rightfully bemoan. ‘Yet, caught up in this symmetry they aren’t providing a solution, they are part of the problem,’ says our guest.

Or the media: Marshall McLuhan who, contrary to general perception, does not conjure up the ‘Global Village’ of cybernetics, but much rather uses this term to strongly and very clearly warn against dumbing down, and dumbing down in the media, calls the media the Fourth Estate, which by necessity can only deal with bad things and therefore must be diabolic. Because, according to McLuhan, their power cannot be accommodated within the nation-state’s trinitities of liberty, fraternity and equality; or executive, legislative and judicial powers. Only bad news is ‘good’ news. It is an inversion from the shadows of the enlightenment. No longer outgrowth of the refinements of the enlightenment, of scientific analyses, of artfully developed styles or industrial production. Devilish<sup>34</sup> stuff that upsets the make-up of classic modern times. For Immanuel Kant it was still about a *Critique of Pure Reason* (1781); for Georg Friedrich Hegel about the *Science of Logic* (1812–16), and for David Ricardo about the *Principles of Political Economy and Taxation* (1817). It was always about systematic procedures towards answerable refinement within a frame-setting stability, just as in Mary Shelley’s *Frankenstein or The Modern Prometheus* (1818). But already with Karl Marx, the pitch changes: *A Contribution to the Critique of Political Economy* (1857–58). Here the framework itself is being differentiated, and mapped for greater clarity. These ground plans reek of the mental maps of a dark and damp London, with which the ingenious Sherlock Holmes chases criminals, or which journalists use to sniff out bad news and—hiding behind their professional ethos—protect their sources. Bram Stoker’s blood-sucking *Dracula* (1897) as an inversion of Shelley’s apparatus *Frankenstein*. These mappings are not part of the nation-state framework, they are maps, reports, technical illustrations about the nature of the prevailing order, a psychoanalysis of nation-state-ism, a portrait of naturalness.

By this inversion of nature Nietzsche generates tragedy from the spirit of music (1872); now the exiled Zarathustra speaks to us (1883), and there arises before our eyes a *Genealogy of Morality* (1887); all of it driven by our technical know-how: electric power, photography, telegraphy, radio, cinemas... Soon a startled Europe, and particularly Germany, tries to fold it all back into the old order. To territorialize

34 The English expression ‘symbol’ goes back to the Greek word *σύμβολον* (*sýmbolon*), a derivative from *συνβάλλω* (*symbállō* ‘join together’). The *sýmbolon* was a token by which two parties (friends, business partners) made sure they were able to recognize each other, or representatives of each other’s party. To that end, a bone or earthenware object was broken in half, and each of the partners kept one of the parts. When meeting again, the legitimacy of the parties could be verified by joining the fragments. From which there evolved the notions of ‘sign’, ‘mark’, ‘tag’, ‘proof’, ‘agreement’, ‘identification’, ‘password’, ‘code’.

it, in the orthodox, nationalistic way. Thus driving themselves and the world into the great wars. And only thereafter, cleansed as it were and somewhat naïve at first glance, McLuhan’s *The Medium is the Message* (1967), or Ernest Bloch’s *Grundrisse einer besseren Welt* (1954–58).

And what about architecture? The architect turns into a world builder, into a stage designer (S3). Le Corbusier’s *Plan Voisin* for Paris, Buckminster Fuller’s *Dymaxion* domes, and his *Operation Manual for Spaceship Earth* (1968), Oscar Niemeyer’s draft for Brasilia in the middle of the jungle: the all-potent—world builder—breaking open the old order, diabolically negating, positively articulating the diabolical. Carried by the media, expelled from the old order. How else is one to globalize technical know-how without becoming definite, imperial, or capitalistic, as determined by the old systems? One answer is the International Style, an architecture that makes it possible not to be directly concerned by these world designs. An architecture in which I can breathe, in which I don’t have to deal existentially with the Irishman, the Russian, the Catalan, the Japanese, the Chinese, the Nigerian...—and yet am still able to live on the same, interlinked planet. How else would it work, initially? Without these abstractions? Without the battle of an Adolf Loos against ornament in all its refinement?

And then, barely 100 years later, towards the end of the 20th century, the mannerisms of the international, on the technically and culturally secure basis of a planet that by now, in terms of media, is thoroughly globalized. What else? Architecture has become decadent: a non-standard architecture,<sup>35</sup> parametricism,<sup>36</sup> geometrical nodes,<sup>37</sup> the ‘chance-like nature of city life’<sup>38</sup>... In the post-modern age in particular did we learn explicitly to symbolize everything: the old worlds have directly become the new stage sets (S3). Diastematic settings for a choreostemical play.

And this is how our guest describes the various phases of stage design in the course of the 20th century:

*Agility*. The experimental phase. The Renaissance as the setting. Picasso, Gris, Delaunay... Gropius, Moser, May, Melnikov, Le Corbusier, Mies van der Rohe... They operate with elementary symbols as negations of the diabolic. The components of their architecture are elemental and friendly. They encapsulate and mark naturalities and perform them on the new stage. Analyzing them from an old world point of view would always be a diabolic investigation. But they are ousted

35 *Non-standard Architectures*, Exhibition, Centre Pompidou, Paris, December 10th to March 1st 2004.

36 Patrik Schumacher, *Parametricism as Style – Parametricist Manifesto* (London, 2008), [www.patrikschumacher.com/Texts/Parametricism%20as%20Style.htm](http://www.patrikschumacher.com/Texts/Parametricism%20as%20Style.htm).

37 e.g. UN Studio, Mercedes Museum, Stuttgart, 2006.

38 Rem Koolhaas, *Delirious New York: A Retroactive Manifesto of Manhattan* (London: Academy Editions, 1978).



FIG. 1 P. 60  
Oskar Schlemmer,  
The Triadic Ballet,  
1916.

and concentrate on elemental properties: coloration, figurativeness, materiality, motility... —these abilities are being directly articulated. They are no longer products, but articles. That's why the simplicity of Sullivan's "form follows function" is deceptive and must be read with caution: the articulate form is cleansed of all the rigors of functional production. Forms are driven out of functionality, are being born from functionality. Ornaments are still being produced and consumed. The forms of the Weissenhof Estate (1927), on the other hand, are pure articulations beyond the adversities of industrialization and capitalism. They are socialized in a new world.

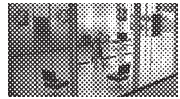
*Dynability.* The test phase. Baroque as the setting. The energies of the elemental articulations are being mutually measured and socially bundled. Unfortunately, these social bundles are all too often tied back into the diastematic and nation-state-like, into the familiar national-socialistic—and with catastrophic consequences. The notion of national socialism is a contradiction in terms: the choreostemically social cannot be bound up as though diastemically national. Whatever is not part of the order, is devilish. In the 20th century there is no way around dancing with the devil; but if—as in the illustration above—we trust the functions instead of the cleansed, abstract forms, things get really messy.

*Substantiability.* The cultivation phase. Enlightenment, classicism as a symbolic setting. Something like a measuring system for the development of social sheafing of symbols is being articulated. The talk is of structuralism, existentialism, or a 'linguistic turnaround'. The quasi homoerotic movements of Fellini's figures in Rome. Konrad Wachsmann's or Fritz Haller's lonely general nodes that, while all-powerful, are nothing because they have not yet managed to find themselves. Andy Warhol's "everybody's always creative", drugs, music, cybernetics. Sowing the seeds of globalization.

*Generability.* The harvest phase. Romanticism as the setting. Energized nodes grow along coded structures. Noam Chomsky's cybernetically linguistic anchorages proliferate everywhere. The Greens. Material, form, facade, nature. Imaginations turning explicit. Creativities dreamt in the 19th century explicating themselves in applications. The power of marketing, of brands. Hadid's *brachialia*. Green megacities. The post-oil city. The symbolizing of natures so as to be able to speak of new, artificial natures. Globalized markets. Containers. Logistics. NGOs. Empathy. Sustainability... Everything being symbolized with everything. Symbolized catastrophes. Unattainable luxury goods. The new high rises de-materialized. Trees. In Singapore, a gigantic pool 200 meters up, on top of a casino. Hubs of global networks made of indexes growing on the energetic generic nodes of nation-state infrastructures. Agility, dynability, substantiability, generability. These notions outline the 20th century vocabulary of the contemporary scenery, of our



κ [FIG. 2] P. 60  
Busby Berkeley,  
Footlight Parade,  
1935.



κ [FIG. 3] P. 61  
Jaques Tati,  
Playtime, 1967.



κ [FIG. 4] P. 61  
Quentin Tarantino,  
Pulp Fiction, 1994.

*Skenographia* ( $S_3$ ). They delineate the Third Infinity of the complex numbers that has synchronized with the infinities of *Ichnographia* ( $I_3$ ) and *Orthographia* ( $O_3$ ). In the laboratory, symbolizing the Renaissance, 1900-1930; in field tests of social bundling, symbolizing baroque, 1930-1950; in terror of oneself, symbolizing the infrastructures and the genealogies of the enlightenment that relieve us of our pains, 1950-1980; and in the general vaporizing and the didactics of the balanced global networks, symbolizing romanticism, 1980-2000.

( $S_1$  |  $O_1$  |  $I_1$ )

[  $\neg Z$ ,  $\neg A$  ] e.g. individual man Socrates, the first substance

[  $\neg Z$ ,  $A$  ] e.g. the species man, the second substance

[  $Z$ ,  $\neg A$  ], e.g. individual property 'white'

or [  $Z$ ,  $A$  ] e.g. property as species 'whites'.

( $S_2$  |  $O_2$  |  $I_2$ )

[  $\neg Z$ ,  $\neg A$  ] e.g. the individual property 'Celsius', the first substance

[  $\neg Z$ ,  $A$  ] e.g. the species property 'temperature', the second substance

[  $Z$ ,  $\neg A$  ], e.g. individual value '26'

or [  $Z$ ,  $A$  ] e.g. value as species 'dx | 26.0'. differential, integral.

( $S_3$  |  $O_3$  |  $I_3$ )

[  $\neg Z$ ,  $\neg A$  ] e.g. the individual value 'Switzerland', the first substance

[  $\neg Z$ ,  $A$  ] e.g. the species value 'Swissness', the second substance

[  $Z$ ,  $\neg A$  ], e.g. the individual index 'http://www...'

or [  $Z$ ,  $A$  ] e.g. index as species 'URL'. Universal Resource Locator.

## XII THE COMPLEX POINT ( $O_3 > O_4$ )

Now that everything and nothing is sophistically articulable, it is time to find stabilities, form identities in these basic riches and this symbolic force. It is time for a new literacy.

Now that we stand on this new choreostemical stage, how do we talk, how do we act? What is an actor to say, if they can say anything, talk to any master, yet don't know what to say? When the symbolism of joining the broken rods as a reductional sign in its logical possibilities (Frege) in the trivial (Gödel) is exhausted, has become barren? When we don't know how to join up the many rods of possible links in the internet? When everybody can be everybody's friend? When our cosmic, analytical, scientific order is diabolically exploded? How to move in this disposability? When no longer things and properties, but values are substantial. When modalities are being attributed. When properties, potentials, territories, balances, powers are pre-specific. Just as when, in the Renaissance, nouns, things, *topoi* turned pre-deterministic. So we are no longer free to decide our actions. Nor to find out what we



κ [FIG. 5] P. 61  
James Cameron,  
Avatar, 2009.

ought to do. When no longer nouns, nor adverbs, but—we suspect—verbs are at the core of our thoughts?...

This text is a showpiece of this kind. As an architect, I have tied some rods into a fugue: an architectural example of building an identity. I have wrapped up indexes in a way that something interesting may result. With great respect, and with great impatience, I have bundled indexes from our world. That's new in itself. It cultivates the generically available. It provokes speaking out in front of a socialized generic monotony and an authoritarian specific speechlessness. It's a text for the cultivation of the articulable on a choreostemic stage.

