Vera Bühlmann

Articulating a thing entirely in its own terms

Or, what can we understand by the notion of “engendering”?

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I would like to thank Nathan Brown for his helpful comments on an earlier version of this paper.

1 Here, "tremendous fascination" is deliberately "exported" from religious vocabulary, where *mysterium tremendum et fascinosum* is used to attribute holiness to God. It is an ambiguous expression that acknowledges the finitude of man's capacities to understand. It makes reference to something that is fascinating and yet at the same time profoundly unsettling, because it promises a kind of automatic comfort, belonging, and beauty, in which everyone is welcome, while also confronting us with man's helplessness and insignificance in the face of divine inviolability.

2 Louis Althusser may be considered as the most important theoretician here, yet the same symmetrical relation—albeit in significantly diverse manners—is also constitutively present in the work of Jacques Lacan and, arguably, that of Alain Badiou.

3 Especially the diverse attempts of a post-critical return to philosophy as a rational and metaphysical enterprise, which are referred to as marking a "speculative turn" in recent philosophy, associated with philosophers such as Quentin Meillassoux, Ray Brassier, and Graham Harman.

What or who is the subject of the generic?

Most anyone interested in computational design today shares a tremendous fascination with the somewhat dubious notion of "the generic" and its promise of the "one-of-a-kind particularity" of instances that can be computed.[1] Much of the widespread attractiveness of this promise is owed to the idea that such one-of-a-kind particularity be neither *example* nor *prototype*, that its organization be not governed by a logic of rigid classification. Every generic instance counts as "typical" (not needing any surplus qualities to be specified) even though it may well be "singular," the only one of its "kind." In programming, the notion of the generic means to formulate functions that are of highest possible generality such that they apply to no *specific* structures of data, but to (virtually) *any* structure of data. More straightforwardly: in programming, the *notion of a generic* object suggests that its instances are a *this*, without being a *such*. Their one-of-a-kind particularity can only be *indexed*, pointed to; it is a particularity that never manifests as *corresponding* to a certain genus, but only in terms of indefinite *adequation* within a scope of genericness that aspires to be universal (not classificatory), and that is being articulated by each particular manifestation of such an instance. The extraordinary—if not straightforwardly salvational—implication thereby is that with generic objects, *articulation engenders universality*. Generic objects promise, as objects with a nontransparent and apparently singular autonomy, to be shielded off from any attempt at appropriation by individually vested will, desire, interest, or meaning. Instances that are realized from such a generic object appear in a peculiarly innocent sense "genuine."

The great fascination for such genuineness today, as I understand it, is driven by a certain subversive pleasure geared against the exhaustive and demanding "political dynamics" of what is often referred to as an *economy of recognition*.[2] It sets the political confines for most of the twentieth-century structuralist and post-structuralist discourses around a necessity to give difference and self-reference a primacy with regard to identity and representation. In all brevity, central for an economy of recognition is that anything that can participate in and profit from it—anything that can find accommodation within the "modern" *nomos* (political as opposed to cosmological law) of a "modern" *oikos* that is "mastered" collectively (house-as-state)—needs to be mediated through language and concepts.

Such "mediation" involves all the complex cultural issues related to questions such as, what is actually the "object" described by linguistics? Does language, if we could find its pure form, describe natural kinds? Is there a pure form to language at all, or is language in its everyday use a "natural" language—and if yes, are there many natures of language, and what does such an assumption entail? Should we regard language as a system, a structure, or something else? Is it possible at all to generalize from the diversity of languages actually spoken and written, and what does it entail to do so?

To make a long story (very) short, a peculiar inseparability between *interpretation* and *formalization* has haunted notions of theory, objectivity, and subjectivity throughout the twentieth century. The respective discourses have grown quite removed, in all "critical" negotiation, from what is perceived by many as the "real issues at stake" (to improve and optimize global living conditions), and the voices raised are inevitably, it seems, also always acting *tactically*. But most of all, the idea of a position that could clarify permanently the confusions that spring and proliferate from linguistic attempts at clarification, appears to many, meanwhile, as raising the issues in inadequate terms.[3] Our relation to language simply remains as intimate as our relation to breathing.

Grammatizing symbolic domains

Now this is exactly what computational linguists like Noam Chomsky began to readily affirm: yes, he holds, language is so intimate to all of us that it makes sense to imagine it as a kind of a cultural "genome" we are born with, just like we are born with a biological genome. Such a radical move, whose affirmation must count as a veritable *philosophical capitulation*, was actually capable of moving beyond the preoccupation of "critical" philosophy with the (politically all but innocent!) *foundational issues* about the nature and role of language for thought, *specifically* (ethnic and racial discrimination), *generally* (socialism), or *individually* (capitalism). Instead, it was capable of *modernizing* the interest in language itself by postulating a categorical break with the mimesis tradition altogether. No longer focusing on mimesis and its questions of interpretation, truth, and the definition of meaning, the interest now shifted to the pragmatism of sheer transformability. The so-called transformational or context-free "grammars"

and "vocabulary" with which programming "languages" work do not even claim to be "natural"; they are, to put it a bit provocatively, *genuinely engendered*.

Let us look briefly at the development of two very strong paradigms in programming throughout the last decades. Early languages such as Fortan, Ada, or C started out with a *procedural paradigm*. The main interest was to make available for easy application, as a kind of toolbox of "instruments" in coded "form," the precise way of how a certain organizational procedure needs to be set up in order to function well. Every step of decision can thereby be "dispersed" into constitutive procedures, and hence, an infinitesimal limberness can be introduced into organizational forms. The paradigm subsequent to this pursued a much less directly hands-on approach, and instead became more didactical. With languages like smalltalk, Java, and C++, an *object-oriented paradigm* followed the procedural one, and it strictly kept apart the levels of *what* (described by procedures) and *how* (the specification of this *what*). Through this distinction, negotiation began to be supplied by "computational augmentation" about *what is to be reached*, and about how systems can be devised that allow the instantiation of procedures (*whats*) in much wider variations. Object-oriented programming allows devising entire "libraries" of "abstract objects" that depend on no statically specified order or classification system. Yet such abstract objects are not really "objects," they incorporate entire "objectivities"–they allow for one-of-a-kind particulars to "concretize" singularly, and optimally be fitted according to the requirements of a task.

This is what we are talking about with the generic in computation: the ambition of programmers to develop informational "coatings" as a kind of abstract packaging, as "symbolic cases" that preserve and protect the "abstract object's integrity." All the potential functionalities offered by it ought to be provided in a most robust and compact "manner," and for a largest possible variety of instances. Equipped with the technological power of such "languages," the subversive pleasure that seems to accompany the wide interest in generic design today lives, on the one hand, from a *radical affirmation* of those liberating and disciplining constraints within an economy of recognition, which dictates that the nature of a thing is to be considered in the (politically sanctioned) terms in which it is actually addressed; yet it also lives from responding to this dictate by what I would call an "expansion in dimensionality" by investing its energies into the "substantiation" of speculative notions of reality: it sets up, by means of such genuinely engendered "languages," symbolic domains that can accommodate the objects under investigation in the terms sanctioned for describing them, but that open up further possible spaces as well–which are governed "intra-specularly," within an imaginary locus proper to particular objectivities (or any combination of elements of combined objectivities).

An abstract object's integrity: Political subjectivization

But what kind of integrity are we talking about here, when referring to an abstract object's integrity? What kind of integrity is proper to symbolic domains that are governed intra-specularly? Much of what this text will be dealing with concerns this question. Far from desiring to disenchant the fascination that surrounds emerging notions of the generic, this text will suggest *radicalizing* this fascination. Yet to radicalize here, we will see, doesn't mean to "sharpen," as if a weapon, or to specifically devise an instrument that could be put to a worthwhile cause. To radicalize a fascination is to radicalize what charms us, the "spells" that take hold of us, and it is meant here as it literally applies to certain ideas about the nature of numbers, which I will come back to later. In essence, it is about mathematical adjunction in field theory, which emerged out of algebraic considerations regarding the solvability of equations. For now we can say that to radicalize the notion of the generic involves affirming the symbolic nature of numbers.[4] And this entails, literally, regarding numbers in terms of *finite*, yet *infinitely extendable "corporeality."*[5] With the rise of abstract algebra in the nineteenth century, people were also speaking of providing *domains of rationality* for a certain (numerical) solution space (instead of taking *universal conditions of rationality* for granted, as is the habit in a nonsymbolic understanding of numbers).[6] Put in general terms,

4 An example of such extensions of numerical corporeality is complex numbers, which are composed by adding the imaginary unit $\sqrt{-1}$ to real numbers.

5 Field theory is more adequately, albeit less often in English, called the theory of numerical *corpus*. This is consistent with the French expression for field, which is *corps*, as well as the German *Körper*.

MELINA MEZARI,
STELIOS PSALTIS

GENERIC VILLA

We deal with the notion of the Villa in a way that tries to conceive of a new kind, one that becomes descriptive of the entire group or class of villas, without a brand name, with a generic character. In other words, it is an experiment in universalizing the architectural concept of the villa.

Our project's focus lies on conceiving the architectural form of the villa as an inhabitable artifact. As such, we imagine that it acquires meaning in an open and indefinite manner, through the articulations of its modularity in all its instances. In our design approach, this modularity is predicated entirely by the activities hosted (actually or virtually) in a villa's possible compartments. Since these activities are infinite in number and manner, the generic villa can never be exhaustively articulated and actualized. Hence, in our attempt to describe it, we follow what we call "a framework of infinitary inclusion": we assume that certain configurations of its compartments express the generic yet singular, pre-specific individuality of any one villa in particular.

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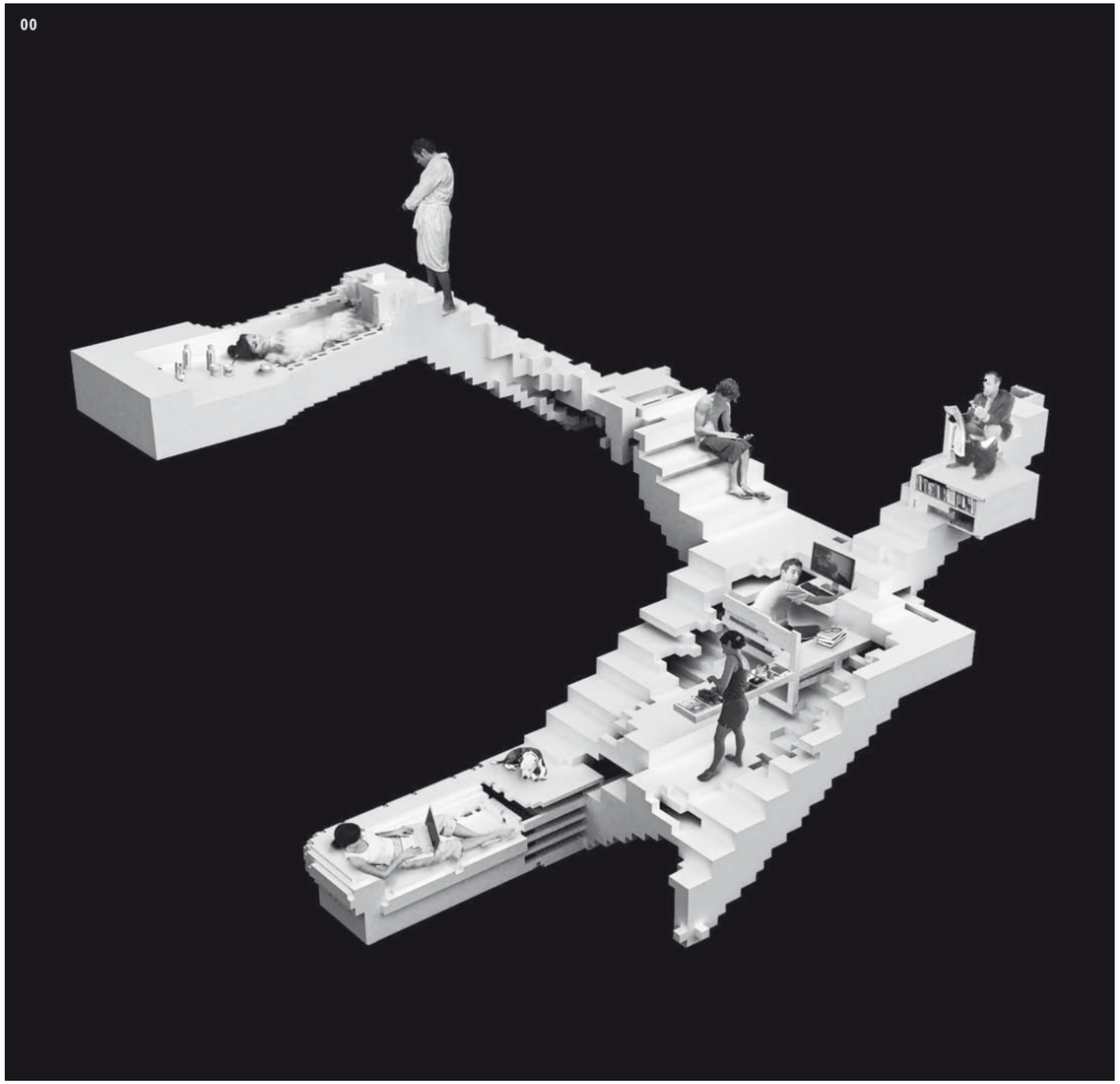


corpus theory is central for establishing domains of unique factorization—that is, numerical domains where the arithmetic operations are well defined *for all elements of a corpus* (i.e. not in general, but specifically). Thereby, arithmetics ceases to be, in a unproblematic manner, universally applicable. We regard this as central to a different paradigm of programming that we would like to help grow stronger—not a *procedural* or *object-oriented* one, but one we call *pre-specific*.[7]

This has several consequences for how we think about computability. Calculations cannot only be right or wrong, but they can also be set up in an adequate or inadequate manner. The solution spaces that are provided for calculations have different capacities. To put it quite provocatively: computing turns into an art (again), just like mechanics used to be an art (and not a science) before industrialization. Even the expression *to be industrious* once meant to be apt and diligent, in terms of personal qualities one has acquired–very different from the meaning of *industriousness* as an alienating submission to an orchestration that is strictly clocked by a responsibility external to oneself, which has become the predominant understanding today. The entailments for revitalizing this legacy of computing as an art are ambiguous, and they seem twofold: on the one hand its promise is to gain the possibility for a new criticality, yet on the other hand, this new *criticality* is rooted in a kind of *local universality*. When we suggest speaking of an abstract object's integrity, this relates to the particular capacities provided by the solution space that is constituted by such an abstract object.

But let us not discuss this further here in the rather technical terms of mathematics,[8] and instead refer to the same issue—criticality in relation to a certain *capacity* and *ability* that is involved in partitioning, identifying parts and wholes and their interdependencies—in the context of contemporary political theory. Within the modern *oikos*, sheltered by a modern *nomos* (a political, not anymore divine, *nomos*), each "theme" has to be treated as a "subject" in order to find a platform for public address (newspaper, education, etc.): what once enjoyed generosity in how it was treated (or the silencing violence, or the doctrinary appropriation) attributable to *common places* (a theme as a "topos") now has to be accommodated within an overall organization, and that means its treatment (discourse) has to be surveilled and negotiated. Such a "subject," in a purely passive and nonpolitical way, is an "object" in the sense of the grammatical case of the accusative–the case of that which is "caused," that which is "called to account" and needs to be "accommodated in its proper

6 To provide domains of rationality for a certain (numerical) solution space makes sure that the roots of a polynomial with coefficients raised to the nth power can be expressed in terms of radicals according to an integral domain governed by the principle of unique factorization. Leopold Kronecker especially preferred to speak of *domains of rationality*, in distinction to the main inventor of corpus theory, Richard Dedekind. Instead of domains of rationality, Dedekind thought about the possibility to extend a numerical corpus in terms of *prime ideals*. The two stances can be seen to represent two epistemological vectors of *induction* (primary in Kronecker's empirically grounded approach), and the strange mixture that Charles Sanders Peirce–another key figure in the rise of universal algebra in the latter half of the nineteenth century–attempted to define as *abduction* that establishes the conditions of *deduction* (Dedekind's approach grounded in abstraction).

7 For a discussion of the Dedekind approach to ground corpus theory in acts of abstraction in relation to an understanding of computation and calculability, see Vera Bühlmann, "Continuing the Dedekind Legacy Today, Some Ideas Toward Architectonic Computability," (lecture, Turing 2012 Conference, Manila, Philippines, March 2012), http://www.monasandnomos.org/2012/12/05/computing-within-the-open-totality-of-anything-that-can-be-the-object-of-thought-continuing-the-dedekind-legacy/.

8 For those interested in following this line of thought toward a criticality that is local and universal, see the Jules Vuillemin's superb book, *La philosophie de l'algèbre* (Paris: PUF, 1962), especially chap. 4, "La théorie de Galois," 222–300, in relation to adjacency in mathematics, its relation to the notion of groups, and its overall entailments for Kantian and post-Kantian notions of criticality.

When related to the question of urbanity today, the notion of the villa seems to be of extreme interest once again. Villas were always related to political issues of power, signifying the power relations within certain regions. It is interesting to see that following the iconic examples representing major architectural manifestos throughout history, villas don't seem to narrate a story of progress, of growth and expansion, but rather one which mirrors again and again a time's BoT. There seems to be a certain invariant symmetry constitutive for the development of the architectural concept of villas, between outward-orientation (which we call "expression") and inward-orientation (which we call "impression"). What we find in historical comparison is that this symmetry is repeatedly being inverted in the way and manner in which villas have been designed and built, e.g., from Palladio (expressive) to Semper (impressive), to Le Corbusier (expressive) and Eisenman (impressive). Before the background of this hypothetical setup, our core question is: What is the next villa? [FIGURE 01]

As more and more of the entire planet is being urbanized, and as there is increasingly less distinction between countryside and city, it is our interest to consider the concept of the villa not in terms of a *general class of forms* of how people live in this global urbanity (homes, *Eigenheime*), but as an *abstract modularity* that needs to be articulated—rendered into instances in which it presents itself. Such articulation is achieved through partitioning the compartments that are held to be constitutive for "the villa" as an architectural concept. We regard global urbanity as the *universe* of the villa, where it "lives" as an abstract (not as a generalized) identity. What we mean by this is that instead of departing from standardized units, to which we can apply general principles of composition, we suggest to engage in elementarizing the villa's compartments in any way thinkable. Like this, the villa as an abstract modularity allows for the engendering of the particular compositions in which people live individually, in a one-of-a-kind manner.

Hence, the proposed approach could also be considered as an experiment in universalizing the notion and the principle of "the villa": we propose that to be "villa-ic" must be considered a property of the entirety of all artifacts that exist in the universe of global urbanity. In all radicality, we want to consider "villaic-ness" as a property of *anything at all*. The question then is, in what way can the notion of the villa remain a meaningful notion, if we blow it up beyond all classificatory bounds?

It is not the concrete structure of the automobile engine that is expressed but rather the form, color, shape, the accessories, and the "social standing" of the object. Here we have the tower of Babel: each item speaks its own idiom. The conservative, in choosing and using a car, wishes to convey such ideas as dignity, reserve, maturity, seriousness ... Another definite series of automotive personalities is selected by the people wanting to make known their middle-of-the-road moderation, their being fashionable ... Further along the range of personalities are the innovators and the ultramodern ... No doubt Martineau is right: it is in this way that people define themselves in relation to objects.

JEAN BAUDRILLARD

We suggest partitioning the compartments of the generic villa with reference to the activities that are suggested and supported by domestic objects. We propose to set these activities into the infinitive form (sitting, cooking, chatting, sleeping, dressing, etc.), as abstract acts which can be actualized through individual appropriation of these acts into proper activities, in free combination. Like this, the domestic objects too are infinitized, such that we can consider them beyond the delimitation of the actually objectified functionality which they embody as particular objects. We can begin to qualify the activities in which we appropriate the objects with *surplus aspects* (like pleasing, comforting, challenging, enhancing, grounding, etc.) in any way thinkable. Hence we can look at the functionality that is constitutive for an object from an inverted perspective—that of its "villa-icness." This inverted perspective allows for specifying their properties purely by indexing: *this, and not the other*. It is no longer necessary to define in positive terms what one is looking for. Instead, if we use activities as our reference level, we can include *infinitely much* into our specification, and we can invert the composition of all these constitutive and surplus aspects of an object in manifold manners. We can design by dramatization and storytelling.

01

00 « GENERIC VILLA/Manufactured objects conspicuously transform into unexpected new forms, making a strong statement about our current cultural condition of abundance. Attention is focused on a reconsideration of the ordinary.
01 Expression—Impression - Expression—Impression

THE VILLA: AN ENCAPSULATED SYMBOLIC NATURE

THE HOUSE AS A FIELD OF OPERATIONS

Within a framework of infinitary inclusion, each domestic object becomes contextualized with potentially all other objects that live in the same universe. On the symbolic level of such universality, different stories take place and become meaningful in different environments and at different locations—for example, in particular villas that one wishes to consider. They too can be regarded as domestic objects like this, as an encapsulation of symbolic stories as the dramatization in various coevolving "acts." Actual villas viewed within such a context express certain generic vectors as their own, independently told stories.

For all their multiplicity, objects are generally isolated as to their function. It is the user who is responsible for their coexistence in a functional context; their coexistence resembles an assortment of partial functions that are often irrelevant or antagonistic to one another.

JEAN BAUDRILLARD

place," i.e. categorized.[9] A theme as a subject in that sense, as one that is to be *categorized*,[10] is what is put before public assembly, because its predication is yet to be clarified. If we are to consider the integrity of those abstract objects that constitute the solution spaces in generic computations within a scale of adequacy, every commonplace interest (theme) turns into a "subject-with-dispositions-and-capacities." The new criticality at stake, a criticality of finite synthesis, concerns the symbolic constitutions—and through that, the capacities of abstract objects—that are orientating power (public address and its surveillance) in discourse.

This same abstract issue—the partitioning, the identification of parts and wholes and their interdependencies as *problematic*—features centrally, for example, in Jacques Rancière's contributions to contemporary political theory.[11] His notion of *political subjectivation*, which he developed in a 2004 essay entitled "Who Is the Subject of the Rights of Man?," is very helpful for developing an idea about what such criticality entails. "Political subjects are surplus names," he holds, "names that set out a question or a dispute (in French, *litige*) about who is included in their count."[12] For Rancière, the name of such a political subject cannot be a *proper name*, nor the name of a general class (a *noun*). It is whatever and however may qualify such a noun: the adjective of the general class of humans. Thus, the name of such political subjects can only be "generic," and as such it is, for him, the name of the *demos*.[13] Thus he refers to the *demos* in an adjectival sense, from the Latin *adjectivum*, "that which is added to (the noun)." It is in this adjectival sense that political subjects are *surplus subjects* for Rancière, a view that grants that giving a definition of the noun (humanity, in this case) is not necessary—it is barred from articulation and being spelled out and must be taken as a premise and treated approximately, just like the continuities of movements are treated in modern differential calculus.[14] Here is not the place to

9 The accusative is the grammatical case whose primary function is to express destination or goal of motion, from the Latin (*casus*) *accusativus*, "(case) of accusing," from *accusatus*, past participle of *accusare*. The Latin *accusare* means "to call to account," from *ad-*, "against," + *causari*, "give as a cause or motive," from *causa*, "reason." *Online Etymology Dictionary*, s.v. "accusative," http://www.etymonline.com/index.php?term=accusative&allowed_in_frame=0.

10 From the Greek *kategoria*, "accusation, prediction, category," verbal noun from *kategorein*, "to speak against; to accuse, assert, predicate." *Online Etymology Dictionary*, s.v. "category," http://www.etymonline.com/index.php?term=category&allowed_in_frame=0.

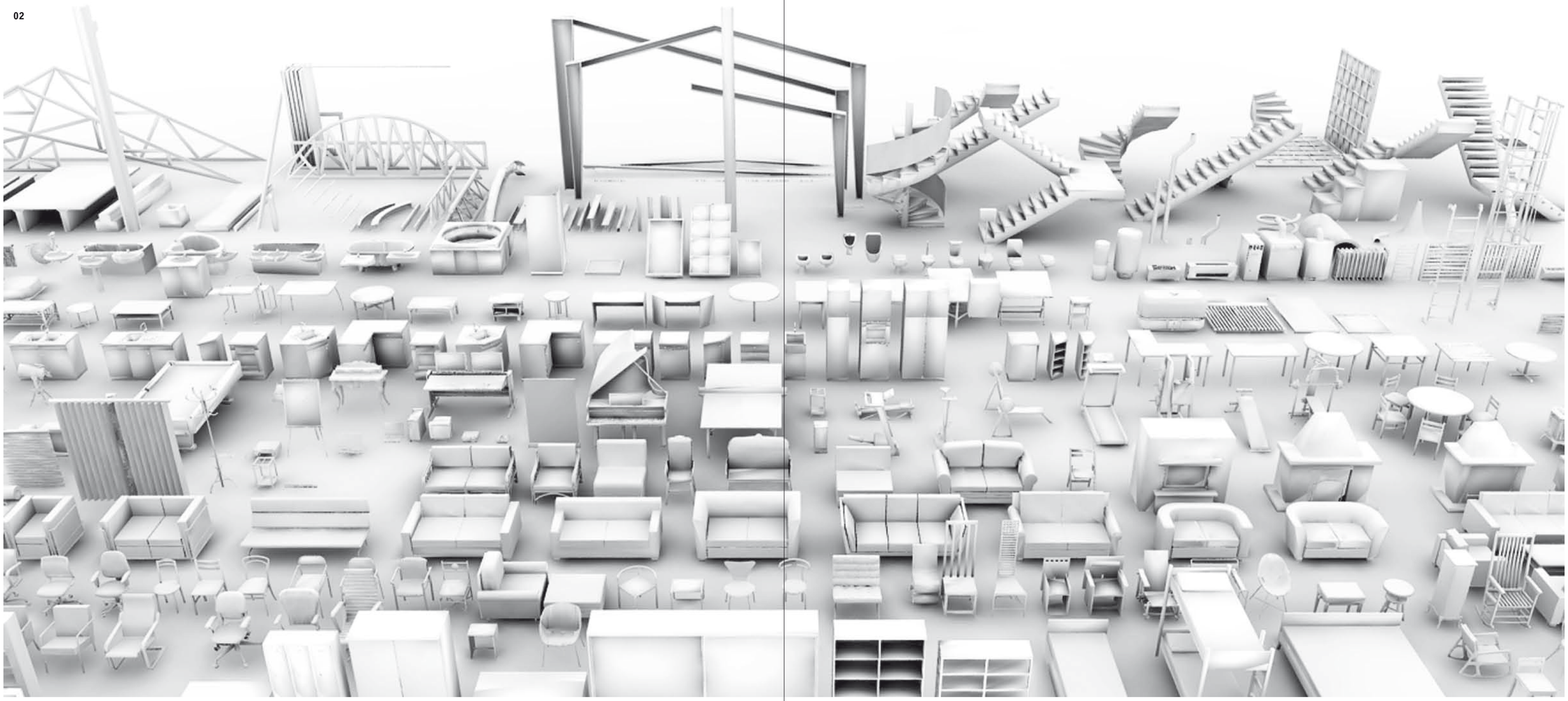
11 The way Rancière approaches and unfolds his political arguments, which center around a foundation of politics in aesthetic judgments, involves following him on an unusually high and demanding level of abstraction. Indeed, this is often one of the key points for which he is criticized—it raises people's suspicion because it is not easy to follow (in understanding, not in action!). Contrary to this view, his engagement with abstraction is precisely what exposes him within the current landscape of political theory and philosophy—which is to a large amount straightforwardly programmatic, if not outright polemic, by *not* demanding the reader to understand the abstractions at work in it. This is unfortunate because it cannot facilitate a problematic engagement with the proposed arguments, but rather demands devoted followership—the creation of "movements," by being promised (by the *authority of expertise* that is declared too difficult for the common person to understand, and hence needs to be presented in trivialized and infantilized manners) to "stand on the right side of history." See for example Slavoj Žižek, *Die bösen Geister des himmlischen Bereichs. Der linke Kampf um das 21. Jahrhundert* (Frankfurt am Main: S. Fischer, 2011).

12 Jacques Rancière, "Who Is the Subject of the Rights of Man?," *South Atlantic Quarterly* 103, nos. 2/3 (Spring/Summer 2004): 303.

13 Ibid., 306.

14 Leibniz's dictum was, famously, that *nature makes no jumps*—the assumption of uniform continuity in natural processes has been central for applying the then-new infinitesimal methods in modern science. It is needed to support all epistemological positions that consider themselves analytical-empirical. It seems to us that Rancière is opting for a similar framework as this one between *movement-continuity* (infinitesimal calculus in science) for his context, that of *political-acting-human* (aesthetic judgments in politics).

02



discuss Rancière's position in any adequate detail, yet it needs to be pointed out that our own proposition turns away from Rancière's at a certain point. By raising the issue of an *abstract object's integrity*, we propose to treat his notion of political subjects not in classificatory terms altogether, but in categorial terms. This means that we opt to regard political subjects, subjects named generically, as universal and adverbial (not as adjectival). We will come back to what this entails in more detail; for now let me simply point you to Michel Serres, who has most forcefully articulated such a perspective in his 1990 book *The Natural Contract*: "My book argues that this Declaration [the Declaration of the Rights of Man and the Citizen from the French Revolution, and its update by the declaration published by UNESCO after the Second World War] is not yet universal as long as it does not determine that all living beings and all inert objects, in short, all of Nature have in turn become legal subjects."[15]

15 Michel Serres, "Revisiting *The Natural Contract*," trans. Anne-Marie Feenberg-Dibon (lecture, Institute of the Humanities, Simon Fraser University, Vancouver, May 4, 2006), http://www.ctheory.net/articles.aspx?id=515.

Causal relations enable the functioning of the elements. These relations or recurrent causality between the forms, are constituted by the associated milieu, which mediates the relation between the elements.
GILBERT SIMONDON

Forms exist as separate entities and become active when they organize themselves in relation to the ground—the mental associated milieu, thus actualizing prior virtualities.
GILBERT SIMONDON

A bed is a bed, a chair is a chair, and there is no relationship between them so long as each serves only the function it is supposed to serve. [FIGURE 02]
JEAN BAUDRILLARD

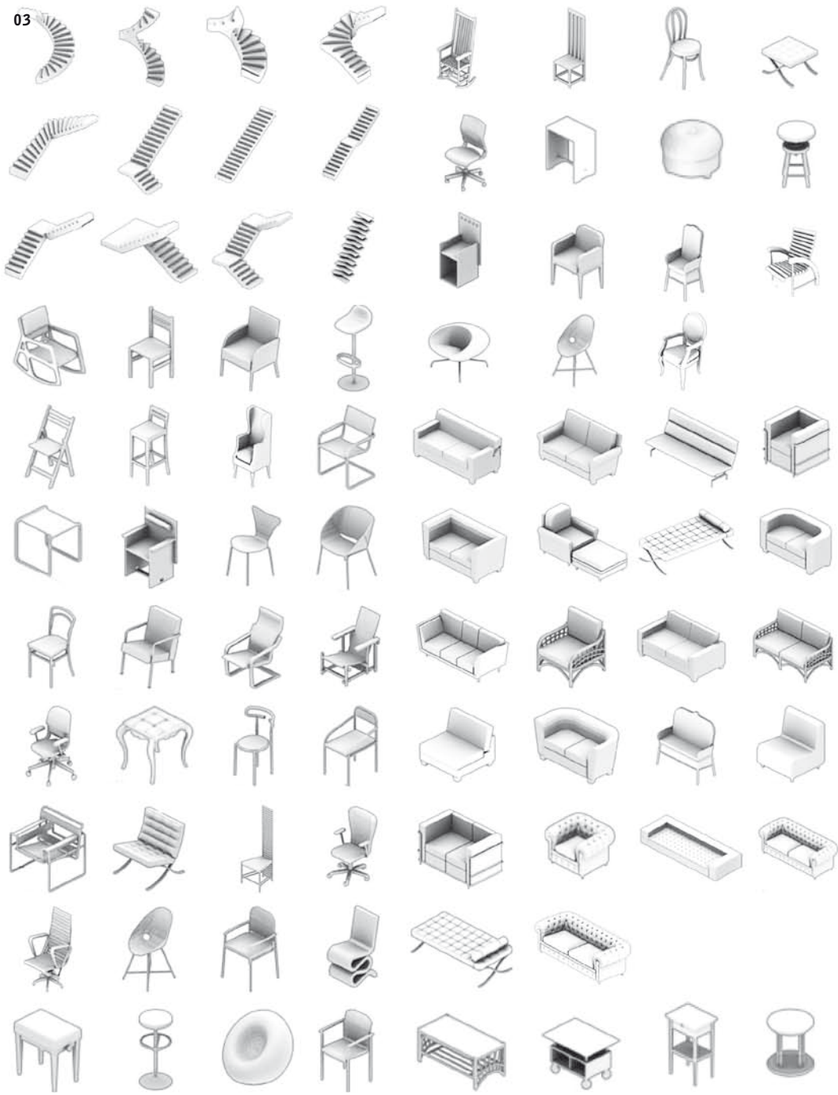
Without such a relationship there can be no space, for space exists only when it is opened up, animated, invested with rhythm and expanded by a correlation between objects and a transcendence of their functions in this new structure. In a way space is the object's true freedom. [FIGURE 03]
JEAN BAUDRILLARD

Space takes the form of relations among sites. Different renderings of geometries, attributes, activities, potentials, blend according to certain vectors. Within the framework of infinitary inclusion, new artifacts can be engendered by 'infusing' indexes into the articulated organization of compartments.

What is the Next Villa?

STORYTELLING BY ARTICULATING AND DRAMATIZING VECTORS

How can the generic villa be engendered specifically and individually by a kind of storytelling that universalizes the architectural concept of the villa into a principle, and global urbanity into an abstract universe? Such storytelling dramatizes everyday stories that are told differently by different houses. We propose that it follows a series of steps, presented here in an "infra-order" from abstraction to actualization:



16 For a contemporary contextualization of this idea see Sjoerd van Tuinen, "Difference and Speculation: Heidegger, Meillassoux and Deleuze on Sufficient Reason," in *Deleuze and Metaphysics*, eds. Alain Beaulieu, Edward Kazarian, and Julia Sushytska (Lanham, MD: Lexington Books, forthcoming).

Let's remember, our interest is in a notion of criticality that need not sacrifice the infinite, into which thought plunges, in order to gain a notion of consistency. This means that we are looking for a notion of criticality that is not grounded in a *general principle of sufficient reason*, but one, we might say, that is *governed* in the way it is foundational for discourse, by a *universal principle*: that of *finite synthesis*.[16] How can we picture such governance? The topicality of a theme that comes to be of general interest cannot be treated as an "objective fact"—precisely because as an "objective fact," it is *called into account*. What I would like to suggest to see in action, in the expansion of the generic whose instances are viewed as pre-specific, is a *universal corpo-reality*, a corpo-reality of *symbolic nature*. Thanks to its symbolic nature, such corporeality is not "the one body of the collective," as the political-state form may be interpreted, and it is not "the one soul of the people," as Rancière's notion of the *demos* seems to maintain. Nevertheless,

1. **We assume that every villa can be represented as a constellation of independent compartments, through which it narrates a certain story. Such a story is dramatized individually in the vectors that are actualized by a villa, and in the interplay between those actualized vectors.**
2. **We start out with identifying the villa's compartments by looking at how domestic objects actually organize the particular house. Like this, we engender the elementarization of the villa into its compartments.**
3. **We look for stories in the daily used domestic objects. We regard them as pre-functional and begin to overlay and densify these objects in their interplay and meaningful articulations/constellations. We virtually dissolve domestic objects beyond the manifest functionality they embody as objects. The objects turn into platform-like formations carrying certain potential activities.**
4. **On the dissolved grounds of this activity-based reference plane, species of domestic objects can be designed by including surplus indexes into the reference plane. Such engendered species of domestic objects are of a "villa-ic" nature.**
5. **The generic villa is engendered specifically and individually, and consists of artifacts that incorporate globally-urban infra-functional structure-abilities. These artifacts spell out singular instances of the generic villa.**

02 « We elementarize up to the degree that the object can function as an individual.
03 The object loses its objective functionality and becomes a body of indexes carrying a certain potential activity.

it is political. It binds, as symbolic corporeality, in lofty and contingent manner, what Rancière conceives as *dissensus*: "This is what I call a dissensus: putting two worlds in one and the same world. A political subject, as I understand it, is a capacity for staging such scenes of dissensus."[17] A dissensus for Rancière, as for us, is not a conflict of interests, opinions, or values; it is, as he puts it, "a division put in the 'common sense': a dispute about what is given, about the frame within which we see something as given."[18]

What names political subjectivity understood as such must be generic, we can agree with Rancière. But if we understand it as categorial, as an adverb of universality and not as an adjective of a particular natural class, it does not name mankind in terms of *demos*, it names nature itself. The change is profound: both approaches opt for confounding the distinction between politics and nature, but Rancière's classificatory treatment of the generic name places us within a *naturalness of politics*, while the categorial treatment of it confronts us with a *politicality of nature*. Everything among which we live—facts and laws, artifacts and things, elements and climate, codes and rules—appear under their proper natality aspect. Such a politicality of nature puts a *dimensionality* of genuineness in the *place* of points of origin and hereditary lineage. More precisely, it suggests treating

17 Rancière, "Who Is the Subject of the Rights of Man?," 304.

18 Ibid.

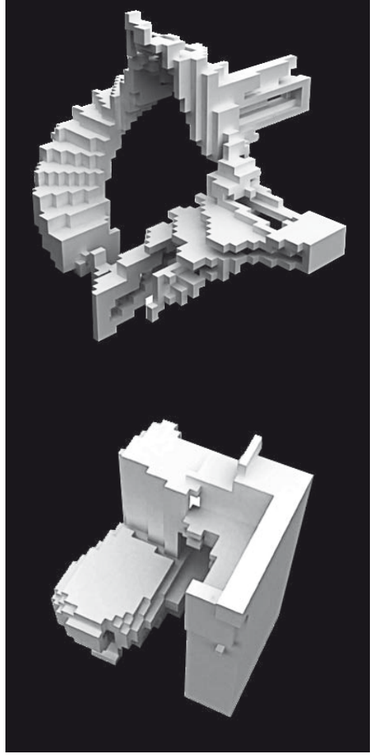
19 Ibid., 305.

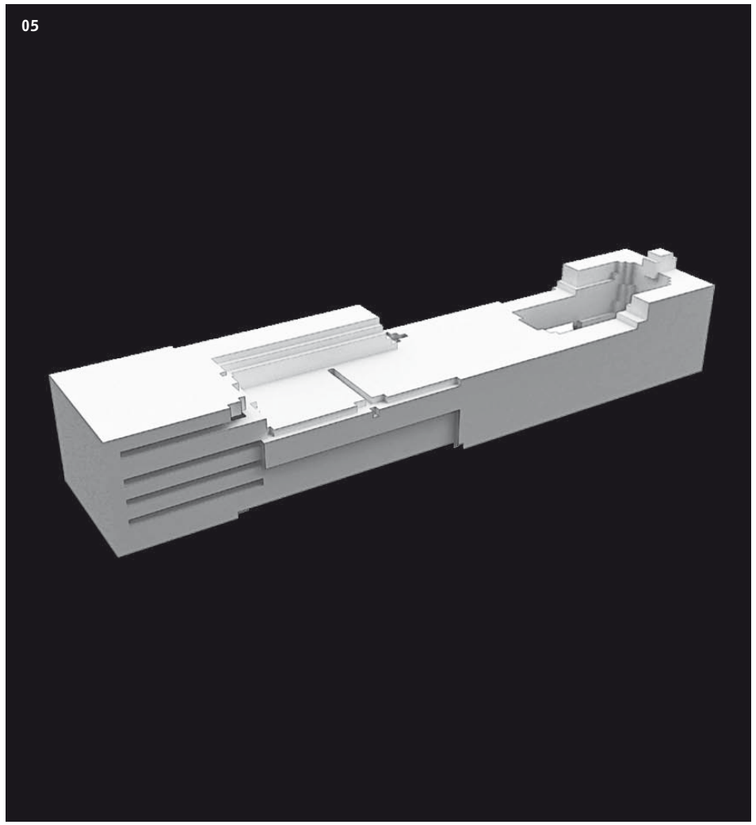
20 Ibid.

21 See footnote 11. This is what distinguishes Rancière's approach from those that demand followership by *faithful devotion (of the illiterate)* rather than *critical subscription (by the literate)*, with the effect that his arguments hardly lend themselves to creating a movement that will realize a political program.

questions of origin and lineage by recourse to *distributiveness*. Such a dimensionality of distributed politicality adds the modality of probability to those of possibility and necessity, which govern in rationalist philosophy anything that extends in space and in time. Hence the political is not a sphere, both our views agree; rather, it separates, as Rancière puts it, "the whole of the community from itself."[19] The political, for both views, shapes the gap between abstract literalness and the conditionality of possible verification of what is meant by abstract literalness. Such a *politics of difference* is acted out, according to Rancière, by distinguishing two "counts of counting" the community: "You can count the community as the sum of its parts—of its groups and of the qualifications that each of them bears." This way of counting is entirely rule based and uninvolved, and it results in cold observation and surveillance according to a *logics* of classification (Rancière calls it "police"). He puts a second way of counting as follows: "You can count a supplement to the sum, a part of those who have no part, which separates the community from its parts, places, functions, and qualifications."[20] To Rancière, only this second "counts of counting" is politics, and such counting is not uninvolved, it is acted out by political subjects, and it does not submit to rules in any mechanical manner.[21] Its procedures are infinitary,

04





THE NEXT VILLA: AN INHABITABLE ARTIFACT

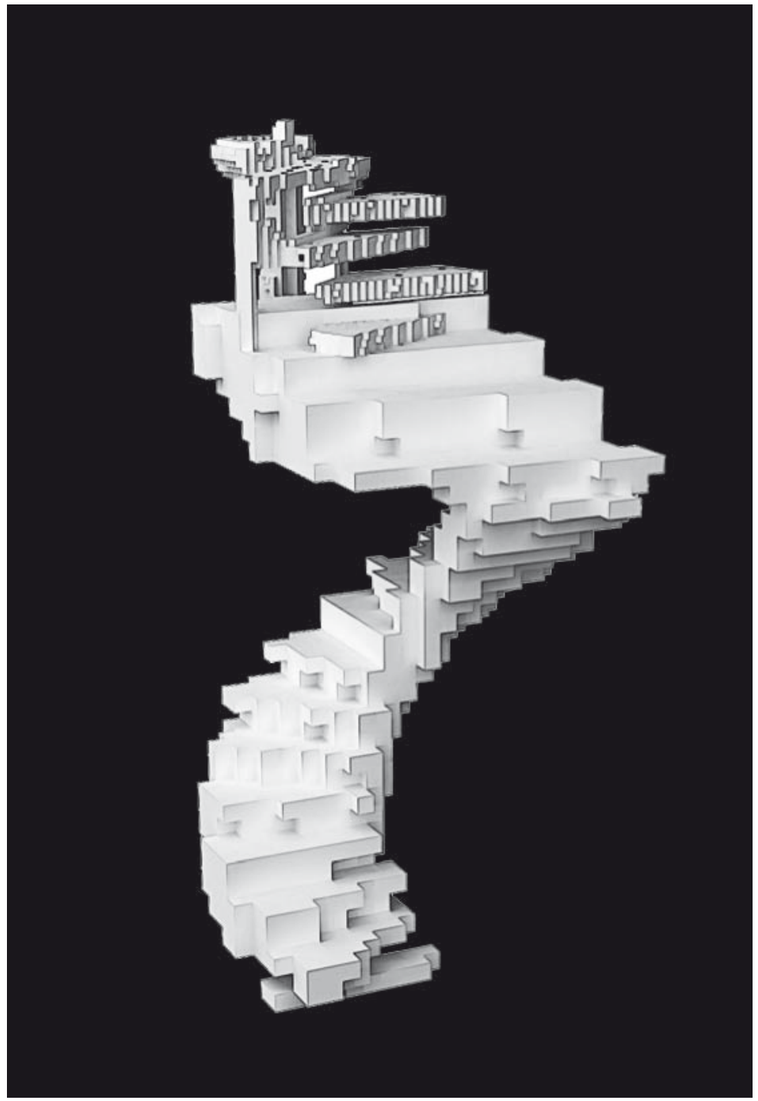
In this experimental approach of architectural design, the following technical tools are explored and applied:

APPLYING PRINCIPAL COMPONENT ANALYSIS

The codes of Principal Component Analysis (PCA) are used as the main tool. Initially, we select floorplans from twentieth-century villas as input data. The data of these floorplans are related to a domestic object as their common point of reference, and the abstract data space is set up through placing them in relative position to each other. To this setup, we apply PCA. The output achieved is a number of EigenFloorplans, equal to the number of input floorplans. The differences between the EigenFloorplans depend upon which input floorplan is defined as the "first principal component." In that way, different focal points define the overall setup of these arrangements, and rearrange all the included constellations and—consequently—all the stories that can possibly be narrated. Since all floorplans are projected to an abstract and many-dimensional coordinate system that takes the properties of all input floorplans as its coordinates, each one of them potentially gains new meaning and content. At this stage the EigenFloorplans express new constellations of values and unforeseen stories.

In a second step, from a potentially infinite number of EigenFloorplans, certain constellations are selected and rendered in three-dimensional models. The main purpose of this is to create models of real (three-dimensional) hybrids that encapsulate a qualitative variety of different stories. As physical objects, these modeled hybrids extend within the boundaries of three dimensions; but as qualified artifacts, they embody a much higher dimensionality. This high dimensionality is achieved by fusing the input data (the individualized internal compartments, in this case extracted from the floorplans) in a series of generations. Different kinds of qualitative geometries (always within a same 3-D bounding space) merge together and synthesize new articulations, of which each contains a particular distribution of weights (percentages) of the vectors of the input data.

This process could also be referred to as "doping" the original setup after having rendered it generic. We select and exclude indexes from the frame of infinitary inclusion, and through this, new architectural, formal, and functional qualities can be excited from within the original setup. The simple rule we follow: compose all the functional compartments in a manifold way and get their common EigenVector, and this EigenVector once again serves to root—that is, to host virtually—the entire previous stage.



04 First generation
05 Second generation
06 » Third generation

as opposed to the finitary way of counting by summation (that of his notion of "police"). His usage of "counting" consciously evokes that mathematical practice in its irreducibly intertwined double sense of accounting and governing. Such politicized counting, which affirms to count in infinitary values as supplements to each totalizing "sum," follows in Rancière what might be called a *materialist aesthetics* of classification (not a *formalist logics* of classification). We can see now where the naturalization of politics happens in Rancière's position: his politics of difference is acted out in a twofold manner, by the police and by political subjects. Thereby, responsibility is delegated to one side only—that of political subjects, while the police is treated almost like we treat the weather: as the quasi-material incarnation of necessities whose constraints are determined on a more abstract level (climate), but that we have to deal with for bringing both rhythm and chaos, fertility and destruction, homogeneous and disrupted growth, prosperity and corruption.

Beyond urban comfort, in a state of expulsion

In order to see more clearly what is at stake with a categorial treatment of what names political subjects, in distinction to a classificatory one, let us briefly consider what seems

22 Ibid., 309.

23 Ibid.

to be an important motive for Rancière and his classificatory treatment. Toward the end of his text he clearly states that he sees a certain contemporary tendency intervening toward the "erasure of the political in the couple of consensual policy and humanitarian police,"[22] a tendency he sees threatening to turn what used to be *political activity* into "an anthropological or ontological destiny."[23] Political correctness, administrated by discourse, perfidiously urges us to be "passive" if we want to be politically "active." His aesthetics of classification is geared against such false "political correctness," which in effect hands over the legacy of political thought and action to some larger power that predicates us as Subjects of Rights. This "larger power," obviously, manifests in the process of progressive rising levels of welfare, which unfolds on a global scale, albeit in unequal manners and paces. Rancière seems to ask, what if we dared to turn our backs to this urbanity that is spreading globally, propelled by its promise of quasi-salvational comforts, and that tends to erase all politics in the manner mentioned? He does not seem to seek to somehow "overturn" the system, nor to fight for more global justice; rather he seems to ask, can there be an exodus, can we not learn to cultivate differently the grounds on which we would happen to find ourselves, if we affirmed to

TECHNICAL STEPS: THE CODING PROCESS

The overall procedure in which the coding process consists is called an EigenTransformation. We arrange certain setups of a specific constellation and calculate their EigenVectors such that the constellation can be defined as an EigenFloorplan. This is achieved by placing a number of unprocessed input data according to the EigenVector in a single bounding box, by using a 3D modeling software (in this case Rhino).

In technical terms, the whole process follows the steps given in an infra-order (from abstract to actual) below:

1. **Voxelizing. We convert the input geometries to voxelized geometries, and thereby achieve one-dimensional numerical array lists. This is necessary in order to calculate the EigenVectors of a constellation, as the code procedure requires all the input data in the form of one-dimensional numerical array lists.**
   code: _001_VOXELIZING
2. **Weighting. We extract the exact values that display the original geometry as a setup for EigenTransformations.**
   code: _002_WEIGHTS
3. **Applying EigenTransformations. We apply such transformations to the original geometries according to certain controllable attractors: We define areas of 100 percent representation of original geometries, and areas of blending between them. The output geometry is rendered directly as a voxelized one.**
   code: _003_EIGEN_TRANSFORMATION_Z

By looping and repeating these steps, we produce generations of the original geometry, and we can achieve an increase in dimensionality for every new EigenGeometry computed. Each "generational geometry" can be treated with new unprocessed input data, or other already computed EigenGeometries. Following these steps, we can engender an infinite number of generations out of a whole universe of potential artifacts—resulting in what we might call a combinatorial endlessness of populations of instances. The geometries displayed here are just a small number of the vast amount of examples that could be extracted.

IMPRESSION-IMAGE, TO SYNTHESIZE NEW CONTENT

The artifacts engendered like this incorporate a rich diffusion of function-ability, in a manner that feels like surreal coherence. The objects lose their symbolic naturalness and order, and they achieve a higher degree of abstractness which allows them to experiment with their own functionality.

This experimenting results in the definition of an EigenVector which comprehends all the symbolic activities, and which can be used to articulate an instance of the generic villa to formulate an inhabitable artifact, engendered by doping original geometries. [FIGURES 04–07]

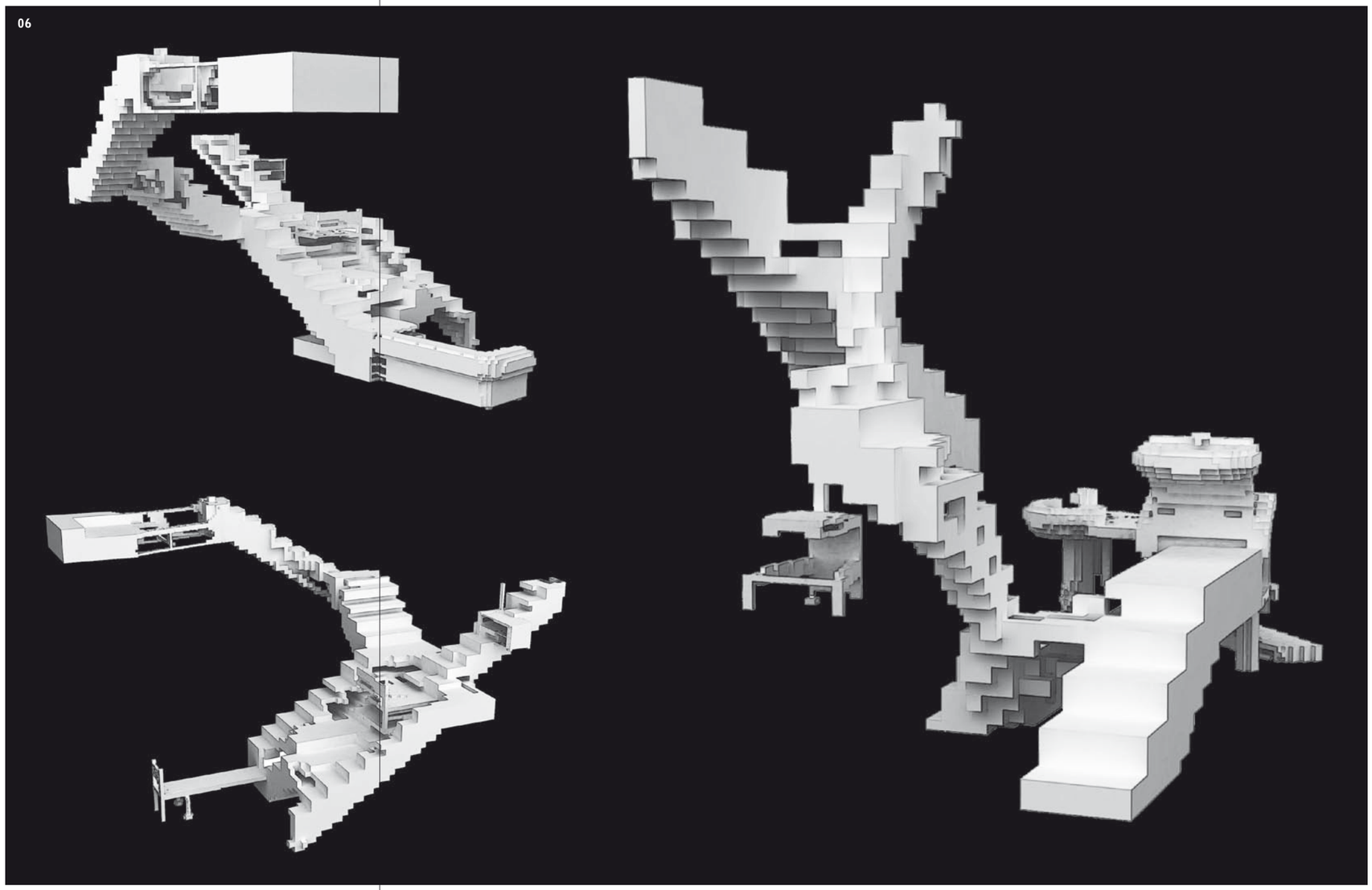
The inhabitable artifact consists in a system of signification, but it lacks an active syntax. It has the simplicity and effectiveness that is proper to code. It formalizes a universal system of statuses. Thus, the inhabitable artifact offers an abundance of electable activities that can be appropriated with its support. Everything is there, but nothing is defined. All we have is suggestive delineations: certain symbols, as parts of the initial inputs, specify possible activities for certain areas.

This experimental approach of architectural design proposes to build on the grounds of activities, as they are commonly and possibly performed in urban spaces. It seeks to translate the increasingly differentiated dimensionality in which we engage in our activities into architectural expressions that allow developing novel ways of dealing and inhabiting the places where we live.

No more beds for lying in, no more chairs for sitting at.
JEAN BAUDRILLARD

—instead: artifacts that comprehend any position and hence any human relationship!

06



live in a state of expulsion? Can we not begin to oppose the *auto-logy* of such destiny by producing the means we need, in order to remain active political subjects, through a kind of "farming" that learns to root that for whose growth it cares, in—to use his own formulation of how political subjects "count"— the infinity of a sublime object, the object of aesthetic judgment, which virtually *supplements each sum*?

Rancière suggests a kind of *aesthetic calculus* rather than a logical one. It is aesthetic because its functions map procedures in a twofold manner: by numbers that label the sums of infinite terms, yet these labels are merely indexes, pointers.[24] Such an aesthetic calculus is "genetic," its functions are productive; they do not merely represent a process, they initiate its enactment. Such is the involvement and activity that Rancière holds necessary for *counting as political subjects*. It is not an activity that *fights* what is counted in a police manner, but one that *has decoupled* from such counting and instead regards it as a quasi-weather, as temporary states that are imposing certain conditions with which we have to deal, if we were to hold that it is not entirely unthinkable *to begin again*: by affirming to live in a state of expulsion from the secular urbanization of modernity, which used to be like a promised land but turned out to sentence its "subjects"

24 It is important to see the difference of an *aesthetic calculus to phenomenology* and *semiology*—both of these attempt to supplement calculus with either a general theory of signs, or with perception. An aesthetic calculus, on the other hand, does not keep a notion of calculus as distinct from one such supposedly more general theory. It stresses that the notion of calculus cannot remain untouched if we want to avoid sacrificing the openness of the infinite. Thus, I describe its labels in the conventions of symbolisms as indexes and pointers (codes), and not as signs, etc.

25 Michel Foucault, "Les hétérotopies," *Radio France*, December 7, 1966; here cited and translated from Foucault, *Die Heterotopien. Der utopische Körper* (Frankfurt am Main: Suhrkamp, 2013), 39.

26 See Michel Foucault, "Le corps utopique," *Radio France*, December 21, 1966; here cited and translated from ibid., 55–65.

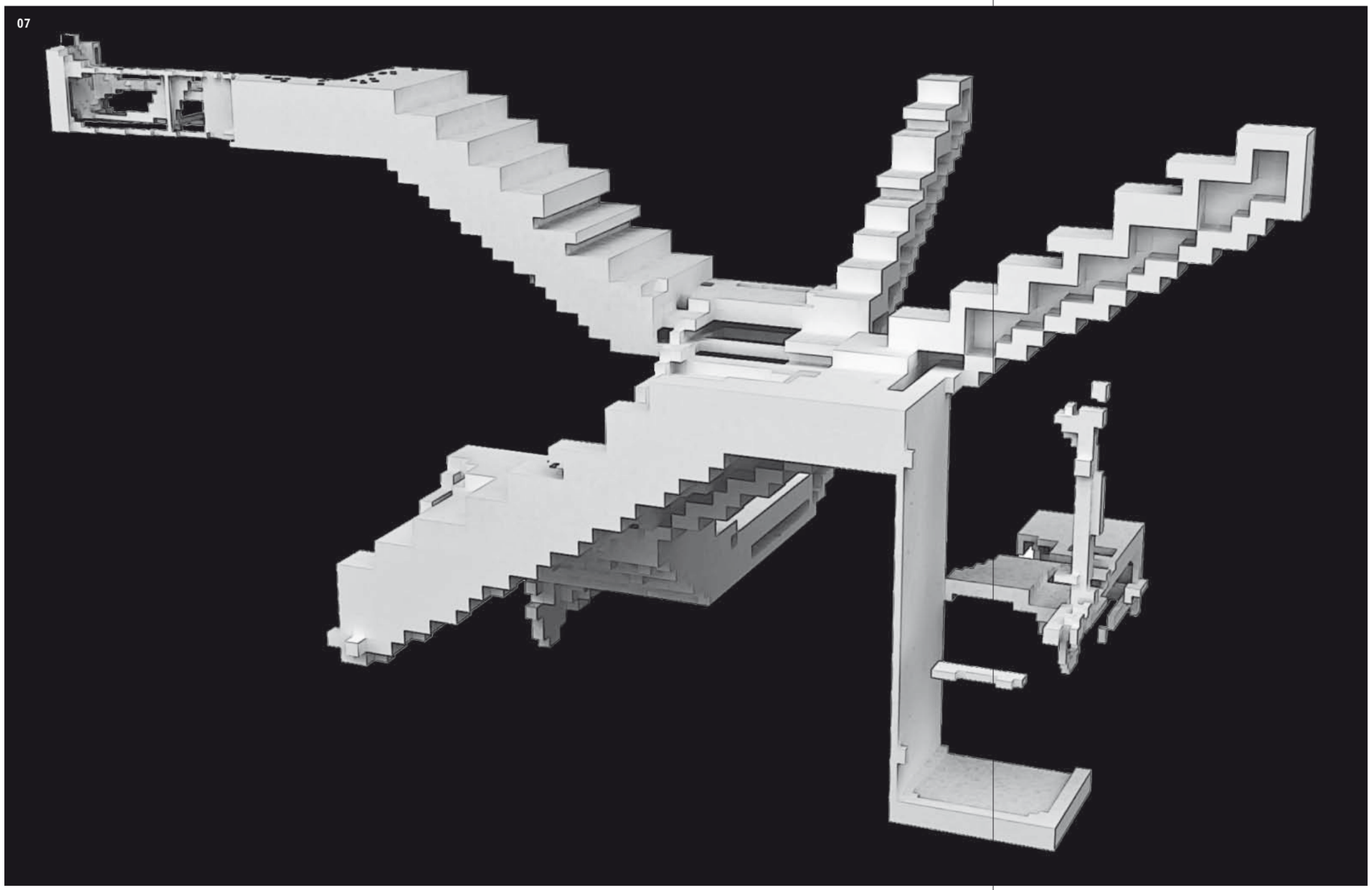
to the status of "consumers," allowed to "do politics" in terms of "correctness" that is policed by a kind of counting that builds on a logic of classification that deprives the individual of holding her aesthetic judgments as "naturally legitimate."

Generic as an adverb, universality as an oeuvre

In all of this our own views would agree. But what is entailed now with opting for a *categorial* rather than a *classificatory* approach? How can we picture what a philosophical stance of "critical rationality" would entail, a rationalism that is coupled with a notion of *critique-ability*, a notion of critique in the terms of an ability that revolves around a symbolic understanding of numbers? What would it entail to stick with Rancière's operative distinction of two "counts of counting," while transposing them onto a stage set such that the *generic name* acts as a universal name, adverbial not adjectival, a stage on which it articulates and spells out the oeuvre that produces nature? In all figurative brevity, it does not characterize life in such a state of expulsion as the life of farmers, but as that of gardeners. It is not the material grounds of a new existence, generic and singular (politics anchored in aesthetics) instead of comfortable and general (global urbanity), that needs to be cultivated, but the intellectual grounds of heterotopia, common places (topoi) that are *nowhere there*, but nevertheless real. Heterotopias are the kind of sites that have consistency not *despite* but *because* they are distributed, they are "continents, cities, planets, universes," as Michel Foucault imagines, that are engendered "in the heads of people from the in-between of their words, from within the deep layers of their stories and also from the place-less site of their dreams, the void in their hearts."[25] If heterotopias are *nowhere there*, which we take from Foucault's idea, it is because they are always already *here*. As utopian in the literal sense, a place that has no place, heterotopias spring forth from the non-places of the immediacy of a present we live through our bodies.[26]

Thus we would suggest that the universality named by Rancière's notion of the political subject, once thinking about its generic name as adverbial rather than adjectival, instantiates as *bodies-to-think-in*. A particular body-to-think-in is one of a kind, and its kind is what I mean with symbolic corporeality. We can look at the universal as an oeuvre, at work in the symbolic contracts that household the energy from which it lives, as nature. Hence it is true that the symbolic is vested toward establishing *consensus*—for Rancière the negative of dissensus, and according to his dialectical thought, the death of politics—but it does this as a means to make room for staging scenes of dissensus. The symbolic is neither political nor doctrinaire, it is *operative*, and only in a derivative sense is it *functional*. It is "at work" indefinitely, never as a process that begins and ends. It creates the capacities proper to generic conditions of transformability, and it insists that these conditions

07



07 Third generation

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be universal while at the same time having actuality only as local instantiations. We can see formulas or equations as the symbolic "form" such *adverbial contracts* take. What I would like to suggest is that they open up and cultivate an interval for the political subjectivization of *any identity*, just as Rancière claims for what-is-being-named-by-the-*demos* (he speaks only of political names and political subjects, not of political identities). Nature's politicality dimension constitutes, in its principle expropriation of particulars from their individual genuineness (generic means to expropriate all individuality from specificity), the *non-possessable* disposition for staging scenes of dissensus. Things have a genuineness, they have a nature, but it is symbolic and rooted in an elementary distributedness rather than in an individuality.

The unsettling aspect about understanding the symbolic in such terms is, of course, that it may be instrumentalized in both directions—politics and/or doctrine. There can almost be no better characterization than Rancière's own of what kind of subject is named thereby[27]—cases whose kinship is unsettled: "Political names are litigious names," he writes, "names whose extension and comprehension are uncertain and which open for that reason the space of a test or verification."[28] For him, political names name political subjects in such a manner, and this is how they are capable of reorganizing "the frame within which we see something as given."[29]

I am aware that suggesting to see identity that can be expressed by a formula or equation in the same terms that Rancière finds for political subjects might strike one as a gross misunderstanding–isn't the solution space for a symbolic form determined in absolutely *certain* ways, not in *uncertain ways*? On which grounds can we speak of such a politicality that belongs to nature, and of which we claim a universality that allows to characterize the abstract objects of symbolic computation in terms of their particular integrity? I briefly pointed to the importance of how we think about solution spaces when I introduced the notion of adjacency in mathematical corpus theory. Let us see in more detail how this is exactly what was at stake with the emergence of universal algebra throughout the nineteenth century, and how we are confronted today with its entailments.

Bodies of thinking live in algebraic universality

> *Let us to try to make sense of the sentence–or develop the equation.*
> Jacques Rancière

Computing with the symbolic means of algebra has added a new dimension to mathematics: the input of certain values in a formula may not only turn out to be unsolvable, it may also yield a solution space that is so vast in options that none of the possible solutions seem more necessary than any other. This was indeed the key critique of George Boole's *Algebra of Logics*, which is illustratively expressed in an open letter by one of his contemporaries:

> The disadvantage of Professor Boole's method is [...] he takes a general indeterminate problem, applies to it particular assumptions not definitely stated in his book, but which may be shown, as I have done, to be implied in his method, and with these assumptions solves it; that is to say, *he solves a particular determinate case of an indeterminate problem, while his book may mislead the reader by making him suppose that it is the general problem which is being treated of*. The question arises, is the particular case thus solved a peculiarly valuable one, or one more worthy than any other of being solved? It is clearly not an assumption that must in all cases be true; nor is it one which, without knowing the connexion among the simple events, we can suppose more likely than any other to represent that connexion.[30]

Boole's methods were not shown to be faulty or inconsistent—the reason why they had been disliked or even spurned by so many was the immense depth of horizon they had opened up. Indeed, Theodore Hailperin has, in a relatively recent paper, explained how Boole's ideas make sense only if we read them in relation to algebraic concepts like ring, module, and domains, concepts that had, in his time, been far from digested and settled, not even on a methodological level, and certainly not on a philosophical level. I will come back to this in a later part of the paper. These preliminary indications are merely meant to induce some confidence in my postulation of the generic as constituting a kind of *symbolic corporeality* whose singular instances manifest as particular *bodies-to-think-in*, and my speculation about what such a postulate might entail for thinking about computability. The most important aspect is that such bodies-to-think-in are collectively constituted—before they can be acquired individually. Yet this collective

27 Although he would, by what I can understand from his own *programmatically political* commitments—which he keeps respectfully separate from his *philosophically political* commitments, as I have argued before (see footnote 11)—not at all agree with my proposed application of his concept in the context proposed here.

28 Rancière, "Who Is the Subject of the Rights of Man?," 304.

29 Ibid.

30 Letter by Henry Wilbraham, published in the supplement to *The Philosophical Magazine* 7 (June 1854); emphasis mine. Cited in Rod Grow, "George Boole and the Development of Probability Theory," http://mathsci.ucd.ie/~rodgow/boole1.pdf. See also Theodore Hailperin, "Boolean Algebra Is Not Boole's Algebra," *Mathematics Magazine* 54, no. 4 (September 1981): 172–84; Walter Carnielli, "Polynomizing: Logic Inference in Polynomial Format and the Legacy of Boole," http://www.cle.unicamp.br/principal/grupoglta/Thematic-Consrel-FAPESP/Report-02-2007/C07.pdf; and Stanley Burris, "The Laws of Boole's Thought," http://www.math.uwaterloo.ca/~snburris/htdocs/MYWORKS/PREPRINTS/aboole.pdf.

31 There is, for example, an extremely interesting history regarding the status of grammatical cases. All throughout the centuries, the disputes of the grammarians centered around how cases can be accounted for: cases express all kinds of relations—there are languages still today that have more than twenty distinct cases that differentiate the most common ones: nominative, dative, genitive, and accusative—and the question of how we can account for them involves assumptions about causality. There are two main positions for which different schools have opted: a *casus* is "what has fallen off" something, literally; that's how it is caused. The common understanding today seems to hold that the case of the nominative is somehow different from all the other cases, and that the latter are indeed what falls off from the nominative—a view that puts the noun in a grammatically central position. Yet since the earliest grammarians, another view holds that the nominative case is like all the others, and that it marks the imprints of activities that are happening with some degree of regularity—activities that happen in repetitive manners. According to this view, verbs in infinitive form are marked out as central for identifying syntactic units in language, not nouns. It is easily transparent how two views entail profound metaphysical implications. See the classic 1874 book by Heinrich Hübschmann, *Zur Casuslehre*; and Louis Hjelmslev, *La catégorie des cas* (Munich: Wilhelm Fink Verlag, 1972).

32 This is of course not really true; in fact, what characterizes late scholastic philosophy is precisely a forceful dispute around the claim, raised by some scholars, that we ought to assume a reality distinct from that of concrete particular or individual things, and proper purely to the universal. It was called the *problem of universals*, and to liberate thought from the kind of dogmatism that could be attached to such a notion of reality was surely one of the great moving forces behind the break of the Renaissance. Universals constitute every notion of "pure reason"—against which Descartes brought forward a new analytical method linked to an attitude of "fundamental skepticism," and with which Kant, a bit later on, sought to reconcile a certain legitimacy for speculation with the Cartesian "method of doubt" in his *Critique of Pure Reason* (1781).

constitution is realized only *through* the individual acquisition of the bodies-to-think-in. The agility they are capable of relies upon individuals who learn to inhabit what has been collectively achieved; they turn lonely and clunky otherwise. We can think of such bodies-to-think-in perhaps best as literacies: we can see the *canonical corpus* of authoritative knowledge turning into bodies-to-think-in, animated and vibrantly present in a manifold manner, according to the breadth and articulacy in which these corpora are inhabited. Does such inhabitation not point us toward the possibility of affirming mastery in a different manner than that of domination, dependency, and exploitation? Does it not announce a revival of other aspects proper to mastership, like generosity, care, and commitment? To *inhabit* politically such a canonical corpus requires the act of appropriation as we know it from learning-to-become-literate: not only in the sense of writing and reading *correct* sentences, but finding *apt* forms for one's words, and *apt* expressions for one's thoughts.

Let us return from these preliminary remarks, and from viewing computability within the paradigms of programming, back to computational design more strictly. Here we can see in architecture, for example, how the first wave of this fascination with the generic raised an interest in *form finding* as opposed to *giving form*, or *deciding about form*. By now, this first wave has given way to an interest in developing the *parametric conditions* from which such forms can be found. Yet along with this comes a certain complication with regard to seeing in the generic a kind of genuineness that would liberate us from troubles associated with individual authorship and mastership. In the light of parametricism as a new paradigm in computational modeling, it becomes much more transparent that, indeed, the one-of-a-kind particularity attributed to instances of such abstract objects is neither *example* nor *prototype*, but that there is a "suchness" to the "thisness" of their instantiations nevertheless, and that despite the engendering of its hylomorphic identity (its form and content) through mere tentativeness (purely indexical, without a decision of how to interlink the dots into a figure), these instances are *conditioned*. Technically speaking, they are conditioned by a master model whose *instance* they are. Theoretically speaking, the form of organization and government proper to a master model (you can think of the intra-specularly governed domains mentioned earlier in relation to the integrity of abstract objects) may well be *singular*, yet they are *not absolute*—simply for the reason that there is an open range of manners in which each and every one of them could be set up. Or to put it differently: we may well be dealing with absolutes when we deal with such abstract objects, yet they are absolutes whose symbolic nature tells us that there always are alternatives to be considered.

Characterizations of the subject of the generic

Characterization on a grammatical level

Against our suggestion to read the generic in an adverbial sense, the "grammatical common sense" (if indeed there is such a thing) today maintains that the generic be the adjectival form for referring to a genus that can be represented by the formal notion of a class. There are many ways of how this could be explained,[31] but the most important one seems to involve a strange "metaphysical competitiveness" between the notions of genericness and universality. Traditionally, any one *genus* could never count as universal, because its role is descriptive and representational in relation to concrete things that in reality are always individual, and whose collective nature the genus is to determine. Universality, on the other hand, has traditionally been attributed to *categorial* determination, of which it is clear that it is a genuine abstraction (however we might think about the nature of abstraction). No one would seek a "position in space" or "quality (per se)" as a concrete instance of it existing![32] Categories were held to be universal, and they were what concrete things would instantiate. This is how the universal comprehends, literally, *that which is the property of all things*.

It seems hardly an exaggeration to see in the conflation of this distinction, between classes and categories, the key aspiration for modernist political philosophy. In its striving to rid philosophy and science from metaphysics and theology, it sought to overcome orders of supposedly natural kinds and their rigid class distinctions. The challenge was, and still is today, to find a way of "attaching" the universality proper to categories of abstract criteria to the notion of class that can be formed according to concrete marks of distinction. The quest for a *universal subject*, a *universal object*, or even a notion of *universal reality*, must try—if it wants to be *critical* and not *dogmatic*—to identify a notion of *universal class*. A universal class would be a class that

acts genuinely without self-interest, and *in the interest of all*. Or to put it differently, more adequately but also more difficultly: the universal class would be the class where self-interested action coincides with the needs of humanity as a whole.[33]

The man without qualities (Robert Musil)

Robert Musil famously wrote a novel of a man whom he portrayed in the light of such an essential abstinence from desiring individual property, as the man who aspires to be, tautologically, nothing but *a* man (*Der Mann ohne Eigenschaften*, 1930–32). The novel accounts the struggles its protagonist has to take upon himself: as a character with a life of his own, Ulrich is faced with this task as a sheer impossibility. He tries to find meaning for his life under the condition of resigning from any possibilities offered to him by the particular class to which he happens to belong—in his case as an intellectual, a mathematician by education, that of the bourgeoisie. In vain attempts to reconcile "soul and exactitude," his vocation and his profession, he searches for a place and role purely within the "universal class of mankind"—that is, by refusing to accept any privileges that might be granted to him on the basis of his particular individuality-within-the-actuality-of-the-social. Musil's novel is appreciated widely for its capacity to express and thematize in most subtle and differentiated ways a widely shared mood of the zeitgeist of his time, and counts today as one of the most influential books of the twentieth century.

The city without identity (Rem Koolhaas)

More recently, the architect Rem Koolhaas has taken up this Musilian theme, yet now in relation to cities instead of an individual person. The *Generic City* gives the portrait of a city in the light of *having done away* with all that Musil's protagonist still tried, in vain, to reconcile for himself—in short, identity, property, history, the entire inheritance from a premodern era with which an individual has been equipped "to-begin-and-continue-with-itself"; in short, to lead a proper life, a life of one's own (to pick up a wording coined by Virginia Woolf in her seminal 1924 essay "A Room of One's Own"). The Generic City confronts us with an account of the peculiar realism of the generic; there is neither identity nor history nor property in the Generic City. Consequentially, the Generic City establishes its order in purely infrastructural, systematic, and continuous terms. There is singularity in the Generic City as he portrays it, yet it is a singularity that is liberated from the standardized. Rather than incorporating a cosmic, cosmological, or otherwise transcendent order, the Generic City provides settlement within what Koolhaas in all consequentiality calls *Junkspace*: preempted from ever manifesting something of substance—something that would have to be conceived of in how it maintains its own finite continuation—such space is only there to ultimately be disposed of. All reason for categorization is annihilated in it. In Junkspace, order must not be wrested from chaos. Instead, one-of-a-kind particularity (which he calls "the picturesque") is wrested from the homogenized.

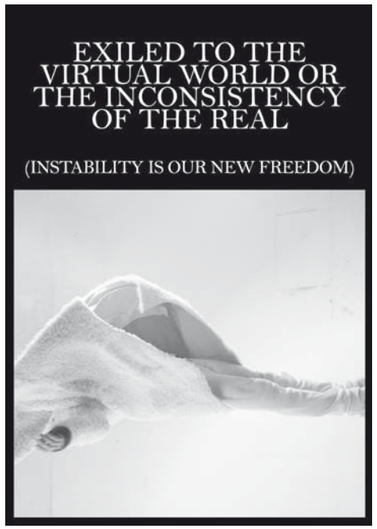
33 What haunts modernity, and thereby hinders it to continue with itself on its own terms, is the idea of a natural reality, one capable of hosting a notion of universal commonality. Still today we can read much of contemporary political philosophy through the lens of how a universal subjectivity might be conceived—from this point of view, even very contemporary contributions to political discourse root back rather directly to Hegel's suggestion of understanding *bureaucracy* as such a universal class that serves all, without self-interest, and to the Marxian totalization of this idea by seeing in the universal class the *proletariat*: from Laclau and Mouffe's dialectical affirmation of the political as a condition of *competing hegemony* to Hardt and Negri's *Multitude* as the political subject of the New World Order they postulate, Badiou's and Žižek's ideas about how to conceive, in secular terms, of an abstract persona *whose voice is to matter most* (Žižek's Lacanian-Hegelian *master discourse*, and in the case of Badiou, his *set-theoretically constituted mathematical ontology*) to Agamben and Virno's interest in personifying abstractly the (Marxian) concept of a *general intellect*.

DIANA ALVAREZ

EXILED TO THE VIRTUAL WORLD OR THE INCONSISTENCY OF THE REAL

(INSTABILITY IS OUR NEW FREEDOM)

Unsurprisingly, the reception of Koolhaas's portrait of the Generic City is quite different from that of Musil's theme-opening novel. Bluntly speaking, it tends to be perceived as a bothering impertinence. Its clinical viewpoint and the somewhat drastic (and also, arguably, resigned and sarcastic) tonality is often taken for the cynicism of a global architect who portrays, with a certain braveness, it must be admitted, a threatening development that he contributes to and lives from: the drastic homogenization of our living environments. For many people it seems clear that the homogenization he portrays is an effect of the global expansion of capitalist economy and a respectively Darwinian survival-of-the-fittest dynamics that goes along with such expansion. To this understanding, Koolhaas's suggestion of relating these effects of homogeneity to the strengthening expansion of the generic must appear monstrous. Large portions of the aggression Koolhaas attracts is surely because he seems to ridicule hopes that feed from the belief that there must be a way to purify the generic from the exploitative dynamics of capitalism, and to find in it, finally, a long-sought means to realize the core values of socialist and modern politics. But where am I speaking from, when daring to refer so distantly and seemingly uninvolved to this thematic locus of vibrant emotion



Perhaps this story will be almost out of date by the time you've read it. The twentieth century gave way to the Taylorization of the city and by the same tokens to a massive production[1] of generic[2] space, as the imprint of industrial age and globalization. However, the emergence of networked communication technologies has extended our interaction with the city toward an invisible and complex network of relations and data. For the first time in history, we are not only aware of such a degree of complexity surrounding us on an ordinary basis, but also likely to grasp it through a real-time flow of data. Hence, we are no longer constrained to see the city as a limited set of logical assumptions on reality, but as a data platform apt to preserve any potential relations. The Pre-specific City is the upgraded generic space.

The Pre-specific City is not exactly definable in geometric terms. In order to locate it, one must consider n dimensions, out of which none is correct or false. In fact, all of them coexist simultaneously, engendering one and only space-time. Therefore, the Pre-specific City is not a point in space, but rather a point and all its possible trajectories. This non-Euclidian condition induced in some of its inhabitants some kind of painful sensation, like the one that persists in an amputated phantom limb. Seemingly, the definition of the city has been stretched toward inconceivable limits, in a desperate try to fit to it what has become the contemporary urban condition. But why does detachment seem always so painful, when change is the only certainty there is?

"Exiled to the Virtual World or the Inconsistency of the Real" is an initiatory journey through the Pre-specific City. After a violent flow of information, ceaseless political fluctuations, and the marks of globalization, the stability and longevity of contemporary life have been dismantled. One funeral after another, the deaths of the main stands of modernity and its immanent rational principles have been declared: control, order, identity, beauty, the city ... At the rate at which population growth increased and at which the speed of changes accelerated, there were too many disappearances and not enough room for all the dead bodies. The bodies were then buried in a reversed skyscraper, hundreds of stories deep, below the buildings. Coupled with an elevator, an undefined number n of Typical Plans[3] will turn into a freak show, a surrealistic machine enabled to fabricate some unexpected encounters.

Could architecture's focus on order, crystallization, and longevity become its own damnation? How can architecture cope with the speed of changes? Wandering through the reversed skyscraper, Rem Koolhaas performs, like a contemporary Dante, an allegoric travel in search of project strategies likely to deal with this radical shift, through misappropriations, overlaps, and hybridizations. His stroll through the Pre-specific City is like a shopping afternoon in a mall of predicates. If by chance you manage to wander inside the reversed skyscraper, you will find everything described here, but also its perfect opposite, the only sure thing is that there is no sure thing. And one cannot even guarantee this ...

1 Lefebvre, Henri (1974).
2 Koolhaas, Rem (1995).
3 Koolhaas, Rem (1995).

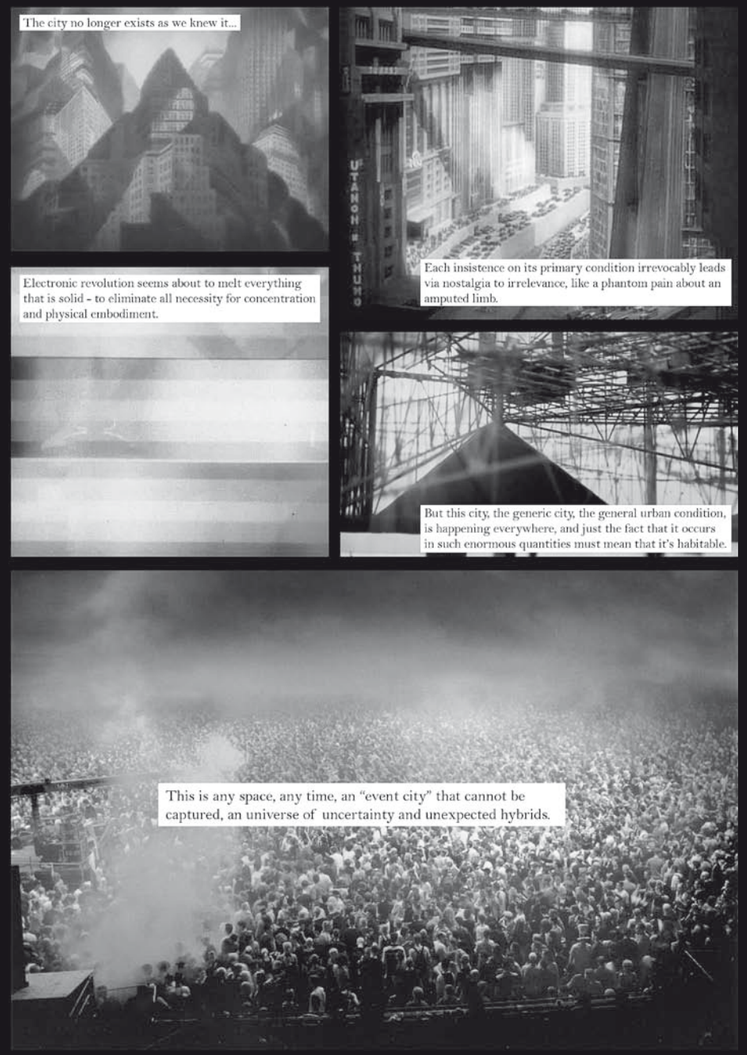
(and activism)? Before turning to my staging of that conceptual persona that, as I would like to convince you, ought to complement that of the *generic*, namely the concept of the *master*, it seems adequate to make a few short statements about this.

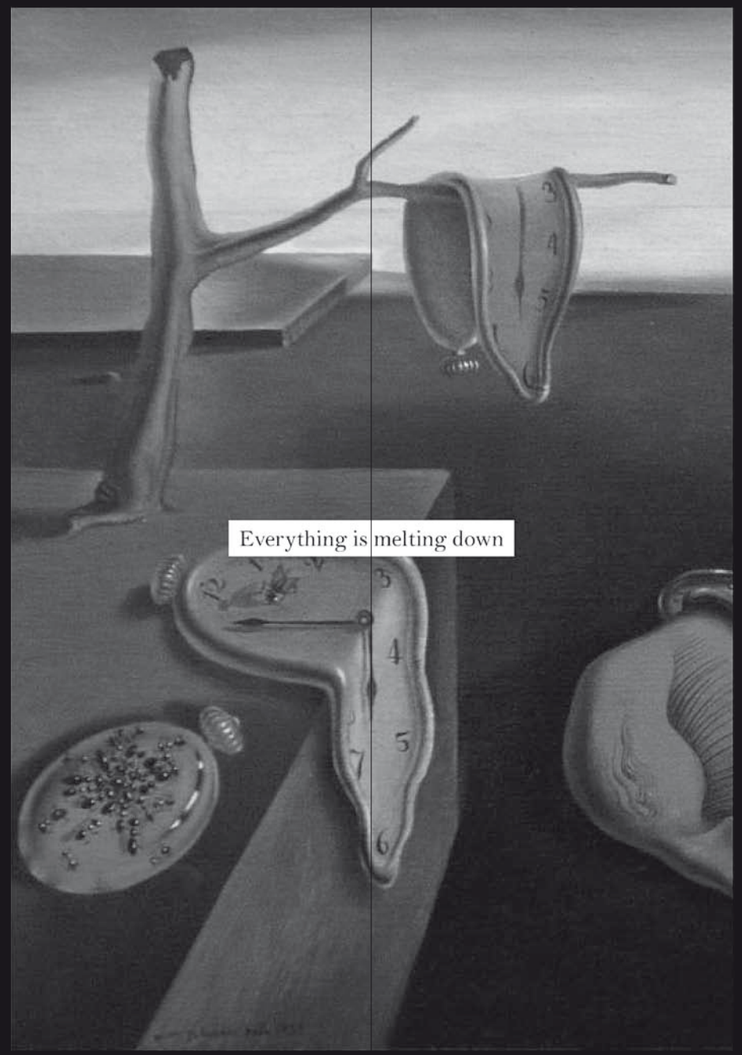
Falling in love with the in-sinuousness proper to an economy of entropy

Primary abundance

I am speaking from a point of view that credits a development with principle importance in a manner not usually shared today, even though as a phenomenon, it is almost permanently in the media—yet as an observation only, without instigating the least dissensus so far. The phenomenon I mean is this: our planet is literally bathing in the solar stream, with ten thousand times as much energy to be potentially harvested from its light particles as all of humanity is currently using worldwide, each day, streaming by continuously. For the first time ever, we can encapsulate and integrate, within the planet's ecosphere, energy that is *additional* to that which is already stored in its manifest *natural body*—the weather, plants and animals, stone and earth. It may sound strange and somewhat amazing to view photovoltaics like this, but as a phenomenon it doesn't seem to be disputable. Yet weighing this phenomenon as being of principle importance for how we think about our habitat and anything that derives from such thinking—economy, politics, how we make sense of what we experience and engage in—this is much more critical. Because it means to attempt *generalizations* that were based on what this phenomenon *implies*.

What would that mean in the first place, attempting to generalize on the grounds of regarding the planet's location in the universe not in terms of its *position* within the interplay of cosmic forces, as in astronomy and geometry, but in terms of the planet's *active energetization*? I put "generalize" and "phenomenon" in quotation marks. Why? Because this "fact" is an "artifact." It didn't come about (in a naive sense) naturally, it became a fact only on the decisive grounds of human intellectuality. Photovoltaics is technics at its most sophisticated level (yet). And to generalize usually means to



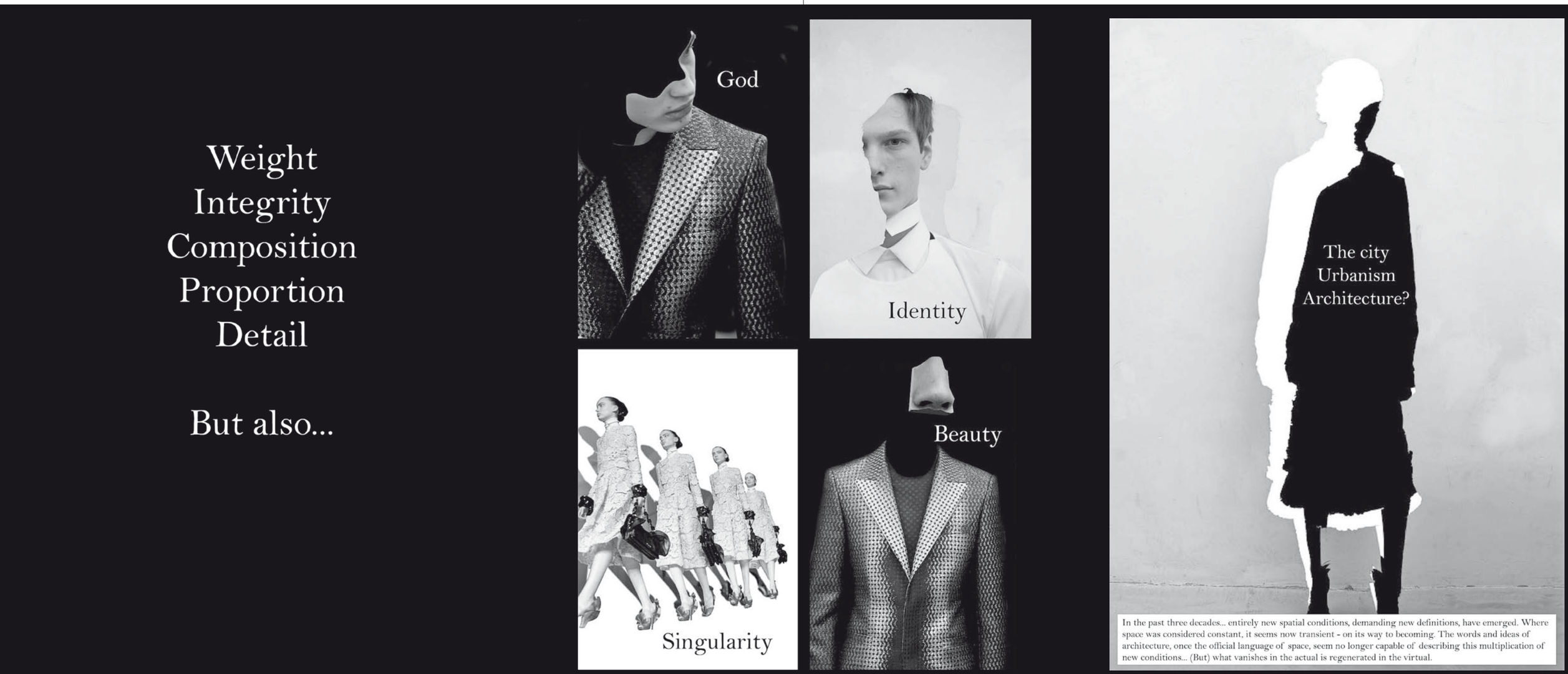


delineate classes such that they are capable of representing as adequately as possible, in mimetic terms, a certain *common nature* among different things *as they are given*. Yet in the case of the Earth, viewed in such terms, we have a singular situation. Attending to how we might "address" the planet's situation in the universe in terms of its energetization inverses our well-tested and refined language games around *localizability*. The *principle of locality* in time and space—the principle that each thing has its place—needs to be replaced with a *principle of circumlocution*. The point is that which is *being given*, not that from which we can deduce given in an immediate sense. It is not enough to consider circum-*stance*s as characterizing location; more radically: we owe our *location* to the circum-*giving* (*das Umgeben*, in German) of rambling tails (the wave ranges of cosmic streams). Under such conditions—let us call them adverbial—*quantization* precedes *localization*, just like the case in quantum electrodynamics, which also views light as particles.[34] In all consequence, attempting to generalize from the implications of photovoltaics irrevocably urges us to distinguish between "generalization" and "abstraction" much more strictly. The implications of such generalization are *abstract* at first, they affect our notions of universality, but

34 See Richard Feynman, *QED: The Strange Theory of Light and Matter* (Princeton, NJ: Princeton University Press, 1985).

35 Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley, Mark Seem, and Helen R. Lane (London: Continuum, 2003), 112.

they also reach back to what we hold as general, the empirically based and classified descriptions of things. Attempting to generalize from the planet's situation within the solar stream comes close to a *modulation* of cosmologic stability. To put it as pragmatically as possible: it suggests that we should count on a primary abundance of (clean) energy, and with that, an abundance of water and food; furthermore, bringing all materials that are rare and scarce into a regenerative cycle was not a paramount problem anymore, because the main obstacle to recycling is energy-budget calculations, which depend upon the principle scarcity of resources. In less pragmatic and more theoretical terms: such an inversion turns the Earth not only into an object, but also into a subject. This falling together inevitably collapses the critical distance that is so necessary for thinking *considerately*—which literally means through *observing the stars*, from *com-* (with) + *sidus* (genitive sideris, constellation)—and not *furiously and impetuously*. This was the key motive for Gilles Deleuze, with his difficult attempt at inverting, philosophically, the entire legacy of Platonism, which he stated in strikingly clear terms: "It is not the slumber of reason that engenders monsters, but vigilant and insomniac rationality."[35] If it wouldn't sound so dramatic, it would seem adequate



to say, instead of speaking about the possibility to "generalize" from this "phenomenon," that to assume the very possibility to do so entails assuming the possibility of *engendering the Earth in its kind*.

This is a hyperbolic way to put it, and I am aware of its polemical nature. To contextualize this, I would like to come back now to what the perspective of universalizing the Subjects of Human Rights entails in more detail. Let's attend more closely to the position of Michel Serres already mentioned earlier. To illustrate more concretely what motivates such overstatement—that we are engendering the Earth in its kind—we can take up helpful terms he has coined. He names "collectivity" as the new object-subject distribution, and places in its range of responsibility what he calls *world-objects*: "By world-objects I mean tools with a dimension that is commensurable with one of the dimensions of the world. A satellite for speed, an atomic bomb for energy, the Internet for space, and nuclear waste for time [...] these are four examples of world-objects." The turn in the language game of localizability for him means that "we become the victims of our victories, the passivity of our activities. The global object becomes subject because it reacts to our actions like a partner."[36]

36 Serres, "Revisiting *The Natural Contract*." See also Michel Serres, *Le contrat naturel* (Paris: Bourin, 1990).

Hence, attempting to generalize from the planet's situation within the solar stream in terms of its *energetization* and *circumgivenness* (instead of position and locality) comes close to a *modulation* of cosmologic stability, and this, perhaps, with a momentum no less severe than that of the *secularization* of cosmology that accompanied modernity. There is little reason to doubt that we can continue to count on what we believe to "know"—all the technical and scientific artifacts certainly bear witness to that—yet we might have to reconsider how we can *account* for the stability that is captured in what counts as knowledge. If our thinking about the Earth means to engender it in its kind, the Earth—of which we are, intimately, a constitutive part—is the "whole" that comprehends *all that can be articulated, and all that can be substantiated in formally corporeal terms* (symbolic artifacts) *as well as in materially corporeal terms* (manifest artifacts). Taking the implications of mastering photovoltaics seriously means to articulate the "identity" of the Earth not in its *general* or *correct* terms, but *in any terms that can be substantiated*. And it also means that all the terms that can be substantiated are terms that properly characterize its kind.

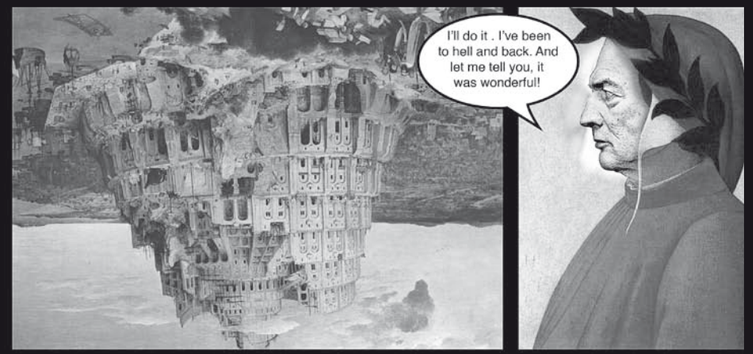
Modern science has assumed a natural homogeneity as characterizing all things natural, in terms of which it attempted to classify scientifically all things on *an equal basis*, dynamic yet universally coordinated, within dimensions whose interplay applies uniformly and globally. Serres has named them as the "dimensions of the world"–speed, energy, space, time. The principle that modernity found for identifying the individuality of all things in this manner, as constituted not by natural kinds but by a universal nature, was "work": transforming energy from one form into another. The architectonics of such systematicity rests on the assumption that the total amount of energy within the cosmos is finite. Only on the basis of this assumption can we learn to understand *forms of individual becoming* purely on the basis of what a thing is doing, literally, through understanding the transformations of energy and matter. What we see questioned with the principle of primary abundance is not this axiom, but the adequacy of the modern (thermodynamic) stance to treat *world* and *universe* alike. There seems to be no reason to reconsider that the total amount of energy within the universe be stable, and that energy is what can neither be produced nor decay. It is the equivalence between cosmos and universe that appears as inadequate from the energy perspective of primary abundance. In concrete terms: the total amount may well be finite and stable within the universe, yet that which is integrated and encapsulated within the ecosphere of the planet Earth is not. The criticality we are looking for, one not based on a principle of *sufficient reason* but on one of *finite synthesis*, needs to live up this change in perspective.

37 The aspect that there is a third component is a key motive of cybernetics, and has perhaps most prominently been articulated by Norbert Wiener—"Information is not energy or matter"—without being able to suggest a different architectonics that could accommodate all three of them. Serres's approach here is the first that aspires to do so.

38 Michel Serres, "Les nouvelles technologies: Révolution culturelle et cognitive," lecture held on the occasion of the 40th anniversary of INRIA, a public institution for research devoted to the sciences of computation (*les sciences du numérique*) in France, December 11, 2007; https://interstices.info/jcms/c_33030/les-nouvelles-technologies-revolution-culturelle-et-cognitive?hlText=michel+serres. Thanks to Diana Alvarez-Marin for translating from the original French.

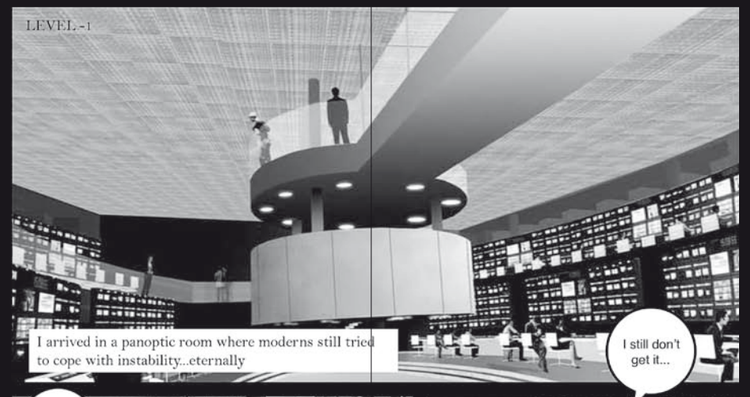
Toward an information-based architectonics

Michel Serres has recently suggested not only *that* but also *how* the two physical categories of mass and energy—those that are derived from the principle of work—could be complemented with a third component that is orthogonal to the latter two: information.[37] "I do not know any living being, cell, tissue, organ, individual, or perhaps even species, of which we cannot say that they store information, that they treat (or process) information, that they emit it and they receive information. [...] I know of no object in the world, atom, crystal, mountain, planet, star, galaxy, of which one could not say again that it stores information, it treats (or processes) information, it emits and it receives information. So there's this quadruple characteristic in common between all the objects of the world, living or inert."[38] Between all things in the world, he suggests, what is common

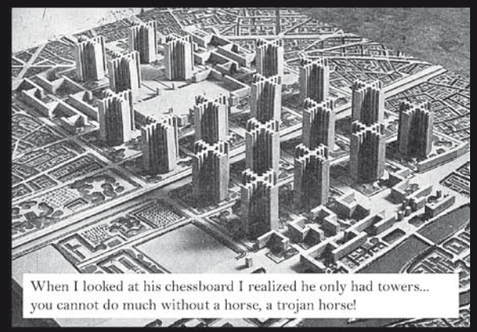


At the rate at which population size has increased and at which the speed of changes has accelerated, there were too many deaths/disappearances/dismantlements and not enough room for the bodies. The dead were then buried in a reversed-skyscraper, hundreds of stories deep, below the buildings. Coupled with an elevator, an undefined number n of Typical Plans will turn into a freak show, a surrealistic machine abilitated to fabricate some unexpected encounters.

The Typical Plan is "the plan without qualities". Its only function is to let its inoccupants exist. Create new territories for the smooth unfolding of new processes. At the same time, the reversed-Babel was transformed by its own Bigness, it was no longer a building but a city in itself. It could compete with "the city".



At one of the desks, Le Corbusier desperately multiplied his attempts to win a chess game against a computer.



Bigness has the potential to recontruct the whole, resurrect the real, reinvent the collective. A dissociation tool from exhausted movements of modernism and formalism... a new economy where no longer "all is architecture".

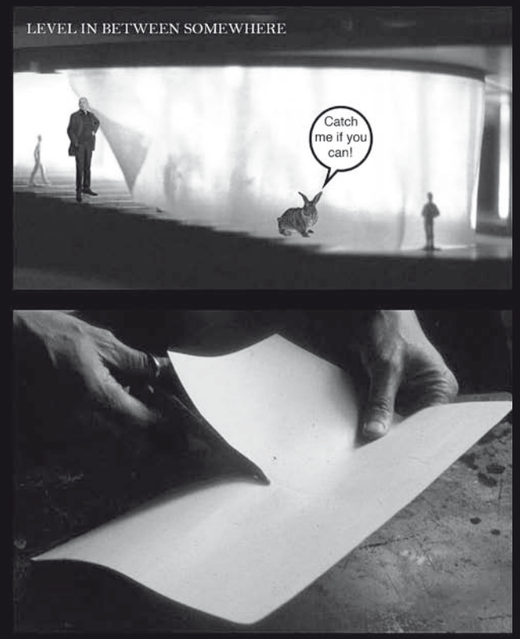
is a fourfold *activity*—to store, to treat, to emit, and to receive information. While work, the transformations between energy and matter, was the emancipatory principle that allowed the overcoming of premodern doctrines of natural order by demarcating a strict separation between culture and nature, mind and matter, and spirituality and reason, the introduction of information severely complicates things. While work as a category operates on the level of representing a generality (the class of all things insofar as they are *natural*—or *technical, in the sense of scientifically natural*, as they *do work*), the fourfold activities operate on the level of actualizing abstractions. The cosmos (world, manifestations of things) does not *represent* a universal order (forms, templates, types, etc.). In fact, the universal cannot be represented because it is pure and infinite activity: storing, treating, emitting, receiving. The so-induced notion of universality cannot be represented by concepts; it acts. Within the quantum clouds of probability distributions it *keeps predicating potentially*, and can only be actualized when articulated (factorized and complemented with coefficients) within a formula, and expressed as a case of the symbolically established solution space. Information (what is distributed and integrated in this acting) is like the photons from the solar stream: *an elementarity abounding and discrete packages of powerful indefiniteness*. Articulating it, in the metaphorical terms of how an alphabet articulates the stream of breath, excites its indefiniteness to take on the characteristics of what we might call an *imaginary magnitude*, corresponding to how the number that counts (and through that, governs and accounts) the possibility space is *indexed*, and *indexically labeled*. Such indexing raises the indefiniteness of information into lofty probability distributions of *local density (amplitudes)* and *local plenty (probability amplitudes)*. As long as information is not thus excited and raised, it is indefinite just like the photons of solar radiation are indefinite as long as they don't incite, through interaction, state changes within the relative stability of chemical bonds.

In all consequence, the relation that can be maintained to the universal, so conceived, varies locally and depends upon the capacities and abilities that can be mobilized for articulating the terms of a formula that render solvable functional mappings. As long as the virtuality of the universal is not actualized, it remains pure indefinite elementarity, an elementarity we could call ideal because it is of no substance. Such virtuality of the universal is a kind of ideal that *belongs* to all things. In order to turn substantial, it depends upon being actualized, and such actualization, I would suggest,

The new definition would be " Beautiful as the unexpected encounter of a sewing machine, an umbrella and Dali, fabricating hybrids, on a dissection table"

I just followed the hare as fast as I could. All of a suddent the floor started folding down, and I had the feeling someone was playing with us, someone playing to be an architect...

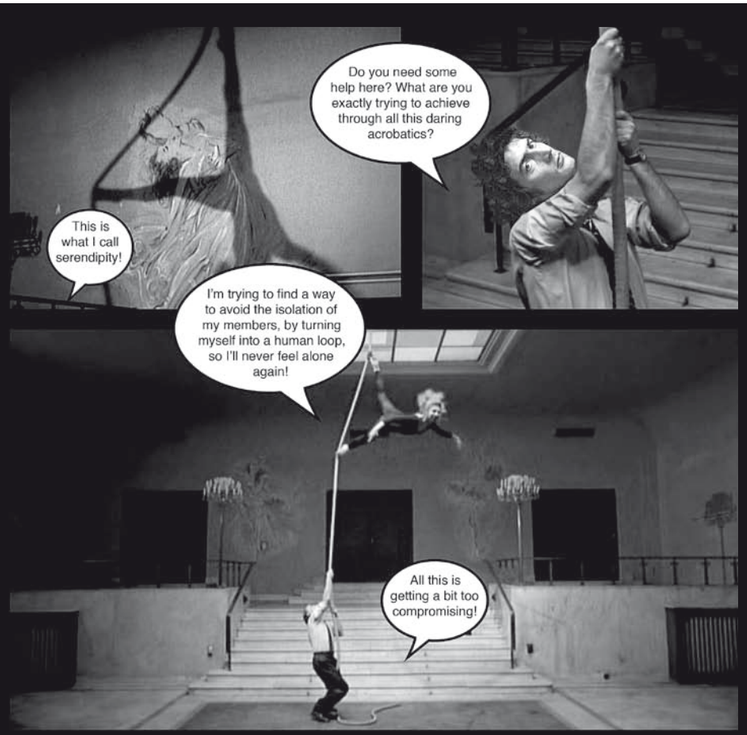
A system of folding plans was about to destroy the status of the individual floor. I lost the notions of above and below, while having the sensation that the regime of orthogonality that had dominated architecture was close to an end. Combined to a grid and stacked this new architecture could be defined as new inside-out city. The hare disappeared...

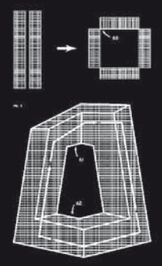


is achievable in acts of learning. Learning, literally, is an act of appropriation: it means mastering a subject matter, and it is through such mastering that the virtual can be actualized and rendered manifest. It is not the formulas that incorporate the universal in any *schematic* sense; the formulas, in their apparent schematism, depend upon animation through the learnedness according to which the partitioning differentiation of the activity a formula *constitutes*, as a *matheme*, is modulated. To conceive of formulas as *mathemes* from the Greek *mathema*, for "that which is learned," has been the custom for many philosophers throughout antiquity to the Enlightenment, and has been revived very prominently in the twentieth century by Martin Heidegger in *Die Frage nach dem Ding* (1950), and also by Jacques Lacan or Gilles Deleuze, among others. From our point of view with regard to primary abundance, what all of them are concerned with (in very different ways!) is that the universal—if it is *in act* (ontologies of the event)—is literally *entropic*, from the Greek term *entropia*, *en* for "in" and *trope* for "a turning, a figure of speech." The universal is that which keeps turning within figures of speech.

With this, we can now summarize our proposition of an entropic economy: It is not *against* entropy but *thanks to it* that we can maintain a locally variable relation to the

universal, and *substantiate* figures of speech by treating them as *abstractions*, not as *generalizations*, and by striving to formalize them into the constitution of a possible *matheme*. From the point of view of *mathemes*, the relation we can maintain to the universal is locally variable, and it is subject to an "economy" that is both collectively and individually based, and whose "stocks" are those accumulated through learning, and whose exchanges are rated by the appreciation of mastership. In all dramatic exaggeration: surplus names can be rated in terms of any scale, from completely worthless to sublime dearness. The subjects that are mastered, by learning, are political subjects in Rancière's sense, which I introduced earlier. They are subjects whose names do not represent definite collectivities. It is in this sense that their names are *abstract*, not *general*. They are "surplus names, names that set out a question or a dispute about what is included in their count." The predicates whose activity is being governed by such counting are, due to the virtuality of their universality, *open* predicates: they do reign by (arithmetic) means of summation, division, etc., yet what they sum up is symbolically constituted, and because of that, can never be exhaustively totalized as a finite sum. They are predicates that *open up a dispute* about what they exactly entail and whom they concern in which cases. They are capable





of introducing an interval that makes possible political subjectivization into any status quo. Let's remember: "Political names are litigious names," Rancière points out, "names whose extension and comprehension are uncertain and which open for that reason the space of a test or verification. Political subjects build such cases of verification. They put to test the power of political names, their extension and comprehension."[39] It is such a putting to the test that formulas, conceived as *mathemes* that are allowed to *calculate with what has been learned*, are engaged in. What has been *learned* can also be *taught*. If we cease to *represent* the universal, and instead relate to it by means of actualization, what opens up is the perspective of an economy in which all acts of appropriation are *contributing to*—not depriving—the prosperity of the universal. What comes within reach to be thought is an economy where privation increases the wealth of that which belongs to all. If an individual learns to know, through acquiring mastership, developing it as a proper ability and demonstrating that and how it can virtually be learned by anyone, it *differentiates* and *proliferates* the richness of the universal.

From the adverbial and categorial point of view to universality, the commonness of the common nature of things is the result of *inception*, rather than the result of

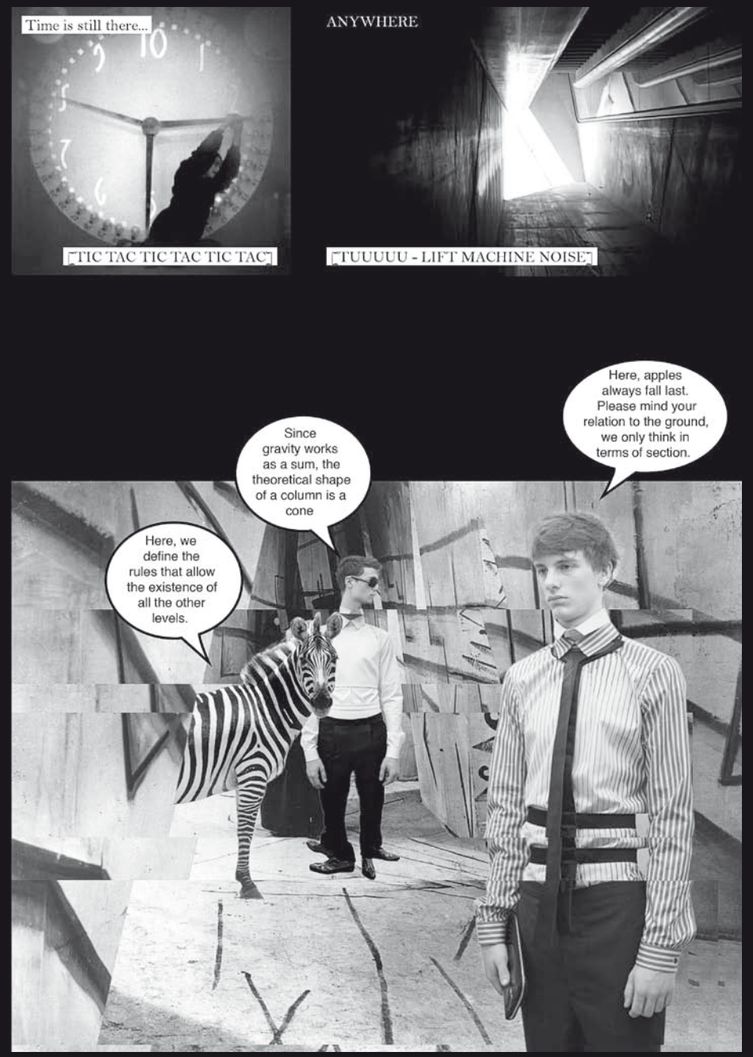
39 Rancière, "Who Is the Subject of the Rights of Man?," 304.

conception. With regard to political subjects (in the extended sense proposed in this text, not in Rancière's original sense), abstraction precedes the concrete existence of that which presents itself to us in regularities. That which appears recurrently as cases follows a categorial order before it can be tested inductively, empirically. Abstractions are for learning, generalizations are for testing and settling the learned such that it can be treated as a case, as a "such" and not only as a "this."

Contrary to pursuing a prosaic disenchantment of the fascination with the generic, I hope to have been able to express why I think it only now begins to get truly interesting: the generic introduces a possible understanding of mastership that, seemingly paradoxically, builds on the premise of *expropriation*. It introduces an understanding of mastership where the *-ship*, the affix demarcating a "state, condition of being," is primary to the individuality that actualizes and acquires this state—the masters.

Within the Generic City: Master, yet in "whose" house?

By coining the striking word of mankind as having to come to terms with "not being the master in his own house," psychoanalysis has suggested that we ought to understand



ourselves through roots within the *unconscious* as a peculiarly *expropriated groundedness of what can be understood and known*. Psychoanalysis has rendered explicit a veritable *negative form of architectonic thought* that operates by working through an element of collectivity that remains unavailable for all attempts at taking control. Jean-François Lyotard has modulated this language game by making the point that notions of humanity need to be rooted in an element of what he calls "the inhuman," a constitutive part of us that we do not control—which may be birth, infancy, the law, God, or the unconscious. Rancière has taken up this consideration in his reflections about who is the subject of the rights of man, to which I have made reference several times: "Absolute evil begins with the attempt to tame the Untamable, to deny the situation of the hostage, to dismiss our dependency on the power of the Inhuman, in order to build a world that we could master entirely," he writes, and continues: "Such a dream of absolute freedom would have been the dream of the Enlightenment and of Revolutionary emancipation. It would still be at work in contemporary dreams of perfect communication and transparency."[40] Important is that such inhumanity is the irreducible otherness, the part of the untamable of which human being is both host and hostage, *Gastgeber* and *Gast*, as a relation we might perhaps call "coexistence" or "genuine mutuality."[41] Along the lines introduced in this text, I would say it is the infinite surplus that needs to be taken into account wherever we are working with summations, checks, and balances.

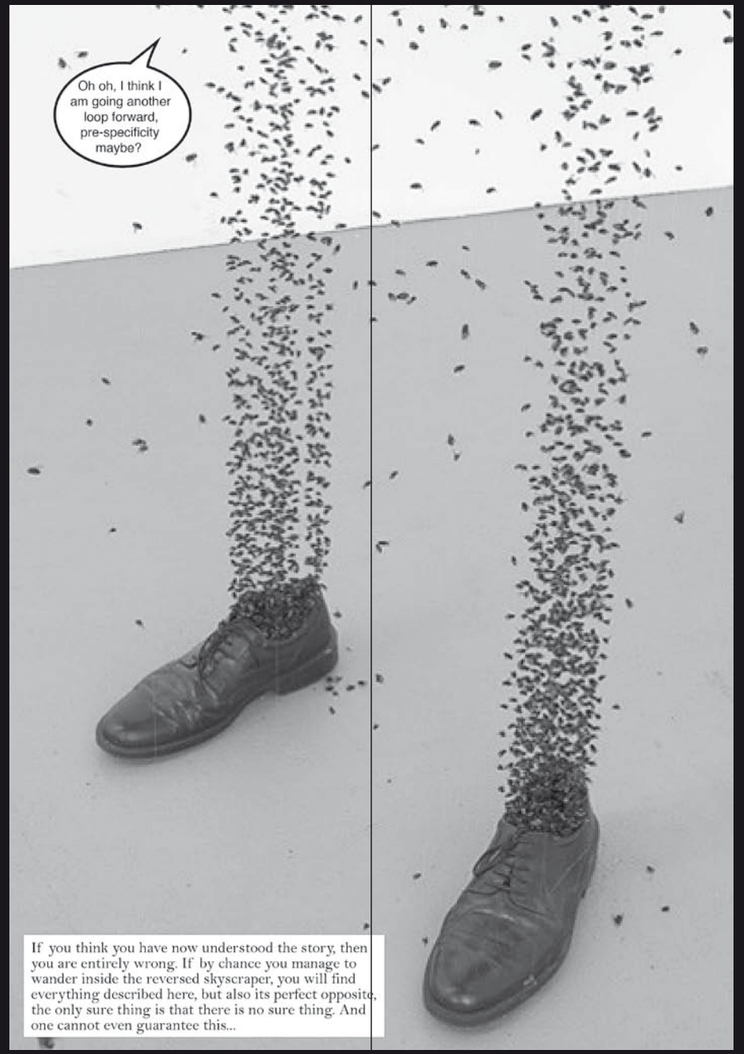
40 Ibid., 307.

41 Hans-Dieter Bahr has developed this theme toward a veritable reconception of philosophy, which he calls *Xenosophie*. See Hans-Dieter Bahr, *Die Anwesenheit des Gastes: Entwurf einer Xenosophie* (Nordhausen: Bautz Verlag, 2012).

The grand project of an architectonics of reason, whether in positive or in negative terms, even if it were to inverse the problematics of mastership into non-mastership—purely into activity that doesn't require mastership at all, but that unfolds auto-logically and automatically—meets its limits and turns stale and oppressive in the reduction of its own categories to representable schematisms. A schematism cannot engage critically with its own constitution intra-specularly. Our interest in a next paradigm for programming languages, a *pre-specific* one after the *procedural* and the *object-oriented* ones, derives from the unease in observing that these limits are indeed being met today.

Programming languages, as I have argued earlier on, have entirely broken with the mimetic paradigm of language (at least in the representational understanding of this paradigm)—their grammars are engendered, their structures are governed self-reliantly, symbolically, within the confines of certain arbitrarily set determinations of usefulness. Without an understanding of mastership, all engagement with intra-specularity would mean to subject one's own critical engagement to the governance of these arbitrary determinations. In other words, if the generic makes a worthwhile point in suggesting to trust in a "groundedness" of knowledge that roots within an elementarity of distributedness, where all particular instances are expropriated from their individual specificity, such trust would mean—in programming more generally—to subject readily to the abstractly synthesized and arbitrary *master language*, or to *master models* in object-oriented computing more specifically. The problem thereby is not that these synthesized *masters* are synthesized; and neither that their "nature" is induced according to the orientation of a certain ambition. The problem is that the synthesized masters tend to appear as quasi-naturalized, while in fact they are synthesized by acts of learning and on the basis of acquired mastership. The problem, hence, is that they ought to be esteemed and treated accordingly—that is, the categories with which they operate ought to be understood as characterizing "political subjects," not the subjects of "natural kinds." The criticality with which they need to be met is not one principled by criteria indicating when reason is sufficient, but by criteria that index the capacities that constitute acts of finite synthesis.

Thus, instead of referring to this dimension of expropriation as an expansion of the Unconscious, the Law, Provenance, or Divine Chance into and within the scope of what can be computed, I prefer to call *literacy* this abstract "where," where "what can be engendered through learning" is rooted



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and grounded. We need not make any appropriative claims about the untamable nature and insistence that animates literacy, if we relate to it as a kind of *body-to-think-in* that indeed is generic, and hosts us *before* it can be inhabited individually, while its existence depends, at the same time, on actually being acquired and inhabited by individuals. We can now see, in literacies, that which incorporates "loftily" what I have earlier suggested to understand as the politicality aspect of nature. I have characterized it as a dimensionality constituted purely by distributiveness, and as complementing the modalities of the necessary and the possible with a further aspect, that of the probable. Expropriation and mastership maintain a kinship relation that might appear surprising.[42] Yet at the same time we all well know how, in order to communicate—whether in spoken words (speech), written phrases (discourse), or symbolic terms (algebraic code in IT and IT-based CT)—we depend on means and constraints *from which* we may well choose, but *to which* we *first* have to submit, in order to be able to choose. As long as we don't master articulation and expression, argumentation and composition, signal interpretation and interface decodings, the less schematic and more interesting ones of them appear to us not as wrong, but as empty, superfluous, often confusing, insufficient, not entirely adequate, etc. It sounds quite paradoxical, but we feel comfortable, individually, within this generic dimensionality (our literacies) proportional to *how well we are able to "master," individually, these collectively constituted and governed capacities.*[43]

Characterizations of the subject of the master

Attracted by the volatility of a flirtation between the philosophical stances of "critical rationalism" and "speculative realism"

So let us get back then to characterizations of the second conceptual persona that features centrally in this text, next to that of the generic: the master. While many contemporary intellectuals seem prepared to submit, with all due acrimoniousness, the rich legacy in *architectonic inception* to forms of often all too unimaginative and uninspired *scientism*,[44] a young French philosopher is currently raising hopes for the possibility of philosophy to actually *continue* its legacy of architectonic inception. Quentin Meillassoux is central to an emerging school called "speculative realism," or sometimes "speculative materialism," a vibrant field of intellectual thought and debate characterized through its reactivation of metaphysical and ontological themes, while at the same time being very active in strictly programmatic and political terms as well. Furthermore, the people associated with this community are closely watching recent technological changes, and they often take certain aspects of what they observe as their starting point. All of this is interesting enough for our context of computability, information, and architecture. Yet what I would like to focus on here, in order to bring out as clearly as I can the distinction between what I suggest to call "critical rationalism" and "speculative realism," is not this larger context around Meillassoux in general, but a particular book he recently wrote on Stéphane Mallarmé's poem "Un coup de dés jamais n'abolira le hazard" ("The Throw of the Dice," 1897). This 2011 book, entitled *Le nombre et la sirène*, is equally brilliant as it is unsettling with regard to our interest in computability. The main protagonist in the poem is the *Master*, in the double sense of a particular authority and yet also (as is the case with most fictional characters) in a generic sense. We encounter the Master on a boat in the midst of a stormy and wild sea, holding dice in his fist and pointing his hand into the air. The poem never resolves what the Master actually does or intends to do with the dice, whether he wants to throw them in order to learn about his near destiny, whether he believes that he can intervene in the "fulfillment" of what appears to be his "predicament." Are the dice a sign of the Master's despondence, his impotence to continue being what he is, a master, vis-à-vis the powers of cosmic chance that science has just began to affirm in the stochastic methods introduced by Laplace and others? Does the calculation with probability mark the ultimate end to any form of mastership, and instead enforce a more humble stance for man in a cosmos whose nature is determined indirectly, on the level of a second derivative, as a paradoxical determination of being undetermined?

Most of the interpretations somehow unfold along these lines.[45] The brilliance of Meillassoux's reading lies in opening up, quite inversely to these readings, a novel possibility of how the poem can be interpreted *as presenting an instance of actual, successful mastership*. Meillassoux presents nothing less than an understanding of the Master in an entirely original way, which relies neither on annihilating chance nor on desiring to control it, and the calculations that are possible with it, objectively. We could easily call what Meillassoux reveals in Mallarmé's poem a symbolist way of engaging with the

42 A recent discourse where thought is devoted to this kinship between expropriation and mastership, via the question of whether and how sexuality can be understood as the being of symbolic relations—i.e. the being of relation-in-general—was published in two booklets, one by Jean-Luc Nancy, *L'«il y a» du rapport sexuel* (Paris: Éditions Galilée, 2001), and one by Alain Badiou and Barbara Cassin, *Il n'y a pas de rapport sexuel: Deux leçons sur "L'Étourdit" de Lacan* (Paris: Fayard, 2010).

43 Judith Butler makes a similar argument about language as the dimension in which we are all equally dispossessed, in her essay "Giving an Account of Oneself," *Diacritics* 31, no. 4 (Winter 2001): 22–40. Her argument, I would suggest, can be expanded and generalized along the lines I propose here.

44 For any esteem of intellectuality as something that has been *achieved* by civilization, it is, for example, a sheer disaster that so much of research all across the social-science and engineering disciplines today is evaluated, funded, and discussed along the simple and reductive line of carbon dioxide reduction.

45 The "death of the author," which was proclaimed by Roland Barthes, Maurice Blanchot, and Jacques Derrida, among others, was decidedly rooted in particular readings of Mallarmé's great character of our poem, the Master.

46 See Vuillemin, *La philosophie de l'algèbre*, especially the concluding chapter, "La mathématique universelle," 465–518.

47 In his earlier book *After Finitude: An Essay on the Necessity of Contingency* (London: Continuum, 2008; published in French as *Après la finitude* in 2006), Meillassoux reflected on what such an "encapsulating move" entails in relation to the philosophical tradition, and introduced the notion of "correlationalism" for referring to all stances that embrace a transcendental position. He suggested calling "realism" any stance that negates correlationalism. With due distance to the euphoric reception of this proposal (but also with some sympathy) Alberto Toscano has discussed the (also politically) problematic aspects about such an ambiguously "generous" generalization in his essay "Gegen Spekulation oder eine Kritik der Kritik der Kritik," in *Realismus Jetzt*, ed. Armen Avanessian (Berlin: Merve, 2013), 57–75.

48 "We have abstractly developed the hypothesis, which seemed to us to correspond in 'The Throw of the Dice' to Mallarmé's draft since 1895—the one of a diffusion, rather than a representation, of the divine within the Oeuvre." Thanks to Diana Alvarez-Marin for translating this and the subsequent quotes from the original French: "Nous avons développé abstraitement l'hypothèse qui nous a paru correspondre, dans le 'Coup de dés,' au projet de Mallarmé depuis 1895—celui d'une diffusion, plutôt que d'une représentation, du divin par l'Oeuvre." Quentin Meillassoux, *Le nombre et la sirène: Un déchiffrage du "Coup de dés" de Mallarmé* (Paris: Fayard, 2011), 89.

theme of mastership—yet this, at first sight at least, comes close to saying nothing very surprising. And yet, the theme of symbolism as Mallarmé renders it present in the poem, and that is worked out by Meillassoux, not only affects severely what is more commonly associated with symbolism in art, it also affects the notion of symbolisms in mathematics—the entire legacy of developing, trusting, and departing from what can be learned through working out resolutions to formulas. The clue in Meillassoux's reading—as I would put it—is to have Mallarmé engender a one-of-a-kind corpus of numbers whose "nature" is universal, while at the same time being singular. Meillassoux speaks differently about this; he does not mention the context of corpus theory in mathematics at all, for him it is all about the unique event of depositing *the number that can be no other* (on the side of Mallarmé) and someone (him, Quentin Meillassoux) finding it. Already before Meillassoux, many interpreters have sought to find *a clue*, and to be able to prove the hermetic nature of the poem as a treasure that was capable of conserving something inarticulate yet essential, by seeking to demonstrate how their clue fits the structure of the poem like a key fits the keyhole. What distinguishes Meillassoux's reading from any such attempt is that he finds the clue he needs not in something exterior to the poem, but only because he engenders it himself, immanently, by working through and appropriating the materiality of the text, intimately and from within the poem, literally by not much else than counting, speculating reasoning, and by providing the grounds for his reasoning in clear and distinct form. And yet it would be mistaken to assume that at stake in Meillassoux's reading is a notion of mastership that relates to a Cartesian subject, that knows how to master an object in all critical distance and pious devotion (after all, for Descartes it is God gifting us individually with ideas).[46] Rather, at stake in Meillassoux's reading is a notion of mastership based on what I would call *insistentially shared intellectual intimacy*. The mastership that Meillassoux portrays in Mallarmé's poem, I would like to suggest, is mastership in succeeding to invoke acts of learning against the sheer improbability that characterizes learning. In such a situation, all clearly set identity distinctions between author, reader, and the protagonist are *raised into a lofty cloud* where the outcome, after settling back to "commonness" again (which we could call *existential extimacy*) after such exposure into the *insistential intimacy* of such learning, is profoundly uncertain. This is ever more remarkable, I think, if we consider that our present, in the beginning of the twenty-first century, marks a moment when all hopes that count as reasonable with regard to the relation between chance and calcuation go toward controlling chance through calculus, under the positivist restraint that such calculation needs to be combined with the provisional empirical precision and explication that characterizes *the least degree of speculation*. Against this critical divide between induction (empirical) and legitimate generalization (formal and deductive), Meillassoux affirms the move to symbolically encapsulate both, and work empirically within the abstract "indexicality" of the poem's "material."[47] I call it indexicality and materiality of the text because the stance of such "encapsulation" means to depart not from clearly bound dimensions, but from a state of mixture involving the semantics, the harmonic and graphical meter, the broader historical-political-cultural context as well as the history of the legacy he continues (poetry), and all hermeneutic aspects one can think of; having all the distinctions that grow out of these classical dimensions, he takes the liberty of putting them into a cloud of probabilistic relationality from which he then sets out to extract his own reading, where all classical stances that could be taken as a "ground" end up being slightly shifted, revolved, and rearranged in a manner that is consistent within itself, yet that lacks objective necessity in the consistency it arranges. Indeed the main hypothesis he puts forward is that Mallarmé's project was not to represent the divine, but to dissolve it through his own poetic oeuvre.[48] It is this contingent character of his reading, coupled with fine exactness and formal rigor, that sets up what I would call "the improbability of learning" that I see staged in Meillassoux's reading. Every act of learning, I would like to argue, confronts us with just such a "confused" and "oversaturated" situation. To deal with such confusion through trust, until one has developed a "stable ground" or "consistency" that one can master in a relaxed (not in any particular and strict way dependent) manner, is the "spiritual" character of learning—in all the ambiguity this entails.

I must say that this emphasis on seeing a notion of mastership introduced through Meillassoux's reading of Mallarmé's poem, which sets upon the fundamental improbability of learning, is not (not directly, at least) the way Meillassoux himself wants to guide the outlook that stems from his reading. For him, this point of view would be much too prosaic. In his eyes, the genius of Mallarmé (and that of himself) is—explicitly and literally so—*programmatically* spiritual in nature, not *technically* spiritual as I would prefer to have it with my emphasis on learning and literacy. The great passion that I wish to point to as being involved in any act of teaching/learning plays a crucial role

for Meillassoux as well—he is very attentive to it—yet to him it does not characterize learning in general; he sees in it a singular moment that grows so powerful in this focalization as a singular moment that he recognizes in it an act of divine nature. I will not attend much here to the aspects of Meillassoux's book where he draws quite daring consequences from this, suggesting to see in the poem a veritable *liturgy* that is capable of hosting and bringing comfort and orientation to a community-to-come, open to anyone who is willing to participate in performing the sacred rituals of what he calls "Mallarmé's secular religion."[49]

Cosmic untendedness, prosaicness in verse

But let me sketch a bit the larger context within which Meillassoux is inspired to such ideas. For it is a context that bears close familiarity to the contemporary situation in architecture, vis-à-vis the power of computing. So what was at stake more generally with the question of meter in poetry, and the rise of free verse?

Since antiquity, poetry was always credited a certain dignity, as rightfully deserving a peculiar kind of spiritual trust. Different from other manners of expression through language, a poet did not lecture a doctrine, and did not speak in the name of an authority. And yet, there was a peculiar necessity attached to poetry, because any appreciation of excellence, as a poet, was tied to the poet's strict subjection to a metrical law that was larger and more binding than his will: a poet strictly had to subject his verses to the conservative constraints of poetic meter.[50] If a poet could lend his voice to evoke a thing with elegance, and without doing it violence—that is, through masterfully playing *within* these constraints—there could be attached, to that which is voiced poetically, a certain divine autonomy or gift. Like this, whatever was articulated poetically could be articulated only *indirectly*, and thus remain divine in nature. The oeuvre of a poet was to express this divine insight. As such, it is not appropriated by the verse that composes it, and what is more, the meter that renders the verse enunciable allows the listeners/readers to participate in the appreciation of such divine nature. There was in this sense, of a peculiarly poetic and strangely singular kind, a necessity involved in the creative vocations of addressing that which cannot be voiced directly. Due to this necessity, poets were held to deserve a particular kind of spiritual trust. Before the background of this legacy, the rise of so-called free verse in nineteenth-century poetry mirrored a profound crisis of cosmic untendedness that has its roots in a larger context, and that resulted from the strict separation of science from religion during the Enlightenment.[51] For poetry, the indirect manners of linking the sounds not only in a grammatically correct way, but also figuratively coherent through rhyme, alliteration patterns, and the like on a structural level, began to turn prosaic as the custom of fixed meter became secularized. Allegorically speaking, within the Cartesian coordinated space of representation, connecting points to the continuity of a line can count as no more but a *simulated continuity*. It is in a similar sense that also the poetic line (verse) literally began to turn *prosaic*.[52] It is difficult to thematize this today, but the secularization that took possession of the ancient legacy of creative speech was of such awkwardness! Its old and trusted sense of necessity was threatened, naturally, from the arbitrary decisions that ordered the lines of free verse. At the time when Mallarmé was writing, that very spirit of modern prosaicness had set out to modernize even poetry, while nevertheless remaining keen in attempting to maintain a distinction between poetry and prose. Like the other symbolist poets, Mallarmé was outraged by the entailments

49 "Modernity had therefore triumphed, and we did not know. The passion put, throughout the nineteenth century, to snatch the messianism of his Christian condition, to reinvent a civic religion freed from dogma, an emancipative politics exterior to the former Salvation. […] Mallarmé would have taught us that modernity had in fact produced a prophet, but erased; a messiah, but by hypothesis; a Christ, but constellatory. He would have architected a fabulous crystal of inconsistence containing in its heart, visible by transparence, the mermaid gesture, impossible and vivid, which had engendered it, and still engenders it. And the poet would have thereby broadcast the 'sacred' of his own Fiction with each reader accepting to nourish herself on the mental wafer of its fragmented Pages. The whole in accordance with an accurate atheism, to which the divine is nothing beyond the Self articulating itself to the very Chance." (From the original French: "La modernité avait donc triomphé, et nous ne le savions pas. La passion mise, tout au long du XIXème siècle, à arracher le messianisme de sa condition chrétienne, à réinventer une religion civique délivrée du dogme, une politique émancipatrice extérieure à l'ancien Salut. […] Mallarmé nous aurait appris que la modernité avait en effet produit un prophète, mais effacé ; un messie, mais par hypothèse ; un Christ, mais constellatoire. Il aurait architecturé un fabuleux cristal d'inconsistance contenant en son cœur, visible par transparence, le geste de sirène, impossible et vif, qui l'avait engendré, et l'engendre toujours. Et le poète aurait ainsi diffusé le «sacre» de sa propre Fiction auprès de chaque lecteur acceptant de se nourrir de l'hostie mentale de ses Pages fragmentées. Le tout selon un athéisme exact, pour lequel le divin n'est rien au-delà du Soi s'articulant au Hasard même.") Ibid., 128; see also ibid., 78ff.

50 The role of meter in poetry can be paralleled with the role of modularity in the architectural order of columns.

51 This same crisis famously provoked Kant to face the problem of philosophy being left with grounding reason within the sole alternative of either skepticism or dogmatism, an alternative that he sought to overcome with his notion of critique as a means to dethrone the centrality of whatever notion of "pure reason." For a broader discussion see again Vuillemin, *La philosophie de l'algèbre*.

52 In the same manner, it is this cosmic untendedness that liberated architecture to concentrate on the vectors of how to build institutions as a form of political "tendedness" on the one hand, and on that of radically subjecting the building practices to procedures of technological industrialization—a vector that itself found an institutional form in the polytechnical universities that were founded in the late eighteenth century and all throughout the nineteenth century. The secularization movement in post-revolutionary Europe was carried by this momentum of modernization, and it affected also the fine arts. The mechanists were considered artists before this, as the French expression of industry as *arts et métiers* still illustrates.

MAURICIO RODRIGUEZ

HOUSE OF THINGS

Once architecture is open to embracing key paradigms of Information Architecture (IA), architects can think about a "digital" order in a more instinctive manner, foreshadowing an imminent future in which "we're all becoming librarians" (MORVILLE 1998). In essence, the nature of "architecting" is purely organizational; only now, it also operates over an informational, no longer exclusively manifest material ground. A central concern of IA and architecture alike, is to provide the structure of a corpus to an unstructured field of givens. A series of such parallelisms has been set to project new opportunities for architectural design by means of symmetry. The goal of this project is to illustrate how abstract relations are capable of reconstructing spatial configurations in a manner that originates from synthetic grammars engendered by following a desired narrative, and specifically designed to tell stories about people, about events, or about things. Considering artifacts as components endowed with potentiality and capable of altering architectural experiences, the notion of a house is to be reevaluated—this project considers dwelling in terms of an informational model of human activities that can be described, organized, measured, and classified in an open variety of ways as a household of familiar objects: a "House of Things."

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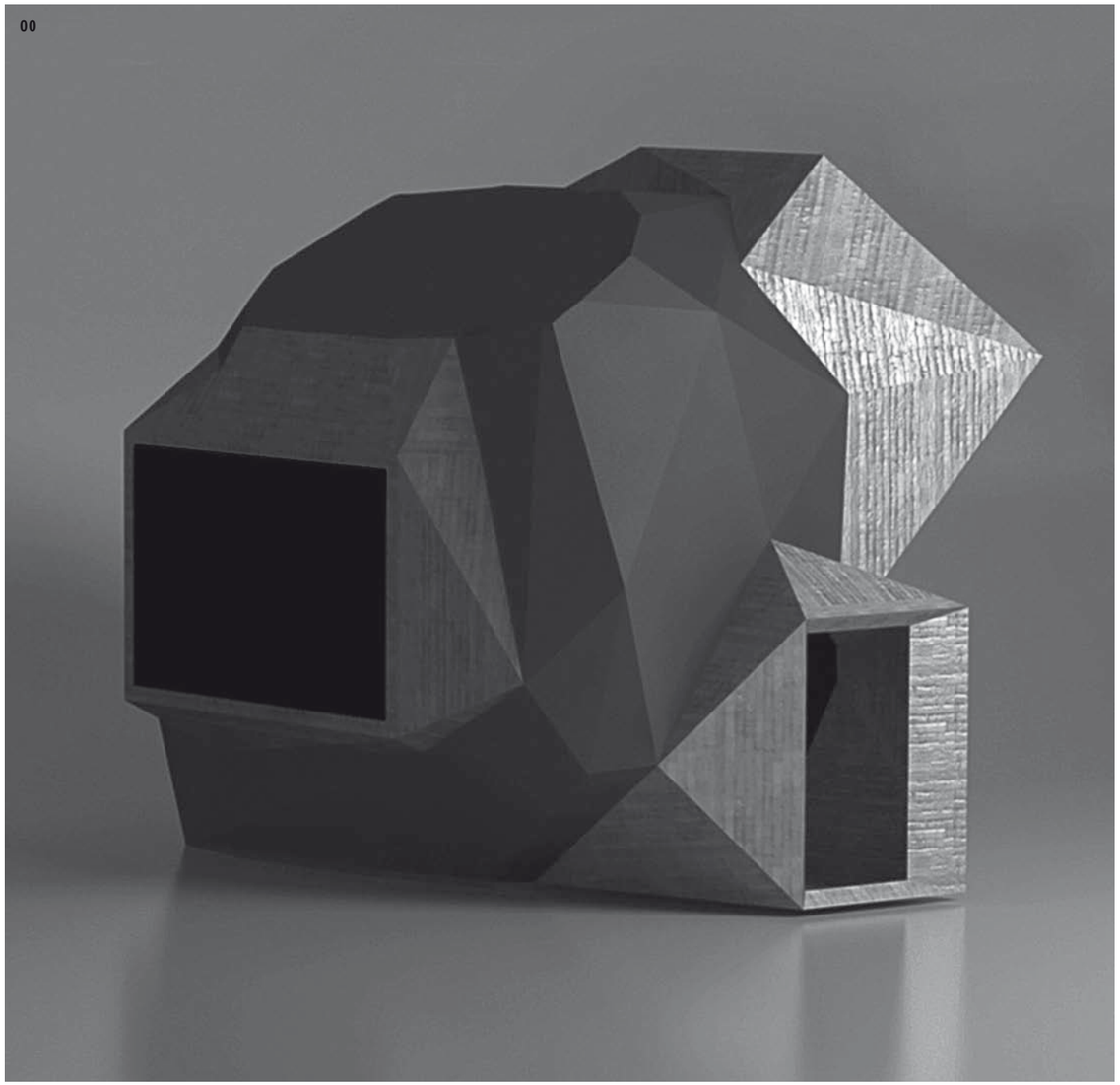

of this development.[53] Yet different from other poets, Mallarmé never seems to have released his outrage through taking sides programmatically, either for the conservatives or the modernizers. This is precisely why his poems have been interpreted in the twentieth century mainly along the lines of necessary acceptance of the impossibility of mastership (and authorship) in the exposure to stormy cosmic untendedness. His character of the Master is read with admiration as bearing up bravely in a spirit of *affirmed vanity* against his own awareness of his ultimate impotence.

It is before this background that the recent reading of Mallarmé by Meillassoux touches such a sensitive zone. It opens up the perspective that the symbolist answer to these developments might not merely be read in terms of a bourgeois sublimation as a proclaimed continuation of the spirit of fine arts—bourgeois because in poetry, separated from its dignity, there is *nothing really at stake anymore*, except the gain in private pleasure. Symbolization appears, with Meillassoux's reading, as something more than merely the crafty and artsy coating in codes and educatory puzzling of a truth that is as inevitable as it is bare of offering true delight. Let us attend now more closely to how symbolism is being substantiated by Meillassoux's reading.

53 See Jacques Rancière, *Mallarmé: The Politics of the Siren*, trans. Steven Corcoran (London: Continuum, 2011); original French version published in 1996.

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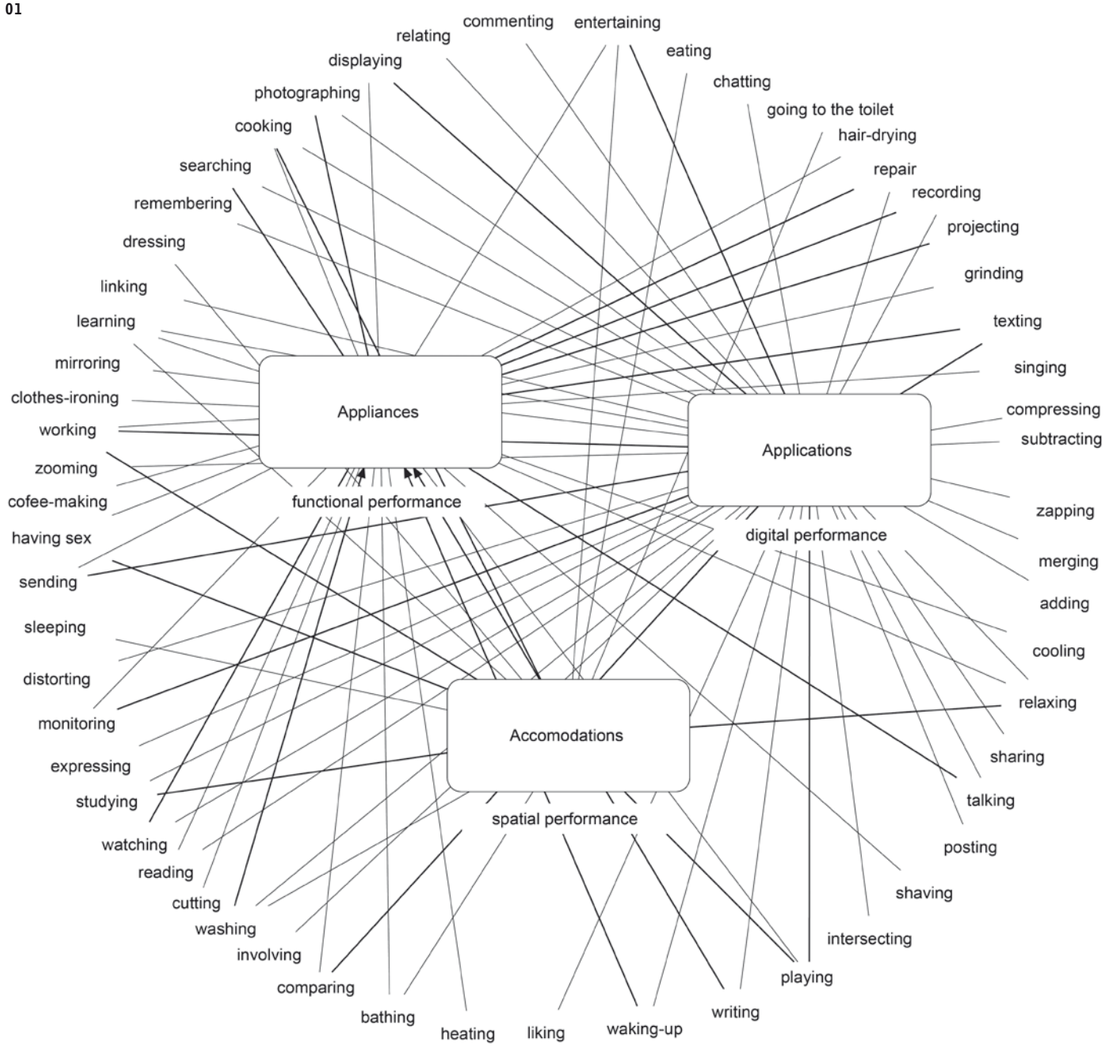


00 « A House of Things. Final materiality
01 Activity groups and abstraction procedure

54 The whole argument is summarized in the chapter entitled "Sommes" (Summations) in Meillassoux, *Le nombre et la sirène*, 47ff.

55 Significantly, in the subtitle of the German translation of Meillassoux's book, *déchiffrage* is translated as *Verrätselung*, not as *Entzifferung*, as with the English translation (decipherment). In English, *Verrätselung* could perhaps best be expressed as "dis-ciphering." It strikingly makes Meillassoux's point explicit: that Mallarmé's oeuvre seeks to *dissolve*, rather than to represent or even resolve, the nature of the divine. See footnote 50.

56 It needs to be pointed out again that Meillassoux himself is not speaking with reference to the mathematical theory of numerical corpus; interested as he is in *disciphering* (see footnote 56) the notion of numbers, in order to dissolve what it renders present, he speaks of the identity of his number 707, of the particular being of this number (which he identifies as the incarnation of an altogether new notion of numbers, namely number-as-chance).

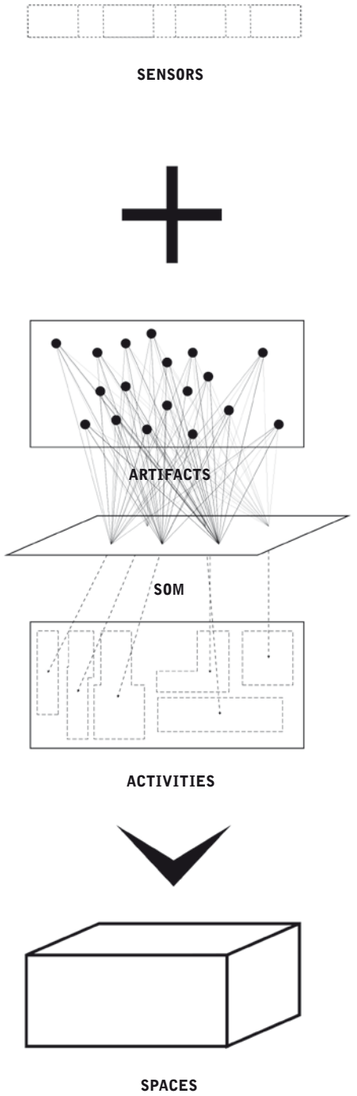
His claim is to see in Mallarmé a true symbolist master, because he sees him as having engendered his own numerical corpus—i.e. a *symbolic nature* of numbers, from "placing" in the manner of a distribution (hidden in the seemingly arbitrary meter of the poem) *the one number that cannot be another*: 707.[54] The entire analysis of Meillassoux revolves around determining the "identity" of this number—as *the being of chance* (*l'être du hasard*) that consists in *making itself infinite*.[55] Meillassoux's thesis is that from this one number, the sum of all the words in the poem, Mallarmé has extracted the meter in which he wrote the poem—and that Meillassoux explicates as "the clue" he finds from the experience of what I have called the insistential intimacy "within" the poem's proper interiority, by working through its material. The meter Meillassoux hence postulates is not, like the arbitrary structures of prose and free verse, fully contingent without any "generically necessary" motivation. Why? Because rooted within the necessities constitutive for a symbolic corpus is an entire algebraically constrained *scope of articulate-ability*.[56] This scope of articulate-ability is capable of rooting, within his engendered numerical corpus, a metric of poetical structure under *the strict governance of what counts how*: it is a metric that is both open for some interpretative instantiation, but that

Once architecture is open to embracing key paradigms of Information Architecture, architects can think about a "digital" order in a more instinctive manner, foreshadowing an imminent future in which "we're all becoming librarians" (MORVILLE 1998). Using computer-aided tools, architecture begins to operate "univocally" over an informational basis. From this point of view, architecture would be more adequately conceived of as a verb in infinite tense, as "architecting," rather than as a noun, in its substantiated form as "architecture." Yet its purpose, namely that of structuring things, remains unchanged even if we conceive of it in this infinitarily active manner. In essence, architecting is of a purely organizational nature and involves the composition of elements of very diverse types.

As the data that become accessible grow into unprecedented and unexpected amounts, the skills pertaining to the achievement of order and stability within the information ocean become of primary interest. It is not surprising that Information Technology (IT) and Computer Science are the leading fields in mastering these skills and in developing the techniques to do so. After all, they are natively familiar with information; their materials and their systems are also much "lighter" and they behave in much faster ways than those of the built environment. Somewhat surprisingly, in spite of the generally broad impact of these developments on all the ways in which we get organized today, the core principles and methods behind IT are not yet pervasively discussed and integrated in architectural design. One might argue that the reason for this is mainly one of availability and/or skills in dealing with the technical tools; but by holding this view, current architectural discourses and practices follow a different mind-set than the one that advances IT with such speed. Also in architecture offices and schools, computers proliferate today; free software, tutorials, and readers are surfacing ever so often, source code is being shared and discussed openly. Computer skills are acquired by more and more architects, and with it, the divide separating computer skills as an add-on from architecture more strictly is being overcome rather faster than slower. Yet what remains to be bridged is a conceptual gap—one between what we are actually capable of doing, and the way in which we think about what we are doing, with these new skills; learning from the "informational rationale" could be of great use for this purpose. This is perhaps the biggest challenge so far, but it might also yield the most intriguing results.

In Information Architecture, contemporary computational methods have enabled us to filter, disentangle, and interpret vast, raw data to produce useful knowledge. It may come as a bit of a surprise to learn that many of these methods emerge not from clear paths and predefined structures, but from uncertainty, vagueness, and impreciseness. Since the advent of the Internet and the subsequent information explosion (MORVILLE 1998), the primary interests in computation have shifted from sharing a set of "absolute truths" to establishing relative stability from scattered, partial knowledge. In short, it is a paradigm that aims (1) for resilience in its ability to react to variations, (2) for generality in response to growing diversity, and (3) for learning and discovery instead of securing and preserving existing foundations. Such a standpoint has allowed the development of a logic for imprecise prediction, forecasting, and approximation that is to a great extent empirically driven, and does not depart from assumed certitude and a priori reasons. The driving engine for this quiet but powerful revolution lies in the combination of abstract thinking, computation, and empirical experimentation by means of simulation, modeling, and articulation.

This research proposal seeks to explore how the aforementioned paradigm in Information Architecture may be integrated into architecture. With its help, it seeks to describe architectural design parameters and conditions in a significantly more applied, chaotic, complex, and emotional manner, in a manner that enriches the design process from conception to completion—one that ultimately affects



also embodies as a certain transpersonal, not strictly willfully postulated, necessity. For Meillassoux, it is the *being of chance*. So let's see how the meter that Meillassoux extracts from the sum of the poem's words is not simply a *representation* of the meter Mallarmé has worked in, but truly an *extraction*; that is, the result of an algebraic-symbolic procedure. And let us see what is meant by this "numerical corpus."

Because his procedure is itself masterfully artistic, and it would be silly to summarize it here, it must be sufficient to indicate in inverse terms how Meillassoux proceeds: he looks for the summation of the numbers cast by the dice throw, based on Mallarmé's line that says "Toute Pensée émet un Coup de Dés" (Every Thought engenders a Dice Throw). If the clue to the poem lies in identifying the *number that could not be any other,* so Meillassoux, then its "meaning" must be to achieve the inevitable engendering of this number (in German I would say, *ins Werk setzen*, tentatively translated as "to put into place and action") a thought of such nature, and this in a manner such that it unfolds by necessity when being read within the oeuvre. Hence, the identity of this number that Meillassoux is looking for cannot be given as a representation, it must be "placed" operatively. As he puts it:

> There is a trivial way, but by the same token accurate, of understanding this sentence. Instead of saying that this statement is about affirming, in a quite vague and rather mundane way, that every thought is a gamble, we can interpret it this way: every thought, insofar as it is formulated in a language, produces a series of random numbers related to language components necessary to formulate it. Our concluding sentence contains in fact, as any sentence, a certain number of letters, syllables, words, nouns, etc. These numbers are "engendered" by the thought that finds itself formulated in it, but they do not have in themselves any meaning—and particularly no meaning related to the thought at stake.[57]

57 "Il y a une façon triviale, mais par là même précise, de comprendre cette phrase. Au lieu de dire qu'il s'agit dans cet énoncé d'affirmer, de façon assez vague et plutôt banale, que toute pensée est un pari, nous pouvons l'interpréter ainsi: toute pensée, dans la mesure où elle est fomulée dans un langage, produit une série de nombres aléatoires liés aux composantes de langage nécessaires pour la formuler. Notre phrase conclusive contient en effet, comme toute phrase, un certain nombre de lettres, de syllabes, de mots, de substantifs, etc. Ces nombres sont «engendrés» par la pensée qui s'y trouve formulée, mais ils n'ont par eux-mêmes aucun sens – et en particulier aucun sens lié à la pensée enjeu." Meillassoux, *Le nombre et la sirène*, 32.

In short, Meillassoux substantiates his hypothesis such that the final code consists of the ciphers 7 - 0 - 7, and he legitimates the entire argumentative path that leads him to this number by showing that—if written as 707—it is indeed the number that counts all the words in the poem.

So if we explicate this procedure inversely, it strikingly resembles what any statistician does on an ordinary basis: he determines the "indexical magnitude" (often called *random*

architecture. The reaching out toward abstraction should not be understood as an attempt to suggest impossible spaces, unbuildable structures, or to drive architecture away from its traditional core of real buildings, and into cyberspace and game spaces of illusion. Rather, as we understand it here, abstraction is about finding commonality, about finding resilient and insisting invariances within levels of conceptual depth.

Throughout this text, abstraction specifically refers to that which gives rational means that are developed and applied in mathematics, logics, and computer programming. Abstraction is what is capable of dealing with any meta-activity (TURNER & EDEN 2013). Pursuing abstraction within the computational design process permits to include anything that can be indexed, measured, or counted as a potentially relevant factor. Like this, computational design opens up the traditional material palette with which architects are used to working. Architectural design can now also involve language, associative semantics, and emotional response. By indexing its patterns as computable data, such immaterial aspects can be translated into architectural substance.

The concrete interest of this project is to illustrate how abstract relations can construct spatial configurations whose form comes not from predefined geometries or references, but from synthetic grammars that follow a desired narrative. This narrative can tell any story, about people, about events, or about things. Architecture has paid a great deal of attention to matters of scale and proportion, mainly based upon the human body and its relation to space. However, architecture is not made up solely of bodies in spaces that can be composed in their interplay, but of experiences. Understanding architecture as a collection of experiences entails an understanding of space as a condition. Within the domestic, experiences are composed of architectural objects (affect spaces) and their relationships. These objects are increasingly being modified and affected

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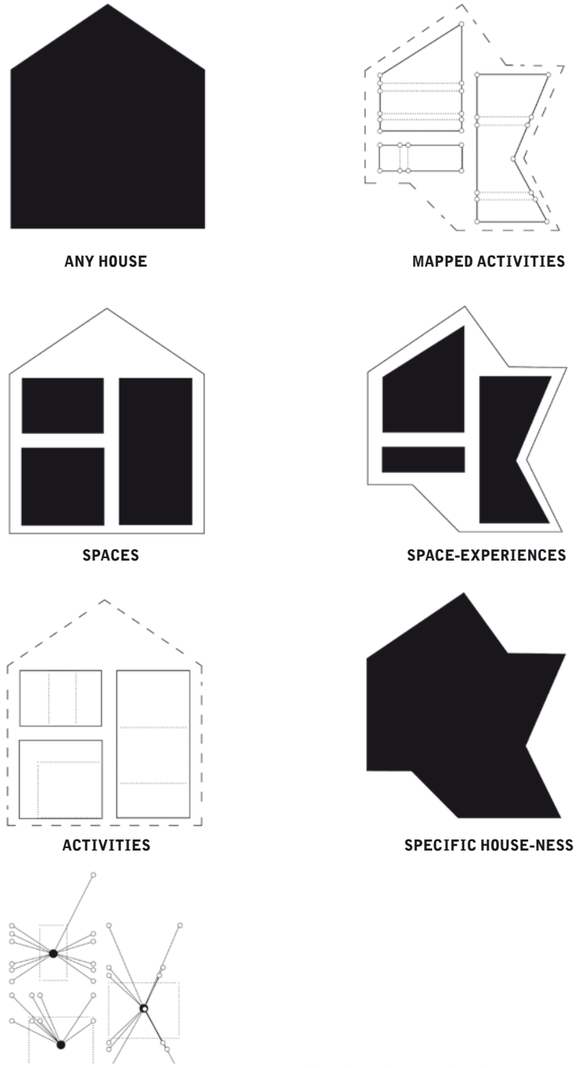

02 Conceptual workflow, from any house to a particular House-ness

by technology. It indeed requires some effort to ignore the pervasiveness of artifacts and their enhancing contribution to complement our quotidian activities. Interconnecting a network of everyday objects to track and compare data which they gather about how much, when, and in which ways we use them, might reveal a different set of notions of density, frequency, rhythm, intervals, resonance, and other landmark descriptions of spatial grammars throughout architectural history (ASHTON 2009). Considering artifacts as operators for experiences, a new kind of tectonics can be conceived, one that uses ensembles of ordinary domestic objects, of our things and our stories they are invested with, as units to articulate spatial design.

The final interest of this project is to reevaluate the notion of a house by considering dwelling as an informational model of human activities as they are described, organized, measured, and classified in terms of artifacts: a "House of Things."

HOUSE-NESS & DOMESTIC ARTIFACTS

Striving to shift from traditional dependency on geometrical elements to a dependency on a symbolic system of relationships that can encode magnitudes, quantities, and qualities according to our (various) abilities in dealing with them, implies fundamental revisions of current design methodologies. This perspective has two major entailments: (1) a critical examination of how the individual's scope of training and developing abilities in computational architectural design is unnecessarily restrained by the predefined settings of template procedures in software, and (2) a critical examination of how, and if at all, there can be room once again for an architect's intentionality and authority in the predominantly pragmatic and largely opportunistic-seeming praxis of contemporary and future architecture. This new role of intentionality and authority might concern the articulation and organization of a higher-level abstract "materiality" rather than the implementation of particular planning processes and designs. Architecture might perhaps regain a position of integrity if it finds ways of instrumenting the purely pragmatic, short-term projects as exemplary cases in which long-term interests can be pursued.

The issues addressed by this text so far, especially those regarding the relationship of architecture and technology, refer implicitly to a discussion about space at large, or more precisely about the process of how space is conceived. This can be regarded as the common denominator between Information Architecture and Architecture. For architecture, material and spatial order is traditionally organized according to a metrics derived from other material and spatial things. That is, architecture has been organizing concrete matter departing from concrete matter. Architecting, as the integration of the "informational rationale" into architecture, is capable of acting upon a much greater variety of "substances" other than extensive matter. Just like mathematics and information technology are operating on a symbolic level of substances that can be encoded in different manners, so architecture can also operate on a symbolic level.

If we think about it, the idea that architecture is made up of much more than "just" materials is not hard to acknowledge. After all, the dependency of space with its users is what ultimately defines, animates, and activates architecture. Without the experience, there is no architecture. This dependency directs architecture away from a mere validation by presence or absence of certain aspects, and closer to seeing in it a not fully reducible assemblage of engagements or emotional relations. Engagements happen between users and particular experiences. With the inclusion of the emotional, the idea of architectural experience becomes much harder to pin down. At the same time it becomes a much more general concept that can be tailored to specific scenarios or narratives. In this project, we seek a way of creating particular units of experience that remain valid to work with in a tectonic and natural architectural approach.

The approach to define the "units of experience," as it is pursued in this project, analyzes and classifies architecture into collections of spaces that are composed in a purely relational manner, around a collection of activities. Thinking in terms of "activities" decouples "functions" from representational notions that assume an elemental or archetypal spatial order. It separates programmatic design from strictly deterministic definitions, and hence creates a concept of "what can be done," as a space of potentials. In such a verbal mode of program, architecting allows to design with spaces-to-be, enabling a projected space that is flexible and adaptable, and which can eventually be materialized in a variety of ways.

But how to obtain, out of such abstractly projected experiences, a system of measurable and countable units, elements, and proportions, as architecture needs it in order to compose real spaces? To determine a spatial grammar and a set of objects to be assembled into design, we can call on technology's aid. The "Internet of things" foresees a network of appliances and applications that share and exchange data. Open-Source Hardware is making this a reality, easily endowing any artifact with an immense variety of "capabilities." Even though domestic artifacts are usually perceived as somewhat disconnected from, or foreign to, architecture, our approach is that they can be referred to for producing an accurate and rich description of our engagement with spaces, people, and the environment; domestic artifacts are seamlessly embedded in our daily routines; and because of that, they can be helpful for creating maps of experiences.

or *chance variable*) of which the possibility space "consists." All he needs for that is a code—e.g., the alphabetical code, or the Morse code, or any physically metrical measure expressed in digital code.[58] The creativity of Meillassoux lies, among many other aspects, in looking out for what might count as such a code for "probabilizing" Mallarmé's poem. More concretely, Meillassoux experiments with adjoining (metaphorical, nonmathematical) "domains of rationality" as such a code—for example, the musical scale of C major in order to determine which number is labeled by the expression *car si* (which returns in certain patterns throughout the poem). Such labeling numbers again indicates particular constellations that ask for further codes to decipher labels as pointers to the next steps in substantiating his hypothesis.[59] For example, he ascribes a specific importance to the numbers 5 and 7, links those to the stellar constellation of which Mallarmé says, in one line, that the final sum of the number-that-cannot-be-another is expressed in. An excerpt of how he renders this plausible:

> Yet we know […] the author of "The Throw of the Dice" held the stars in their pure dissemination like a celestial symbol of Chance. To cut by the gaze a constellation in this meaningless splendor is to perform a totally analogous act to the poetic act according to Mallarmé. For this poet is committed to make the words sparkle, forged and disseminated by the randomness of language, by the use of a confusing syntax in which each term appears isolated by a "gap" from all the others, as though decontextualized: allowing it to shine a light we had never known it capable of.[60]

58 Those interested in the background of communicational coding theory, and the role of entropy measure and chance variables therein, are recommended to look at the classic paper for communication theory by Claude E. Shannon, "The Mathematical Theory of Communication" (1948), where he describes the two modes of coding that are still central today, in the distinction they have introduced, so-called *channel coding* and *source coding*.

59 See Meillassoux, *Le nombre et la sirène*, 54–59.

60 "Or nous savons […] que l'auteur du «Coup de dés» tenait les étoiles en leur dissémination pure comme un symbole céleste du Hasard. Découper par le regard une constellation dans cette splendeur dépourvue de sens, c'est accomplir un acte tout à fait analogue à l'acte poétique selon Mallarmé. Car ce poète s'attache à faire scintiller les mots, forgés et disséminés par le hasard de la langue, par l'usage d'une syntaxe déroutante en laquelle chaque vocable semble isolé par une «lacune» de tous les autres, comme décontextualisé: ce qui lui permet de rayonner d'une lumière qu'on ne lui avait jamais connut." Ibid., 30.

61 In the second part of the book, entitled "Fixer l'infini," 61ff.

Although he does not mention it, Meillassoux is pondering one of the favorite themes in thinking about proportionality—the golden ratio. Two quantities are in the golden ratio if their ratio is the same as the ratio of their sum to their maximum—this is exactly what Meillassoux's reading will postulate (without stating it explicitly).[61] The golden ratio has inspired people throughout many centuries precisely because it provides maximum stability for maximally different "components" within a strictly proportional framework. This is why Le Corbusier famously integrated the golden ratio into his architectural measuring system that he called "The Modulor," and that he "rooted" in a certain partitioning scheme of the human body. But different than Le Corbusier, Meillassoux suggests rooting his "poetic

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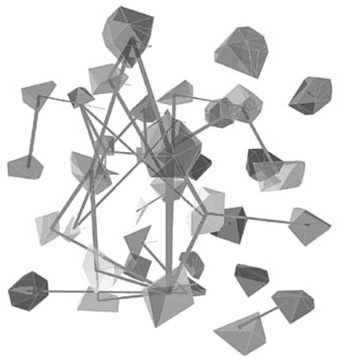

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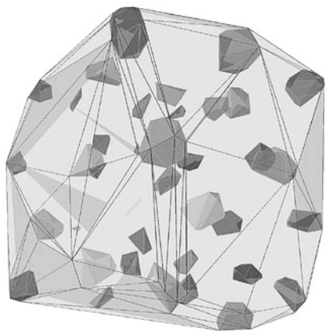

DEFINING HOUSE-NESS, DESCRIBING ARCHITECTURE

A house is described in terms of the spaces it contains. Spaces are then described in terms of the activities that are related to them. These can be obtained from existing plans, that is, by example or by any kind of relation (e.g., etymological, narrative, or statistical). A description of these activities can then be obtained by their relationship to artifacts. Assuming such artifacts are capable of gathering almost any type, size, or preciseness of data concerning the activities, content is generated through use. This "flattening" of a complex description into a homogeneous set of artifacts makes it possible to compare activities by merging notions of quality and quantity. New versions of the activities can be mapped to reflect a particular stance or feature. Finally new spaces can be composed of the modified activities, and a specific House-ness is created from them. [FIGURE 01]

Traditionally, the approach toward the understanding of space in design involves projecting the metrics of objects and bodies onto a spatial plane where they are to be arranged. In the proposed method, a distinct metrics of relations is put forth, describing a core relationship between household artifacts and activities. This complex relationship is projected onto an abstract map (SOM) and spaces can emerge by grouping potentially equivalent spaces. In principle, the relationship between artifacts and activities could be as rich as the amount of data that can be processed and collected. There is no real limit to the complexity of this description.

Enter lists. Architecture is complex. Attempting to model this complexity represents an enormous challenge. However, it is within reach to obtain seemingly endless arrays of information that can be arranged to produce meaningful combinations. We say seemingly, but it comes within reach also practically, since data can be collected at a constant rate. The challenge is not really a technical one, but a conceptual one. The principal strategy proposed consists in taking traditional spaces that make up a particular architecture, and describe them in terms of what happens in or around or because of them. [FIGURE 02] Such a description can never be exhaustive or definite; it cannot crystallize beyond its indexicality. The link to artifacts is a "degree of membership" or

03 Activity proto-spaces with similarity links
04 Activities and containing mesh
05 Training procedure for a House of Things

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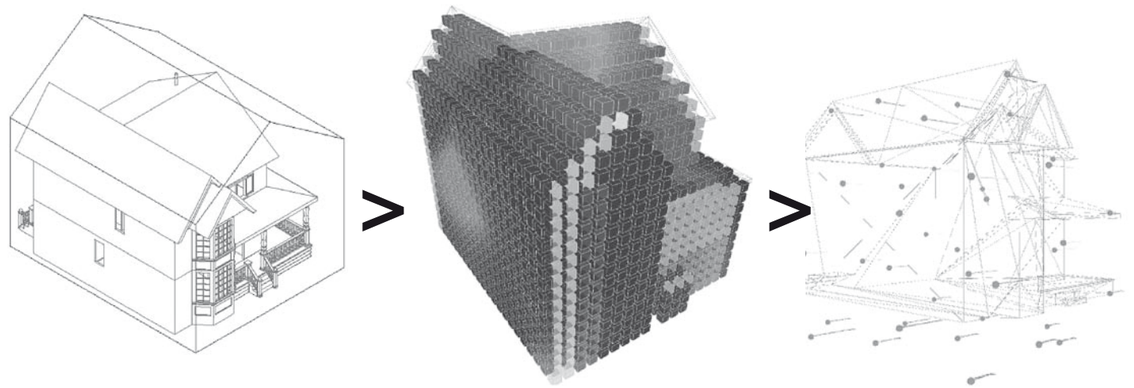
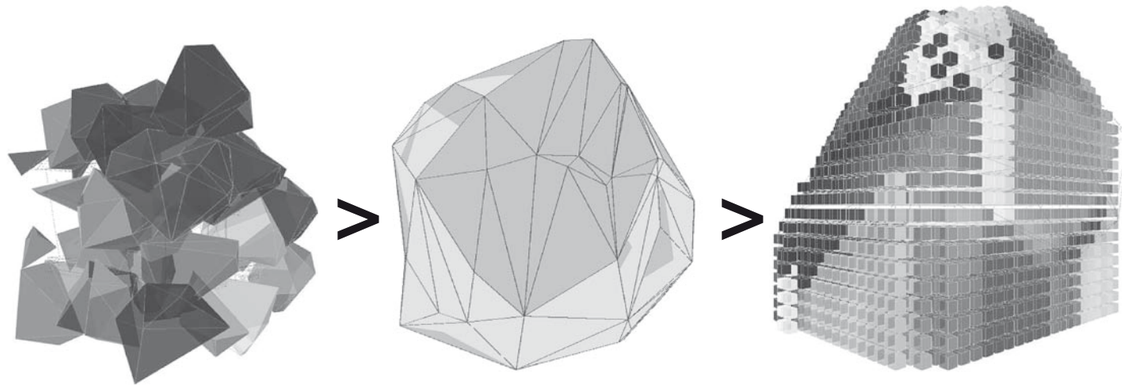
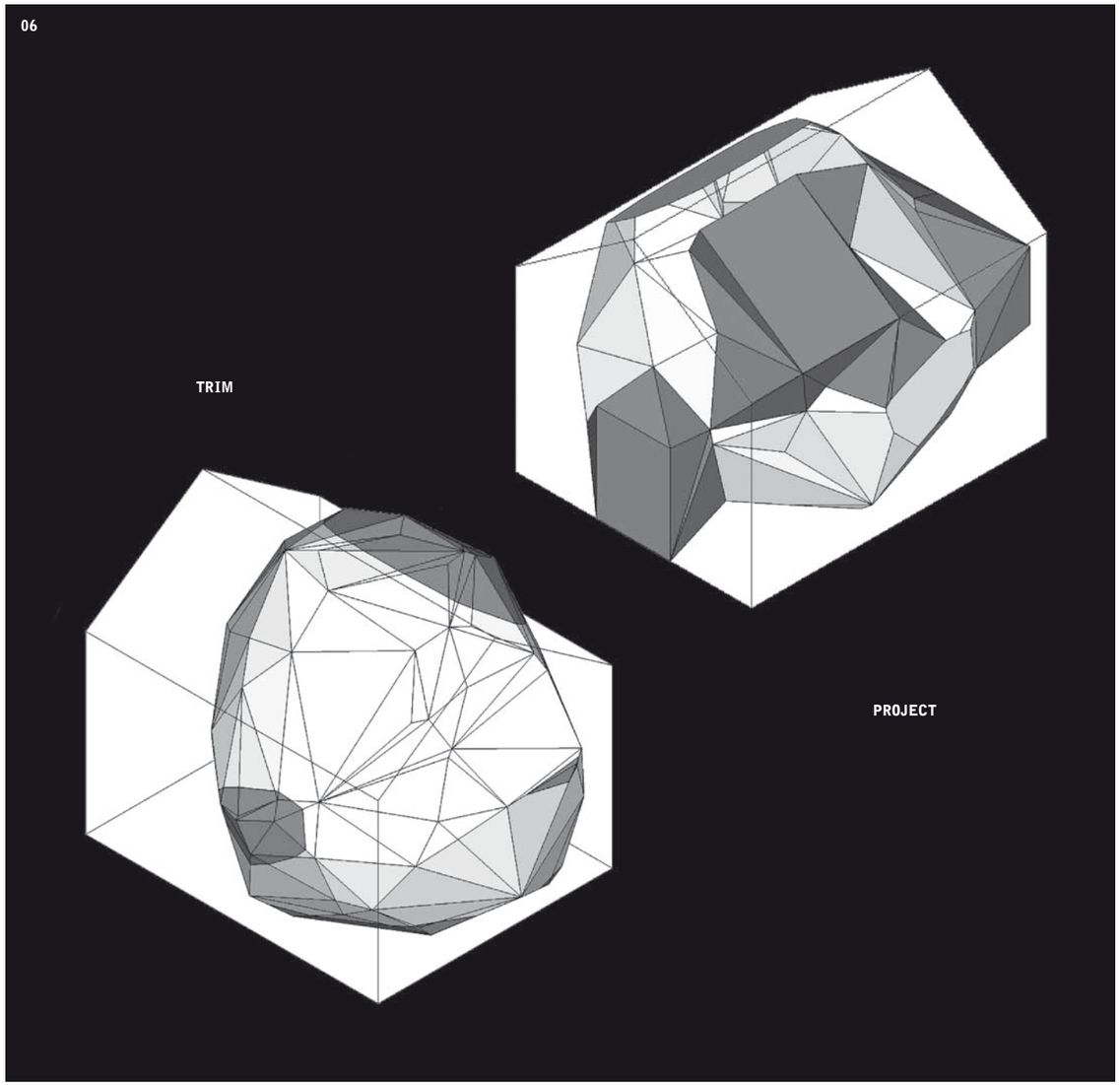


ANY HOUSE
[VICTORIAN HOUSE]



modulor" not in the profane human body but in the numerical corpus of divine chance. As such, Meillassoux takes the noninitiate reader through a fabulous and awe-inspiring journey to how he ends up with the number 707, which—in the finale of this speculative trip through possible codes—turns out to be, and I am sorry for the prosaicness in putting it this way, the chance variable we know from ordinary statistics, the sum of all the counted words. The number-that-cannot-be-another facilitates to carry out probabilistic analysis on Mallarmé's text. Even in statistics, a random variable is not a variable strictly speaking, for it has no fixed value. In other words, it is not a magnitude of which we could ask metrical questions like *how much*? What it does is *label a number* that *counts a magnitude* that is unknown. As such, a chance number (I would prefer to call it an "indexical magnitude") can incorporate a possibility space, and allow to experiment with it in probabilistic terms, by partitioning it into a set of events that can be combined in their interplay. Thus we can see how Meillassoux experiments with adjoining (metaphorical, nonmathematical) "domains of rationality" for his hypotheses. From the hypothetically postulated distributions, patterns, and regularities he seeks to extract a certain meter—and this means, in his case, nothing less than a proportionality of numerical infinity.



We can put this aspired context of an agnostic-spirituality-turned-into-a-civic-religion to the side, and consider simply in terms of method how Meillassoux proceeds in order to determine the unknown indexical magnitude (chance variable). His procedure might best be called "hypothetico-inductive," and because of its performed creativity, it can surely count as truly instructive for anyone working with statistical procedures. How Meillassoux proceeds is extremely interesting, which is only more impressive if we consider that on the formal level, it corresponds to ordinary standards in how probabilistic analysis works. Except that in scientific contexts, speculation and creativity in the determination of the chance variable is, of course, much less desired and appreciated. But there, as in the case of Meillassoux, the metrics (proportionality) "induced" can be tested "empirically" on the formal level (in the case of Meillassoux that of the poem), until a model is found that doesn't leave any inconsistencies that could not be integrated meaningfully into that model. With this model, he then works hermeneutically to make sense of it, providing its legitimation on numerical basis. This is how the role of the meter with which he works is not entirely arbitrary, but also not in any coercive way necessary. There might be other models of meter for measuring another chance

a labeling number that describes a potential or actual connection between activity and objects.

The basic relationship between the chosen activities responds to the following question: What artifacts are normally used, or lend themselves potentially to being used, while performing an activity? The program outputs a proximity map that backs up the supposed similarities between activities. However, the clustering, distinguished through color tones as a code, yields unforeseen groupings that could hint at new spatial configurations. Given the potential for discovering new relations, this map was translated into three dimensions, converting an abstract linkage into a scale-less spatial distribution. A cube is the starting point of the space bounded by the map. The program starts with a now three-dimensional random layout of the weight values for each node (they are called "neurons" in the machine learning jargon) and iteratively tries to represent the data. A simple interface allows to display progress, and adds basic control functions for viewing and saving different information.

A connectivity map [FIGURE 03] determines the possible clusterings that result from comparing activities. The emerging configuration of connected activities is logical and yet uncommon. The creation of new space "types" out of combined activities yields a significantly different programmatic scheme than can be achieved by traditional methods. The degrees of closeness or strength of the connections can be visualized in the thickness of the links.

It is also possible to reconstruct a geometry that gives a "face" to the activities; we suggest calling this a proto-space. These activity meshes [FIGURE 04] are created by selecting the highest value features (artifacts) from the original dataset, as the most influential ones or as the best descriptors of each activity. A point is then created for each high-rated artifact, forming a mesh that varies in shape, number of vertices, and color. Out of this proto-geometry, a different space can be created. An envelope wrapping the activities describes the volume that is necessary for the map to operate. This opens up other possibilities to explore the SOM's behavior on various topologies, site constraints, configurations, and settings. Volume can be understood as a map, creating both a space and a representation of spatial information: an inhabitable map.

Any particular geometry is therefore a suitable candidate space for mapping. For the scope of this project, only relatively simple geometries are used. However, looking at existing designs as envelopes for mapping could produce interesting results, reflecting the examples' aesthetic notions of proportion, or more functional ones like the maximum building volume for a specific location, et cetera [FIGURE 05]. This research project focuses on making use of abstract and potentially more comprehensive relations for architectural design. Therefore, a basic model of any particular house (in our case an arbitrarily chosen Victorian house) is chosen to reflect a spatial idea of houseness as a starting point. Further iterations derive from the dataset that describes the program of the chosen house. An apparently analytical process is driven toward synthesis by reconstructing the composing elements and creating fundamentally different arrangements. [FIGURE 06]

The final mapping produces a flexible definition of spaces, or more accurately, of boundaries between spaces. The actual constraint of spaces is left open for further decisions related to traditional top-down design strategies. The volumes that these boundaries occupy (they are seldom linear) could probably be utilized to contain spaces for all the technical fixtures or infrastructural utilities. This strategy of deriving contrast-driven boundaries is not far from an architect's attempts to separate spaces, classifying them into distinct areas by traditional means. There is a distance, however, that puts apart the two methods: the former method clearly profits from computational integration and manages to embody both analytical and synthetic procedures simultaneously.

FINAL REMARKS & IMPLICATIONS

A translation of the tectonic logic from a material to an informational model (assembling an architecture from data), and back to reality, might set the basis for the development of a new kind of architectural grammar. This sets forth an interesting scenario where constraints of the real world, together with possibilities of computation, strive for balance and confront the exactness of computers to the richness, ambiguity, heterogeneity, and dynamism of human interactions with themselves and their environments. This project intends to reflect upon plausible disturbances and complements to "traditional" design processes, regardless of the availability of robots, software, pencils, or paper. It intends to integrate a different set of architectural contents or "substances," extending the scope of operation for architecture. [FIGURE 07]

Considering data handling and analysis as an active part of architectural design could produce new visions of what "performance" means, or different definitions of "smartness" in buildings. The idea behind seeking to integrate within architecture the tools and the learning paradigms pursued in information architecture is to develop future designs and improvements to existing ones. If we want to liberate architecture from the doctrines of typologies, a necessarily different approach must be taken. In order to work with unclassified populations of houses, we can learn from those paradigms how relinquishing control enables developing a methodology of discovery, in which neither collection nor element provides the final authority of a "foundation"; rather, from their interplay we can "architect" a methodology based on the engendering of a synthesis. [FIGURE 08]

This could certainly be interpreted as an inroad from architecture to computer science. However, because of its broad scope, it seems only traditional of architecture to allow, or even to seek, the exchange of

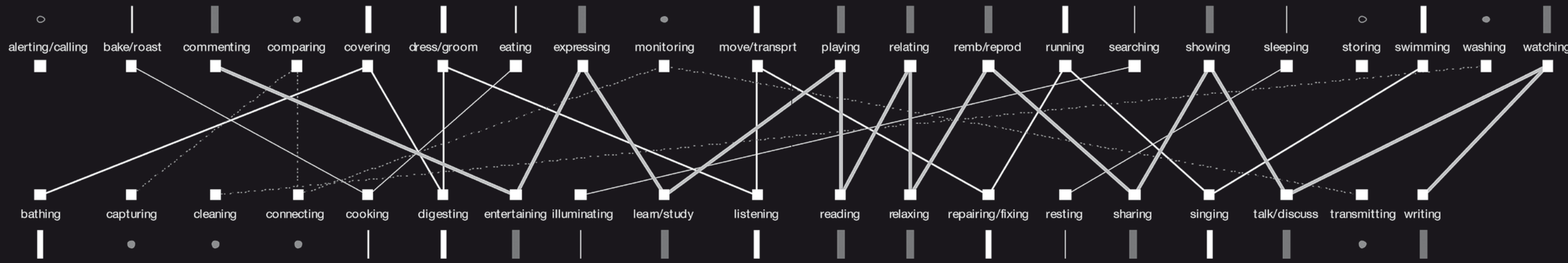
variable on the basis of which one could carry out numerical analysis, and that would very likely be capable of "substantiating" very different overall readings. This does not weaken the brilliance of Meillassoux's own reading, in my opinion. But it does introduce complications for the performative-lithurgic role he attaches to his reading. While I obviously do not share this programmatic stance, I very much share the interest in seeing a novel understanding of mastership, rooted in *symbolization within probability space.*

Cosmo-politics, or putting to work a symbolist meter

This novel understanding of mastership is rooted in a slight shift in perspective, which allows Meillassoux to look at Mallarmé's poem in this way: he does not read the poem in terms of how it articulates the nature of chance directly, but in terms of how it articulates the nature of chance through articulating the nature of numbers. Rhetorically, this is how he can begin his book with a powerful statement like "Let's get to the point directly" (page 9). The point he wants to get at directly is the nature of numbers. Yet, we must remember, according to Meillassoux this nature is engendered in the poem. So there can be no mentioning of "directness" in any strict sense. Directness—this is what we can pursue if we *presume* a nature of numbers, not if we attempt to evoke such nature in a poetically particular manner. The power of the opening of Meillassoux's book is a rhetorical trick that envelops in a veiling manner all implications that point in this direction. For him, as he makes clear later on, Mallarmé's act of articulating poetically the nature of numbers is *an absolute and singular act*—this is what moves him to see in the poet-author a figure no less eminent than that of Jesus Christ. The way he sees it, Mallarmé literally incorporates, in his oeuvre, the possibility of a *new poetic meter to come.* According to Meillassoux, Mallarmé is a figure as eminent as Christ because as the latter sacrifices his body, Mallarmé sacrifices the Corpus of his Oeuvre—the living "substance" of what makes him a master, by giving over the reception of it *to the unlikeliness that is proper to anything that is governed by chance.* This is how Meillassoux wants to read this engagement with the "indexical magnitude" of a "chance variable" within the Christian theme of transubstantiation. Within this Eucharist tradition, the sacrifice of Jesus Christ's body was "necessary" to evoke the unity of a community to come—anyone who believes in the actuality and truth of this happening was welcome within the community, whose unity is grounded on no other inclusion/exclusion criteria but the appreciation of this "act" and its particular

07

Activity relations and resulting spaces from sequences



KEY» [|] Seq. 1: 14 Activities (creative)

[|] Seq. 2: 10 Activities (functional/recreational)

[|] Seq. 3: 3 Activities (functional)

[|] Seq. 4&5: 2 Activities (passive)

[•] various Act. (service/routine)

[◦] isolated Act. (generic)

theological interpretation. Reenacting it brought absolution and purification of the members from their sins, and from their distinctions among each other, and constitutes the "force" capable of strengthening the Holy Communion. Meillassoux reads Mallarmé's *act* (of sacrificing *the corpus of his oeuvre* to the unlikely reception in the unlikely event that someone actually bears witness to his act, and proclaims its significance widely) in strict parallel to this tradition. He imagines also a people to come, to be united through reenacting the liturgy of Mallarmé's poetic oeuvre as a means to strengthen such a coming sense of community. Such union Meillassoux imagines as a truly postmodern communion; that is, a people who complement a *secularized politics* with a *poetic religion*. The daring cultural-historical symmetry evoked thereby is that of modernity in the position of the Old Testament, and the problem of how to continue modernity (which is our problem today) in the position of the New Testament. In his poetically grounded cosmo-politics, Mallarmé is stigmatized by Meillassoux as the only one and true master who has managed to gain victory over chance (which reigns within science and thereby unsettles the very values that are foundational of modernity; e.g., individual identity, self-governing subjects, scientific progress through steady refinements in approaching the realization of an ideal and universal [all-inclusive] order, etc.). Meillassoux, in his reading, reveals his own communal identity as that of those who know how to bear testimony to Mallarmé's symbolist and graceful gift to humanity—the act of his sacrifice.

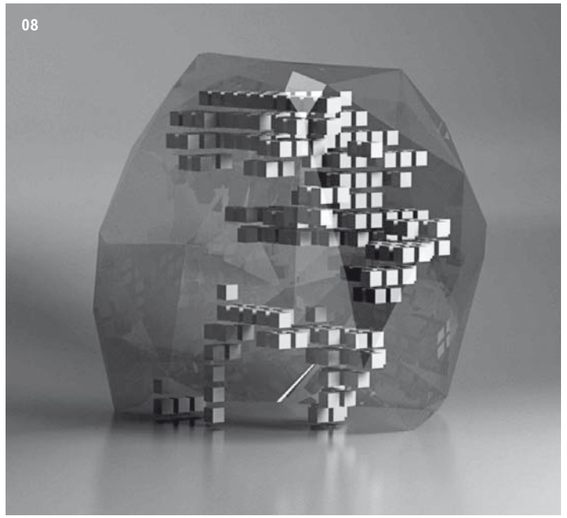
Cosmo-literacy, or the alphabetization of the nature of numbers

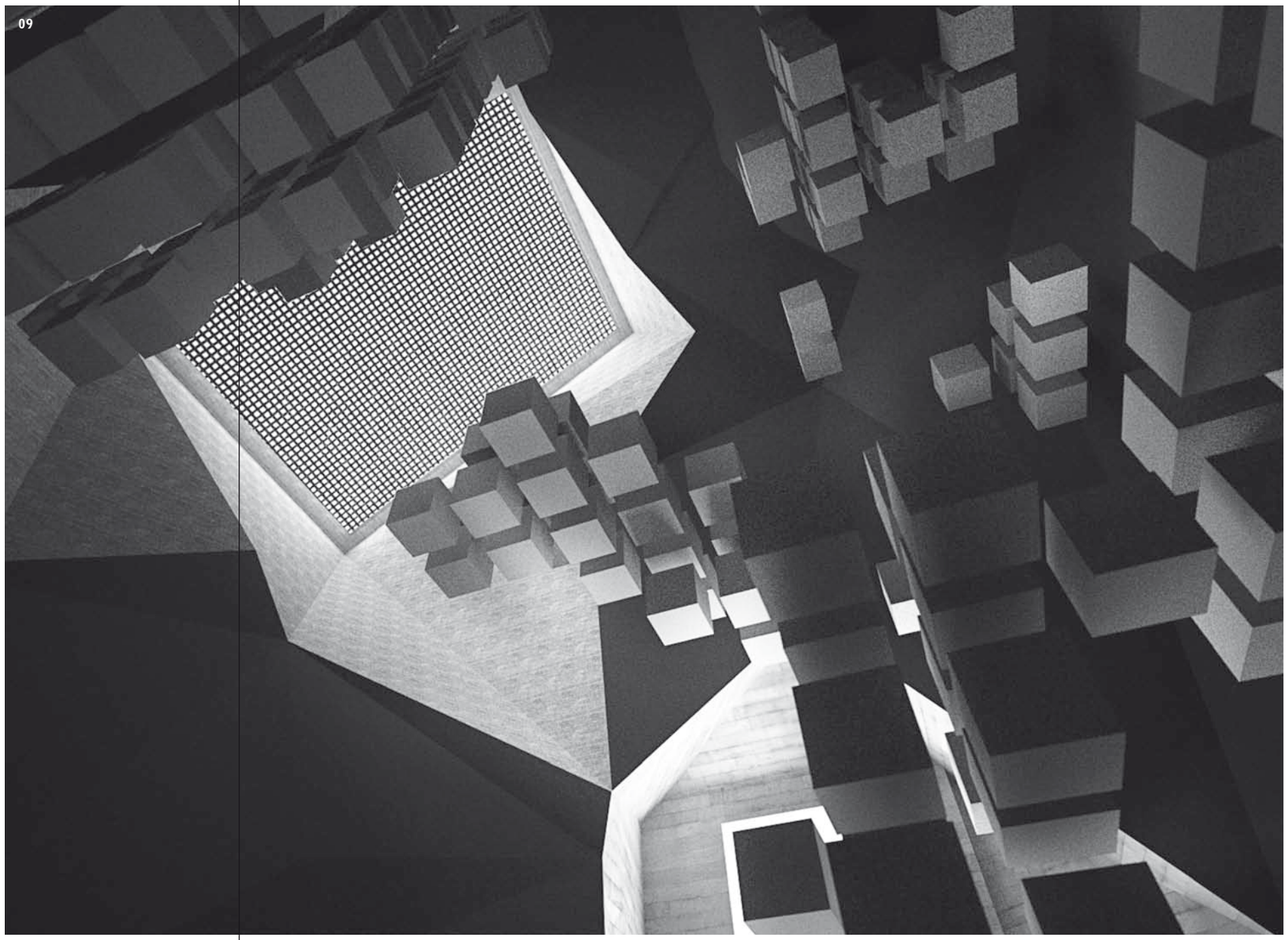
If we relate this interpretation to its recent reception, it may on the one hand strike one as unbearably uncomfortable, to the degree that one feels tempted to call it silly. Yet on the other hand, one cannot help but admire the conclusiveness in actually working with the text material as it is there, in the verses of the poem and the reality of the contextual questions raised, and this makes it equally an irresistible attraction. Indeed, it has been a while since a voice in philosophy has dared articulate such claims on such speculative yet precise grounds! But then again, such intimacy of philosophical thought with what we might call religious energies is straightforwardly *inevitable* if one seeks to resist the submission of philosophy under the ultimate governance of scientifically declared legitimization—that is, to free it from all forms of inspiration and spirituality. What Meillassoux does, and what can be decoupled from his *mission*, I think, is to expose a notion of

concepts across disciplines. In fact, integration or mediation could be regarded as the constitutive "Other" to those functions of architecting, which happen to be considered "essential." Although this project provides only a glimpse and an example of what can be done with these technologies, it is meant to provide an idea toward articulating how architecture could be affected by the "materiality" of information.

The notion of highly specified and determined spaces or capsules and their loosely defined relations has the intention of permitting to compose and recompose their configuration, affecting the overall structure but leaving its order untouched (JONES 2006). This could be interpreted as a kind of programmatic modularity (JONES 2006), producing adaptable or resilient assemblages and allowing to understand space no longer in terms of static places but as a complex condition. [FIGURE 09]

Function in architecture can no longer be thought of in the same way as it used to before the informational turn (BÜHLMANN 2010). Issues of mobility, generality, and materiality are being vigorously modified by technology toward lighter, faster, and programmable embodiments of functions. A tendency can be afforded to divert from the full-sized appliances with enormous spatial extension, to the imperceptible, ubiquitous applications embedded and distributed in tiny chips. Perhaps the scaled "components" in these novel capsules of programmable function or contained specificities can endure as "building blocks" for thinking order in architecture. This project explores the possibility to address technology in its own "language," assuming that it might become once as familiar to us as understanding the spatial implications of drawing a line or sketching a box is today. [FIGURE 10]

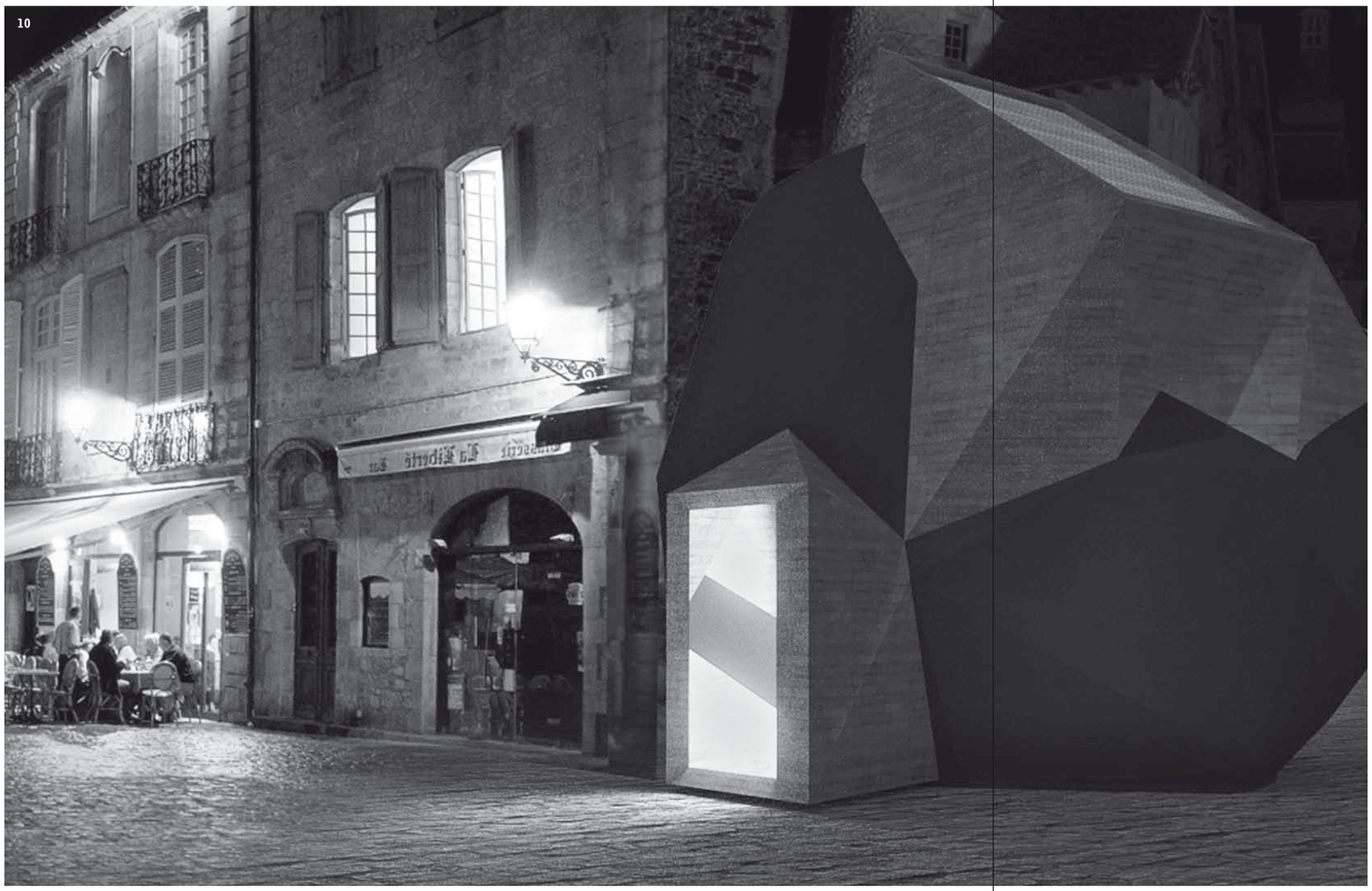




06 « Basic geometrical operations (architectural intentions)
07 « Activity relations and resulting spaces from sequences
08 Final envelope
09 Scenario for internal view
10 » Scenario for urban location

method that proceeds by scientific standards, yet hands it over to the field of aesthetics and art. From this perspective, and in order to appreciate the originality of Meillassoux's reading, one does not have to follow him in the mission he attaches to it. Mallarmé's poetic articulation of the nature of number, if we read it not as a poetic dedication in the form of a song of praise or an ode to this nature, but along with Meillassoux in a *quantitatively symbolist manner*, points the way of how we might consider *symbolization* as a means for learning *how to articulate numbers and develop mastership in dealing with the indexically and symbolically given "magnitudes."* Such mastership is grounded in learning how chance variables can be counted, literally in the sense of *ordered enumeration* (discretizing and grammatizing) but also more comprehensively in the sense of *governing*. If we affirm that modernity has disenthralled us from all hopes in Aristotelian-minded symbolization, as the articulation of the *voice of being*,[62] we might also affirm in Mallarmé's poetic *articulation of the nature of numbers* a continuation in the spirit of Aristotle. Since Pythagoras, and especially since Plato's *Timeaus*, the widespread idea about the nature of numbers is that the very "framework" of a cosmos that we can hope to understand by reason, consists in numbers. The numbers are the soul of the cosmos, which

62 Univocity is the crucial assumption in Aristotelian metaphysics. It demarcates where Aristotle departs from his teacher Plato, for whom the cosmic assumption (especially in the *Timeaus*) is a principle of analogy and proportionality. The book that Alain Badiou (whose faithful disciple Meillassoux identifies himself) wrote on Gilles Deleuze, entitled *The Clamour of Being*, clearly itemizes these sentiments in a straightforward polemic (Minneapolis: University of Minnesota Press, 1999; originally in French in 1996).



the Platonic Demiurge has mingled and mixed, cut into two to connect end to end, such that an inner circle comprehends all material becoming, while an outer circle comprehends all ideal being. Numbers make up the *auxiliary structure* for a *cosmo-logy*, they are the necessary *coefficients* in any formal term. Numbers are what is capable of *holding*, *literally*, a logical cosmos in order—we come back to this in more detail in the following paragraphs. Suffice it to say that from such a perspective, Meillassoux's reading of Mallarmé's poem would suggest nothing less than that the nature of numbers at stake is one that can now be *alphabetized*. If the natural numbers are what is capable of *holding*, *literally*, a logical cosmos in a universal order, by deriving criteria for consistency from the assumption of primary "fullness" or "perfection," the symbolic nature(s) of numbers need to find criteria for consistency by dealing with "primary abundance." Dealing with primary abundance would mean that no order of consistency (logical order), no such and such "fullness," can ever comprehend *all that might, virtually, be possible*.

Is not this a reading whose relations to poetry feel almost banal? While ancient meter was capable of liberating logics from directly stating truth and thus made room for poetic articulation, which may count as divine because it is neither comprehensively necessary nor arbitrarily contingent, the meter engendered by Mallarmé (and any meter that can be engendered in the same manner) makes room for *cosmo-literal articulations* of ideas that might characterize *a world to come*. But, we might ask, does the assumption of such a quantitatively symbolist manner of poetic articulation not indeed confront us, as Meillassoux seems to hold, with a sheer *impassability* (in German, *Ungangbarkeit*)? To count as *poetic* (and not political) articulation it would be essential for such a symbolist manner *not to treat this nature that it articulates (that of number) in a violent manner*. It must affirm this nature's dignity—i.e. as inexhaustible by the reasoning of finite synthesis or speculation—while nevertheless setting out to articulate it as a means to communicate that which *does not avail to appropriation by reason*. In short, it must respect its "integrity" and "identity" neither on the transcendent grounds of *sufficient reason*, nor on the symbolist grounds of *infinite speculation* (as Meillassoux proposes), but on symbolic grounds of *finite synthesis*. Such respect would be the core aspect of a truth notion that is worthy to be called that of a critical rationalism.

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Appropriating a body-to-think-in

One of the arguably most influential documents of the history of Western Culture—Plato's dialogue *Timaeus*—tells, in the form of a myth, the coming into being of the cosmos *such* that we can conceive of it logically. The cosmos turns into *the subject of knowledge* in Timeaus's account, and

he conceives of it *as a symbolic body*—the cosmic animal—whose corporeality he conceived, somewhat surprisingly perhaps, already 2,500 years ago as being constituted *by numbers*. In Plato's cosmic animal, there is but *one* nature of numbers. Today, with universal algebra, we have as *many* natures of numbers as we can symbolize consistently into structures. We call them by the names of rings, fields (*Zahlenkörper*), modules, and the like. They work with matrices and "animate" relations—animate because vectors are lines that embody direction, they have a "motive force" or "cause" *immanently* to the relation they incorporate. We call algebraic structures universals, in the plural, and each of them has "one-of-a-kind" scopes of how their organization may be articulated. Much of our technics today is ordinarily dealing with such abstract structures. At the same time, philosophers and mathematicians are initiating veritable battles around how these structures are to be rooted and identified (the so-called Foundational Crisis, and more recently, the struggle between set theory and category theory for primacy in settling, as in the former, or overcoming, for the latter, the issue of foundations).

Let me perhaps indicate initially where I intend to lead this line of thought. What I would like to consider is viewing what we readily call "a symbolic corpus" outside the confines of *representational* speculation, reflection, and mimesis, and instead in terms of indexical speculation, reflection, and mimesis. Such an *indexical* turn would entail relating to the symbolical corpora of mathematics not as we relate to a constellational order of the heavens, but *as we relate to our bodies*. Our bodies too do not fully avail to reason, and they constrain our sensual and motor capacities. Might not the notion of "a body" be a better word than the notion of "a house" for picturing what the philosophical tradition has strived to conceive as *the architectonics of reason*? A body-to-think-in, with proper constraints of *intellectually sensual* (intuitive) and *intellectually motor* (literate) capacities? Is it possible that we are so much accustomed to an understanding of numbers as giving us the one and only framework within which things can be rationalized and appear consistent, that the assumption of treating them as bodies-to-think-in sounds too frighteningly strange? Even if one might feel spontaneously compelled to agree, the question that motivates such a daring shift in perspective has been up and on the table for more than a century: *How might we come to terms with universal algebra, its symbolic corporeality by probabilistic methods, and the generic instances that are articulated out of it?*

The most common representation of the nature of numbers ...

To put it in words we all remember from our school days: we take the positive integers as the proper class of natural numbers;[63] we know we can symmetrically mirror them to negativity—for the sake of *speculative* analysis; and we remember that the boundedness among the integers can be "spelled out" into ratios (the rational numbers)—if only we put the integers into mutual relations. Of course we also don't forget the irrationals, those numbers that yield an *indefinite* value when they are put into a "ratio." Despite their name, they are not too troubling anymore. There are sophisticated limiting and bounding processes with logarithms and series such that the *counting in* of irrationality seems like a reasonable and respectful tribute to be paid to the vastness of real numerical nature. An illustrative picture for this concatenated and comprehensive nature of numbers is the continuous number line. With its totality, including rationals and irrationals alike, we associate today the domain of real numbers. To put it straightforwardly: the *real* numbers contain *all that can possibly be marked out by reason, as rational or irrational, and hence understood about numbers' nature*.

... and how it got into trouble still not resolved today

This was still the firm belief of one of the founding fathers of a logical calculus, Gottlob Frege (1848–1925) when he assumed—not unlike a *prosaic* double of Plato—the existence of a transcendent realm where the class of natural numbers rests as "objects," eternally and ideally, and given directly to human reason without requiring mediation through the senses.[64] With his text *The Foundations of Arithmetics: A Logico-Mathematical Enquiry Into the Concept of Number* (1884) we have another strong story about the nature of numbers by one of Mallarmé's (1842–98) own contemporaries. While Mallarmé (according to our discussion above) has taken the Platonic *numerical* ideality and turned it into a *probabilistic* one, Frege took it and turned into a *logical* one. Only three years after Frege, Edmund Husserl also wrote a treaty entitled *The Concept of Number* (1887). He published his own book entitled *Philosophy of Arithmetics* (1891) only four years later. While Frege meant to engage strictly logical issues in such elementary consideration with the intent to purify reasoning, at least ideally, Husserl instead meant to complement logical issues with psychological issues—which he hoped to be capable of treating

63 Starting from two. Even within a nature of numbers so conceived, the integration of the zero for nothing and the one for entity remains a crucial obstacle for any exhaustively explanatory consensus.

64 For him, the explanation why humans have been capable of "inventing" mathematics as the core power of reason, is that these idealized natural numbers are "reason's nearest kin." "Frege's central claim in the *Grundlagen* was that in arithmetics we are not concerned with objects which we come to know as something alien from without through the medium of the senses," writes Michael D. Potter, "but with objects given directly to our reason and, as its nearest kin, utterly transparent to it." *Reason's Nearest Kin: Philosophies of Arithmetics from Kant to Carnap* (Oxford: Oxford University Press, 1996), 79.

65 See page 86.

66 Rancière, "Who Is the Subject of the Rights of Man?," 304.

67 Israel Kleiner, *A History of Abstract Algebra* (Basel: Birkhäuser, 2007), 8.

with equal rigor as is possible for logical issues. We cannot go into this theme in much breadth here, but let me briefly recapitulate the larger context and how it relates to our two conceptual persona, the generic and the master, and the possibility to see, in what they open up in their interplay, the birth of bodies-to-think-in that are *collective before they can be appropriated individually*, and whose nature is engendered together with the symbolic corpus of numbers according to which they are organized.

First, let us take this background as an indication that indeed something larger than a poet's personal resignation vis-à-vis the rise of free verse must have been at stake in the nineteenth century. This seems all the more justified if we remember that the mathematician George Boole (1815–64), whom I have already mentioned earlier for having been accused of proceeding in a strikingly similar manner as Meillassoux does in his reading of Mallarmé—namely of "bringing forward definite solutions from treating indefinite problems symbolically"[65]—preceded all of these investigations on the nature of numbers by a few decades. His main work was entitled in all due provocation, *An Investigation of the Laws of Thought on Which Are Founded the Mathematical Theories of Logic and Probabilities* (1854). To view Mallarmé in this context adds a lot of plausibility to Meillassoux's shift in perspective, namely that the poem is not directly about the nature of chance, but about that of numbers. But not only this. It also tells us something important about our context and interest in computability, design, and the generic today—it allows us to see the force of what Rancière calls dissensus at work *in all that can be computed*. Let's recapitulate again: dissensus is "not a conflict of interests, opinions, or values" but "a division put in the 'common sense': a dispute about what is given, about the frame within which we see something as given." While on the level of generic instances, those one-of-a-kind particulars that can be instantiated and modulated within the framework of a master model, we might only negotiate "conflicts of interests, opinions, or values"; what is at stake with a criticality on the level of the master models is indeed dissensus as "a division put in the 'common sense': a dispute about what is given, about the frame within which we see something as given."[66] This is why we ought to treat the *instances* of generic computing as *pre-specific* rather than as *typical* (which would be to view them as generic in an adjectival, not in an adverbial, sense), and the respective master models as what they are: models that owe everything to mastership, and not to some *generic* "*nature*." But let's look more closely at how this background in number theory relates to computation.

Algebraic operations, or how the nature of numbers can be brought to work

As sketched above, the understanding of the nature of numbers has indeed been bracketed and marked as "something to be put in question" throughout the nineteenth century. Yet this was not, however, a result of pure intellectual curiosity and ideological speculation, but of the facticity of technical eminence: The taming of electricity equally rests upon calculating with a domain of numbers that does not fit within the continuity (represented as the real number line) within which *all that can be called natural about numbers* ought to be accommodated. Calculations that regarded waves and currents had to be rooted in a numerical domain that is organized by a peculiar unit, of which it is *indeterminate what magnitude* (which physical quantity) *it allows to measure*. Descartes had suggested calling this unit "imaginary," only to discard it as irrelevant and purely speculative—the imaginary unit is that of the square root of minus one. The "impossibility" it manifests is obvious: surely everyone remembers from somewhere that arithmetically, the multiplication of a negative number with itself must yield a positive result. Hence, it ought be categorically impossible, or at least sophistically meaningless—i.e. without any real consequences—to extract a root from a negative quantity. And yet, it does yield consequences, and not only that, it yields consequences in reliable and modular manner: as Israel Kleiner accounts, in his book *A History of Abstract Algebra*, mathematicians have "given meaning to the 'meaningless' by thinking the 'unthinkable,' namely that square roots of negative numbers could be manipulated in a meaningful way to yield significant results."[67]

All of electronic technics, including information technology and quantum mechanics, rests on the application of this particular numerical domain—whose magnitudinal referent is symbolically determinable, while remaining physically (and philosophically) "unthinkable," "meaningless." To put it more simply, it remains unclear of what such a "how much" can be determined. The imaginary unit allows measuring whatever is indexed within the systematicity of a symbolism, and this makes it so peculiarly "unnatural." Unnatural, that is, unless one were to assume a *nature of such a symbolism whose magnitude is only indexically given*. And this is exactly what was at stake throughout the

nineteenth century as the development of abstract algebra prospered more and more. The disputes indeed centered around whether we ought to assume different natures of numbers—a variety of different numerical genera—and if yes, how many.

The *nature of number* might not be *one*: Alfred North Whitehead attempted to gather all these developments in a first systematic study under the troubling caption of *Universal Algebra* in 1899. It was a work that cleared the view on these developments and stated as straightforwardly as it was groundbreaking:[68] the problem at stake is the relation between mathematics and logics. To be clear on what we are talking about—why was this groundbreaking? While logics promises to give *adequate* classification of the nature of things (or in the modern paradigm: the determination of objectivity), such *adequacy* has rested for Plato (as well as again later, for the moderns) on the assumption of *finitude* on the empirical side of science. If we start out from things as they are manifest corporeally, in terms of *magnitudes* that can be *measured*, we can depart from very basic (and through that very secure) assumptions, and reach gradually more and more abstract heights through speculative generalizations. Such is the trust in scientific method by the moderns in a kind of science that lets itself be guided by the logics of finitude, as opposed to spiritual doctrines that all involve infinity. It rests on the assumption that the nature of number is one and that number is universal. From this nature, hence, it ought to be possible that one can extract universal principles that are capable of treating all things equally, and therefore justly. Such universality was seen by Frege and Husserl, and many others at the time (and still today), in arithmetics. The suggestion of Boole, on the other hand, was to ascribe the status of universality to algebra instead of arithmetics. This opens up the notion of the universal to *infinitary determination*. Algebra has been understood, always, as the art of determining unknown quantities through procedures of articulating the proportionate terms that in their interplay make up a formula; with the elevation of its status beyond its merely *representational* character (what Meillassoux calls "the correlational"[69]), the meaning of "unknown" opens up the modern tradition of keeping the scientific and the artistic, in its entanglement with some sort of spirituality, strictly apart. It releases instead a nature of the technical—the means for artifice—in an unbounded condition between mastership and schematic repetition, in which all questions of legitimacy are once again unsettled.

The consequences of affirming the infinitary methods are such that we can no longer maintain in an unproblematic manner that the universal—*that which is to be regarded as the property of all things*—accommodates *naturally* the categories we apply, even in the natural sciences, as they too, meanwhile, fall within the domain of technology. Affirming to work with infinitary methods entails dealing with an inverse situation: the categories we apply, in science as elsewhere, determine what can be treated as universal. In all radicality, this amounts to saying that *universality* appears as a kind of *wealth*, it means that the universal can *prosper* or *decay*. It means that there is an economical dynamics constitutive for what counts as universal; it means that *that which can be the property of all things* can be more or less prosperous and that this prosperity depends upon the capacities of intellectuality.

This might seem a little like sophistry, admittedly so. And indeed, this criticism has accompanied the disputes around the nature of numbers from early on. Rafael Bombelli, who contributed much to the development of a calculus of this peculiarly imaginary numerical domain (constituted by the *imaginary unit*), wrote already in the sixteenth century that the development of such a calculus "was a wild thought in the judgment of many; and I too was for a long time of the same opinion. The whole matter seemed to rest on sophistry rather than on truth. Yet I sought so long until I actually proved this to be the case."[70] The calculus he developed worked with articulated formulations of the One according to rules such as $(+\sqrt{-1})(+\sqrt{-1}) = -1$ and $(+\sqrt{-1})(-\sqrt{-1}) = 1$. These rules allow to define, mathematically, addition and multiplication; yet these definitions do not apply to all numbers *in general*, but only to numbers that are members of numerical domains that form corpora, and which are specified according to their immanent partitionability and organization.

This is the level of abstraction proper to algebraic number theory and all mathematics and logics that work algebraically; today this entails nearly all of applied mathematics. The philosophical problems entailed thereby had been systematically put into its proper relations by Alfred North Whitehead in the abovementioned book *Universal Algebra*.[71] Let me add, perhaps, that the relevance for keeping track of developments on such an abstract level, which urges us to assume a symbolically (not naturally) determinate "nature" of numbers, is crucial for developing an understanding of what we are actually *doing* when we work with *universal code* in computation. Anything that we regard on the level of its electric materiality must count as a manifestation of such

68 It is clear that Frege's suggestion regarding the transcendent *one nature of numbers*, as well as that of Husserl regarding a *psychologically differentiated* one nature of numbers, both aspire to ward off what Whitehead faced boldly—the universality of algebra (not of arithmetics), and with that, the nature of numbers as subject to categorial determinability.

69 See Meillassoux, *After Finitude*.

70 Quoted in Kleiner, *A History of Abstract Algebra*, 8.

71 A book that he wrote before he set out, together with Bertrand Russell, to once and for all clarify the troubles in their seminal work *Principia Mathematica* (1910–13). Whitehead's subsequent turn away, after the acknowledged failure of the approach proposed in *Principia*, from analytical philosophy and toward a new kind of metaphysics in *Process and Reality* (1929), must surely be understood in terms of his awareness of the profundity of the problems involved.

72 I think it is hardly an exaggeration to say that this lies at the heart of the new attention philosophy started to attribute to a primacy of *difference* beneath all possible notions of *identity*, from Kirkegaard and Hegel via Nietzsche to Heidegger, Derrida, Deleuze, and Lacan.

73 Serres, "Revisiting *The Natural Contract*."

74 Gertrude Stein, "What Are Masterpieces and Why Are There So Few of Them?" (Los Angeles: Conference Press, 1940), http://gaslight.mtroyal.ca/masterpieces.htm.

symbolically engendered nature.[72] Its nature can be determined based on probabilistic measurements—measurements that we carry out today, usually without much consideration, in terms of *information*. It is before this background that Michel Serres urged intellectuals across all disciplines, in his lecture from 2007, to engage with the fact that the storage, treating (processing), emission, and reception of information is the "quadruple characteristic in common between all the objects of the world, living or inert."[73]

Masterpieces, and why there are so few of them

So we can see how much this peculiar procedure that Meillassoux "detected" in Mallarmé's poem is indeed a procedure that is affine to what preoccupied anyone who followed the development and the rise of *universal* algebra. Mallarmé, with his desire to link abstraction directly to poetic texture, and his poetic interest in *evoking through* words rather than *describing with words* (which became famous as *the mark of symbolism in art*) certainly was following all of this. It seems more than likely that with his fascination for "absolute truth" he attempted to draw the consequences from what he saw happening to the idea of the universal. He hoped to be able to continue the cultural legacy he was ambitious to contribute to, poetic verse and the dignity it had always been attributed, by reconsidering, poetically, all these issues around the *nature(s) of numbers*, the *nature(s) of counting*, and *the modalities of mastership* in relation to both.

Meillassoux's reading is original in the way he found to *quantitatively* engage with the symbolist tradition in poetry. It stresses the interest in attending to the powers of symbolization in terms that are not strictly "linguistic," thereby reducing reality to language and relations of reference and interpretation. Instead, he draws our attention to terms in algebra that are best called "formulaic." What it stresses is not only the "nature of numbers" as problematic, as something that needs reconception, but also the "nature of formulas." It is in this vein that another document from the early twentieth century is important to consider: Gertrude Stein's 1936 lecture, "What Are Masterpieces and Why Are There So Few of Them." In an inverse manner to what we have discussed so far, she does not so much attend to clarifying the "belonging" or "authorization" of the voice with which the figure of the master articulates his evocations. Instead she draws attention to the articulated evocations themselves. Stein insists on the *reality* of masterpieces, in all their problematics. For her, a masterpiece bears testimony *to the fact* of acts of engendering. She sees them motivated out of a principle unsettledness of any identity issue, the identity of the master as well as the identity of the subject matter a master masters. "It is not extremely difficult not to have identity," she says, "but it is extremely difficult the knowing not having identity. One might say it is impossible but that it is not impossible is proved by the existence of masterpieces which are just that. They are knowing that there is no identity and producing while identity is not. That is what a masterpiece is."[74]

EigenArchitecture

Like Stein, we want to hold onto the idea that *articulations of things entirely in their own terms* is not an absolute impossibility, although it certainly seems a paradoxically tautological idea. Yet this is one of the core interests behind what we wish to thematize in this book as *EigenArchitecture*. We are interested in a literacy that arises out of such an algebraic, formulaic, and apparently tautological notion of identity, a literacy that cultivates the infinitary articulate-ability of the One (identity). If we affirm infinitary methods in computation, the terms that express an identity are not *nominal* terms, but *polynominal* terms. And polynomial terms, unlike nominal terms, are capable of settling their clauses in amphibolic multiplicitous structures. Every polynomial term involves variable values and constant values, of which the latter can be "spelled" by attaching them to constellations of coefficients that can be designated and balanced. In other words, they *participate* in a quantity that is yet to be determined. Polynomials name terms whose literalness needs to be characterized. They are quantitative, yet the quantity they comprehend is not a fixed value, but a genuinely relational value. They comprehend *ever so much* as the term is rendered capable of bounding within the constellation of amphibolic multiplicities that makes up the system of formulas in which polynomial terms feature. Properly speaking, the determinability of this *ever so much* is *adjoined* to the terms. It is in this manner that we can speak of *articulating a thing entirely in its own terms*. In qualitative terms, however, such articulation of course depends upon how developed and differentiated the literacy and mastership is of the person who articulates.