

Generic Mediality, Post-Alphabetical?

by Vera Bühlmann

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„Algebra is the art of subsuming givens under a rule“
(Immanuel Kant)

There are phenomena that are to be considered as *genuinely simulacral but nevertheless real*, Mark Hansen has just maintained in his talk “Entangled in Media, Towards a Speculative Phenomenology of Microtemporal Operations”.¹ And, he suggests, this is not a capitulating gesture but one of intellectual reclamation: Phenomena, if they are mediagenic, as I would call them – i.e. if it is technical augmentation rather than „natural“ bodies directly that render them apparent and perceivable in the first place – then they can be approached within the framework of what Hansen calls „speculative phenomenology.“ My paper will focus on the peculiar role that technical *channels* play in such instrumentally augmented perception. My response then to Mark Hansen’s presented program of a „speculative phenomenology“ will highlight the importance of the role of codes, symbols, ciphers as an extended sense of „the alphabetical“ for theorizing a „mediagenic real.“²

Assessing the potentiality of what-has-not-happened

In my understanding, Hansen’s genuinely simulacral phenomena are phenomena in which something is at work similar to what Deleuze has called *dark-precursors*³ – Hansen’s phenomena

¹ This text is based on the response I was invited to give to Mark Hansen’s keynote lecture „Entangled in Media, Towards a Speculative Phenomenology of Microtemporal Operations“ at the Philosophy After Nature Conference in Utrecht, September 2014.

² The sense in which I refer to the alphabetical might raise the expectation that the following arguments will resonate with Brian Rotman’s increasingly well received work on ciphers and on the alphabet, but this would be somewhat misleading. In his study *Signifying Nothing: The Semiotics of Zero* (New York: St. Martin’s Press, 1987), the rise of algebra in Renaissance Italy is described as the beginning of an ongoing reign of a meta-order that begins to relativize “an alphabetical” order. This tendency is seen as completing itself in what he calls, for example in “The Alphabetic Body” (parallax, 2002, vol. 8, no. 1, 92- 104), the end of the alphabetical. In this, my own stance differs: My interest is to examine how long before an explicit sign for the symbolization of zero has been invented, ciphers have been at work in symbolizing nothingness (albeit not in signifying it). My focus is on the mutually implicative relation between the alphabetical and the numerical in code – as it is constitutive for information science today, and as it can also be studied in the early rise of algebra. Thereby, I want to address the strangely neglected status in today’s philosophical approaches to communication and media of the diverse, and yet peculiarly so “void” character of symbols that operate in algebra as pure place holders and substitutes. We are dealing with many nothingnesses, to put it a bit dramatically. Recognizing this affords to gain a technical understanding of communication channels through the encryption and decipherment of cryptograms – an aspect not at all thematized by Rotman’s linguistically-semiotic perspective.

³ In *Difference and Repetition* (1994 [1968]), Gilles Deleuze introduces the concept of the dark precursor as something that affords communication within an element of what he calls „the disperse“. The dark precursor is called the „in-itself of difference“ a “differenciator”, the “the self-different which relates different to different by itself” (119) and it is meant to afford communication between heterogenous series. The characterization on which I rely most with this proposed analogy to Hansen’s mediagenic phenomena, of which he says they originate in a kind of speculation that is driven by microtemporal operations of media, is this: Dark precursors

depend upon speculation, what appears in them is neither predicative nor directly anticipative, but they are also not quite premonitions, because it is not a message whose content is sinister that these phenomena have to deliver, and neither are they, despite their simulacral nature, apparitions that merely pretend to be what they in reality cannot display and effectuate. Mediagenic phenomena, in Mark Hansen's project, are accredited a reality that is genuinely natural, and hence can be approached in the registers of physics, because they correspond to real magnitudes which manifest in nothing else but the discretible and registerable, physical, actuality of their apparent appearance – i.e., their *mode* of appearing. I call their reality “genuine” because these phenomena are not in need to be legitimated and authorized as „substantial“ by way of testing and determining what may have in *fact*, that is, in a linearly preceding *past*, caused them. All the abundant reasons that confluence and cause the effects they display are to be looked for „entirely within the present“, as Hansen insists.⁴ It is not *despite* but rather *because* of a peculiar kind of non-signifying autonomy – we could say their impredicativity – that Hansen attributes to these phenomena by treating them within the quantitative registers of physics, that simulacral phenomena – like global warming in his example – can help us to *pre-hend that of which we know not (yet) how to assess, how to measure and relate it*. Such phenomena are like speculative integrals, meant to embody rational, calculate-able links between the global and the local, between the predicative and the predicated, in our case between climate and weather. Hence the reality Hansen claims for his simulacral phenomena, and the magnitudes in which they manifest themselves, is not a representational one, but a performative, or rather: an operative one. There is a Real whose „*potentiality is referent beyond the manifestation of it as a particular fact*“, as Hansen puts it.

In order to gain knowledge from such an operative reality, Hansen suggests, one needs to look for a *physical* approach. By following Wolfgang Ernst's approach of theorizing media in their operative dimension⁵, which Ernst calls *media's time-basedness* and their *timecriticality*, Hansen sympathizes with locating this „physics“ in the electromagnetic domain that comprehends all the radiation of physical particles in wave form. But Hansen's own approach seems to distinguish itself from that of Wolfgang Ernst in an important manner. Hansen's interest with a speculative phenomenology seems less interested in demarcating *a one horizon of „simultaneous origination“*

“induce phenomena within a system” in which it itself “has no place other than that from which it is 'missing'”, and “no identity other than that which it lacks” (120).

⁴ [\[please add a linking footnote to Hansen's article in the book\]](#); here we encounter a divergence from the suggested analogy to Deleuzian dark precursors: Deleuze does not subject his concept to a temporalization that would be external to the concepts own operability as a differentiator; rather, much suggests that dark precursors describe for him the substitute position of algebraic symbols in a mathematical structure, e.g. when he holds that the dark precursor „is precisely the object = x , the one which 'is lacking in its place' as it lacks its own identity” (ibid., 120).

⁵ Wolfgang Ernst, “Experimenting with Media Temporality: Pythagoras, Hertz, Turing,” in *Digital Memory and the Archive*, ed. J. Parikka (Minneapolis: University of Minnesota, 2013).

(Gleichursprünglichkeit), as is Ernst's declared interest for his media-archaeology⁶. Hansen's own focus is less on such a horizon or, as I would call it, such a master integral that would comprehensively and objectively register the past, and the potential future, and that can be „recorded only by media themselves“, by their „superior wisdom“ as Hansen quotes from Ernst⁷. Instead it is the bodily agency that is dispersed and active in media communication – involving both poles, senders and receivers – that Hansen seems to be interested in with his outlook to a speculative phenomenology. With that, his project seems to be the development of a veritable *physics of mediated communication*, rather than a *physicalist's theory on the communicative activity of media*. A physics of mediated communication includes a phenomenological notion of embodiment into its account. At the risk of overdrawing it a little, let me further dramatize the implications of this difference: One way of expressing this distinction, it seems to me, would be to say that the Ernst view wishes to see Hansen's *Real whose potentiality is referent beyond the historical manifestation of it as a particular fact* as a *white spectrum*, in which the embodiment of media, that is from a phenomenological perspective always singular, be purified and normalized into the mathematical ideality of a transcendent order. What Ernst refers to, when he speaks of „technomathematics“, seems to be exactly this. For Hansen, on the other hand, such a Real figures as a *dark spectrum*, whose knowledge resides in the essential darkness of the manifest embodiment of things themselves, and shimmers through only in speculative renderings of an integral of which all we can specify, speculatively, is that it is to comprehend actual links between a *now and here of the manifest body or fact*, and the belonging of this *now and here* to an *insisting anywhere and anytime*.

In other words, Hansen's phenomenological view seems to suggest that we should think of this Real, which takes the electromagnetic domain as a dark spectrum, as an active state of latently vibrant radiation, more probable than factual, a Real that insists in embodied things. In my response I would like to make a suggestion of how this laid-out program of a speculative phenomenology could perhaps be complemented by a further aspect – namely a distinction between what I call *functional technology* and *equational technics*, respectively manifesting as *dispositional apparatuses* and as *encrypted applications*. The crucial difference is that one is dependent upon a stable framework of coordination, whereas the other encrypts manners of coordination symbolically – a distinction that somehow escapes Ernst's important identification and exposition of electronic media's timecriticality. In relation to this distinction, it will be necessary to reconsider

⁶ Wolfgang Ernst, *Gleichursprünglichkeit. Zeitwesen und Zeitgegebenheit technischer Medien* (Kadmos: Berlin, 2013).

⁷ Wolfgang Ernst, „Experimenting with Media Temporality“, *ibid.*

„alphanumericity,“ and to question an assumption that arguably holds a near-to-foundational status for media studies at large: namely that our age be a post-alphabetical age (e.g. McLuhan, Kittler, Ernst, Rotman).

Spectra, depicting magnitudes that are genuinely simulacral

But first I would like to try disentangling some of the implications involved in assuming such an initial state of activeness (that captured by spectra of electromagnetic waves and the therein depicted radio-activity of cosmic light), before going on with a more technical part which discusses the importance, and at the same time the philosophical insufficiency, of timecriticality for the inception of a „physics“ of mediated communication that considers the Real as a dark spectrum. There are seven strings I would like to distinguish and expose, so that they can resonate through the more technical discussions that will follow.

- (1) We begin with the assumption of a Real as an active state that is virtually „pregnant“ in an indefinit manner, such that it allows for *the speculative interplay between discerning/discreting (Ermessen) and pre-hending (Vorwegnehmen)*. This interplay can be seen as a kind of technical criticality that applies to simulacral phenomena whose magnitudes are real, despite being simulacral, real in a sense that is purely operational.
- (2) This assumed activeness, if it is to be approached speculatively and physically, i.e. non-hermeneutically, requires that fluctuating ratios (*fluktuierende quantitative Verhältnisse*) are considered to make up a peculiar relationality that affords measurement, *a kind of rational fabric or texture* that constitutes this activeness’s latently vibrant radiation. Now, because the kind of measurement at stake is to be a *speculative* interplay between discerning/discreting and pre-hending, this rational fabric must precede and provide *abundant rather than sufficient reason* for whatever mensural order of being or having one might come to characterize of this activeness’s appearances. In other words we could say this kind of measurement must look *for a common factor* rather than for a common denominator.
- (3) These ratios are to be dealt with as analytic points, rather than as representations of geometric points. This distinguishes *operativity* from *functionality*.
- (4) We can call dealings with ratios-as-analytical points *computations*. Computations are themselves purely rational, but they are so in a reckoning, numbering, calculating manner that does not respond to strict, arithmetically predicative, necessities. There are strategic and tactic levels involved which place computations in an agoratic setup – not unlike Lyotard has

characterized for „the state of knowledge in computerized societies“⁸ – rather than in a historically dialectical one. Such an activeness never yields neutral recording; it’s recording always elects according to a direction that is, within certain constraints, arbitrarily imposed (Operation als *Ausrichtung*).

- (5) From the point of view of a speculative phenomenology of media’s micro-temporal operations, the computations these operations perform do not at all legitimate and autonomize thought in a disembodied, non-corporeal manner; quite inversely, so understood, computations place considerable weight on the role of our bodies in what-ever-it-may-be that we call „thinking“: possible abstractions proliferate and abound, and hence “rigorously thought-up” (German *erdachte*) abstractions amount to nothing much of value if there are no lived experiences that correspond to them.⁹ But this same point of view also seems to insist that it is only with the employment of abstractions, that the body’s affectivity is capable of opening up a *mediate Real* that in principle does and forever will continue to be elusive with regard to how we can pinpoint facts by words that name, concepts that comprehend and delimit, forms that manifest regularities, or numbers that count predicatively.
- (6) Such a stance of *abstractions that must be lived* „phenomenalizes“ the very quantities that are being processed in technical instrumentality.
- (7) These phenomenalized quantities are speculated to characterize *real* magnitudes that are, so to speak, *genuinely simulacral magnitudes* – like Hanson’s example of global warming. Because there is an operator that induces phenomena at work (something like Deleuzian dark precursors) within the system that provides mensurability, these simulacral phenomena can help us to *prehend that of which we know not (yet) how to assess, how to measure and relate it*.

Speculative (spectral) phenomenology, physics of mediated communication

Hansen’s speculation of where-off and how the simulacral phenomena of such a physics of mediated communication might be decrypted follows Wolfgang Ernst, and the latter's distinction of „measuring media“ from „mass media“. We must perhaps specify that „media“ here is related to „technical media“ in the sense of communications engineering more narrowly.¹⁰ Within these restrictions, *mass media* figure in the *time domain* of waves propagating in space, and *measuring*

⁸ Jean-Francois Lyotard, *La condition postmoderne: rapport sur le savoir* (Minuit: Paris, 1979).

⁹ Michel Serres has elaborated on this extensively in his book on Leibniz’ philosophical system (*Le Système de Leibniz et ses modèles mathématiques*, 1968); cf also his first three chapters in *Hermès II, Interference*, 1972).

¹⁰ My following and very brief discussions of the physics of communication engineering build upon basic knowledge in this field. For an elaborated and detailed account cf. for example Leon W. Couch, *Digital and Analog Communication Systems*, Pearson 2013 (8th edition).

media figure in the *time-critical domain*, which is the frequency spectrum of *how* waves propagate in space. That is why „mass media“ are called time-based, whereas measuring media are called timecritical. Both are operating within the electromagnetic continuum. But the frequency domain regards it *analytically*, and represents it via a spectrum mask, a technical image, whereas the time domain regards the electromagnetic continuum that is analytically captured by a spectrum mask as *mechanical*, and hence pictures it as a field. Now, what Ernst calls a *timecritical event* features as an analytical point in the electromagnetic field depicted as a spectrum. Let us bear in mind that an analytical point, unlike a geometrical one, is a *split* point, a *ratio*, the *encapsulation of a quantitative relation* (a „difference“). This is important because it demarcates where Ernst’s timecriticality remains silent about the aspect of digital computation which is perhaps the most powerful of all its aspects: namely that analytical points need to be integrated, and that this can be done in myriads of ways by encryption.

If we consider this aspect of how the electromagnetic continuum needs to be encrypted before it can be taken into account, then we can more clearly characterize three distinct levels that are involved in what Ernst calls „measuring media“: (1) a *geometric and mechanical level* of a wave propagating in the electromagnetic continuum, the physical substrate of telecommunications; (2) a *dynamical and analytical level* where a propagating wave is singled out of the field, and where it is attributed a particular frequency number, as a kind of identity-tag within the larger spectrum. Through this singling out, a particular wave is being dynamized, i.e. it is identified as a particular *temporality* that can be differentiated and integrated, and (3) a *level of encrypting manners of how to integrate and differentiate* this temporality, what we can call its *sequencing*. This third level is the level of coding. It is *mechanical* again, yet algebraically so: it subsumes the ratios, the analytic points, under an encrypted, symbolic form. I will come back to what we can understand by such a „symbolic form“. Important now is that this third level is mechanical, like the first, but on a different level of abstraction than the wave level – it is only here that we might be in the realm of *quantizing dynamical systems* through *encryptive probabilistic procedures*, and where we might face what in quantum mechanics is called the measurement problem. Hansen is interested in media’s timecriticality on this third level, as I understand him, because it is here that a notion of media’s embodiment, insofar as it is not normalized and idealized, can be seen to play a role at all.

So, Ernst’s distinction between „mass media“ and „measuring media,“ how far it can carry us with regard to this third level of algebraic mechanics, or quantum mechanics? Technically speaking, each frequency itself can be treated as a field for other frequencies. A masked field of fields of waves is called a spectrum, a *technical image*. It is by way of manipulating this technical image and

rendering its manipulations back into the physical continuum, that Ernst can speak of media's measuring timecriticality. In this indirect manner, the amplitudes of waves are encoded in terms of distinguished phases. As a consequence of this, where we have one mass-media channel per frequency that can broadcast the program from one particular source, we can have n , i.e. an indefinite amount of „discreted“ channels (distinct articulations of one and the same) per frequency in measuring media. With them, it is not one source that broadcasts, but distributed populations of sources that send messages in parallel. The time-based manner of broadcasting is now being coded, in the strict sense of the term – it is being encrypted according to probabilistic alphabets – and like this, it can serve to host not simply one channel, but myriads of channels. In such probabilistic set-ups, we have, in its most extreme form of peer-to-peer file sharing, one channel for each „message“ sent. Many channels can be encoded onto one and the same physical carrier (a wave). Just to remember the level of artistry and sophistication we are talking about: In this modulatory manner, one Telecom cable, for example the one which supplies our household in Zurich with phone and internet connection, is capable of maintaining more than 10 million distinct channels „within“ or rather: „with the carrier of“ one single frequency. This is of course an extraordinary large number because we are talking about a cable, and a cable allows waves to propagate with fewest disturbances (as opposed to air, light or water, for example), but *in principle* this explosion of sustainable channels applies also to services without manifest cables, like mobile cellular services or bluetooth. Now this encryption, which relies on probabilistic procedures, may well be working „mechanically“ (algorithmically) – but that does not mean that it does not involve incredible diligence and sophistication on the side of the engineers! The mechanical work they perform is algebraic before it is functional, it has to make different protocols compatible. We will see in a moment why this is important politically. It is why I think that the emphasis on „measuring media“ for what is actually an entire compound of both, symbolic encryption and performed timecriticality, is somewhat obscurative. On this technical level of telecommunication that Ernst addresses, it seems more productive to speak of *generic mediality* rather than of reified „*measuring media*“. ¹¹

Channels, keys, and ciphers (code-systems as manners of discerning no-thing-at-all)

Let me try to illustrate what is actually happening in such encryptive coding. I will try to do it with an example that is perhaps easier to grasp. Gian Battista Alberti, the Italian architect and polymath in Renaissance Florence, famous of his legendary 10 books on architecture, wrote a book entitled *De Componendis Cifris*. It is a *code of practice* for how to encrypt texts in a manner that is

¹¹ Cf. Vera Bühlmann, *Die Nachricht, ein Medium. Generische Medialität, städtische Architektur* (ambra: Vienna: 2014), especially the Coda to the book.

augmented by a mechanical device, the so-called cipher disk (which he is said to have invented). Such a disk consists of two concentric circular plates mounted one on top of the other. The larger plate is called the „stationary“ and the smaller one the „moveable“ since the smaller one could move on top of the "stationary". The first incarnation of the disk had plates made of copper and featured the alphabet, in order, inscribed on the outer edge of each disk, and coordinated in cells that are split evenly along the circumference of the circle. This enabled the two alphabets to move relative to each other, and thus to create an easy to use key – one could give orders like *shift one unit to the right after every 5th turn of the movable disk*, in order to reconstruct the right letters of the text message in the right sequence.

Communication engineers today are not dealing with cipher disks anymore when they organize for the co-existence of 10 million distinct channels within one frequency, of course. But they are still providing channels for communication through just such encryption. The frequency would be the „static plate“, and each modulation of its amplitude in phases would be a „mobile“ plate. Obviously, such plates can be stacked and set relative to one another in an indefinit amount of manners. With digital channels, every channel is one such key, crafted for every single message that is to be transmitted. Alberti’s cipher disk is still the best illustration of the peculiarly *rational, yet not reasonable*, „laws“ to which technical telecommunication media obey when they enframe how messages can be *stored, processed and transmitted*. It is algebraic *laws of equations* that enframe in particular notations (code-systems) a particular calculus of variations. In encrypted mediation, that which circulates remains invariant in the algebraic sense of the word: algebraic because we are on the level of *equations*, not their derivatives, which would be that of *functions*.¹²

¹² It is important to realize that the invariant quantity whose fractions are circulating in the transformability space which an equation constitutes features neither as variable nor as constant (coefficient) within the equation. A Calculus of Variation is today referred to as obeying The Laws of Conservation. They find their perhaps most important application in physics, where energy is treated as the invariant quantity (its amount total in the universe can neither be expanded nor diminished) on whose basis we can modulate its „partitioning“ or even, to put it a bit drastically, its „communication“ (Mitteilung) by the electrons which „commute“ or jump between particles. This is for example how a photovoltaic cell is working: it is a material disposition rendered such that it captures photons from the light to which it is exposed, thereby moving electrons to jump and „spill over“ the bounds of the chemical saturation of the cell, thus producing electric power. Such technics, like photovoltaic cells, I suggest to call equational technics. Cf. regarding applications of such physics John W. Orton, *The Story of Semiconductors* (Oxford University Press: London, 2008); for an introduction to invariance theory: Dwight E. Neuenschwander, *Emmy Noether's Wonderful Theorem* (John Hopkins University Press: London, 2010).

This aspect, that „content“ is treated as that which can be conserved throughout transformations within a reciprocal space constituted by signal horizons – in short, probabilistic encryption – seems to me the main characteristic distinguishing digital media categorically from analog media. A further context which can help us to better comprehend this aspect: In a simplificatory manner, we can think of analogicity as the idea where the words that can be articulated by the alphabet are taken to make up, all together, an inventory which names all things existing, in other words, a kind of an Adamitic or Original Language which represents a (or rather: the) conceptual order. We can easily find this idea at work in our intuitive but naive idea of the measurement system with all its normalizations based on prototypical material artefacts – the Original Meter in Paris, for example, or the Original Kilo, in France as well, and so on. Now, just like language is studied from a structural and systematical point of view since the end of the 19th century, also the *International System of Units* began to rid itself from these material prototypical artefacts. The units are defined today

Two kinds of technics: concentrating on no-thing (equational) and being concerned with some-thing (functional)

This is important to realize: every act of coding spells out a code-system, that is in fact, *a measured nothingness*. A system of rationality entirely decoupled from any reasonable ground. That's why it can be a system (unlike Saussure's semiology, for example), precisely because it introduces a notion of zero upon which it operates¹³ – zero was indeed the name attributed to the cipher's character, once it was introduced from Indian and Arabic mathematics to Europe. A cipher (and there can be indefinitely many ciphers!) as far as algebra and operability is concerned, is genuinely *neutral and vacuous*, neither positive nor negative. *Empty*, as Kant and especially Hegel insisted. *Gleichursprünglich*, as Ernst says today. Coding, because it is algebraic, operates outside of historical time. That is why a quantum logical approach to information and data seems so promising. The set-up of a code-system is formulaic, equational. It literally represents nothing, or in other words, it constitutes a cipher: a notational body of reciprocal transformability that is transcendent to the distinction between positive and negative. Programming languages are algebraic, and they are heterogenous with respect to each other.¹⁴ It is the epistemological concerns that, within the program of providing logical foundations for knowledge, try to systematize them in one globally consistent symbolic order. Within the mathematical domain itself, to determine the solvability of an equation all the terms on both sides of the equation sign must be arranged such that *they cancel each other out*, and sum up to 0. Thus, they literally and actually so *describe nothing*. In literally describing nothing, they can conserve what is contained in the givens (the data). This is different from a function. A function is derivative to an equation, and it *doesn't concentrate on*

within a structural system of conversion – an idea already propagated by Maxwell in the 19th century – where all the units must cohere, that is, exact values must be formalizable for some base units, and all the other units must be derivative from these base units. In the form that is authoritative today, all the definitions of the base units are precise algebraic formulations of possible conversions that can be applied to the base unit as an invariant (meter for length, ampere for electric current, kelvin for thermodynamic temperature, second for time, mole for the amount of substance, candela for the luminous intensity (light)) – except for the kilogram. It too is a base unit, but its definition is still a prototypical artefact. Thus it is the declared goal of recent meetings in 2007 and 2010 to eventually set up a New International System of Units where the structure of the system is to shift from giving explicit precise definitions to the base units themselves to giving explicit precise definitions for the natural constants like the speed of light, involved. Like this, so the ambition, it will be possible to do away with the kilogram as well and find a formulaic definition for it. In order to come up with such a coherent system, it is necessary to assume „natural constants“ – as of today, this is the speed of light, the elementary charge of atoms et cetera. I owe my thanks to Nathan Brown for drawing my attention to this in his talk „Hegel's Kilogram,“ given at the conference *Quantity and Quality, the Problem of Measurement in Philosophy and Science* which he organized in April 2014 at UC Davis, California USA. For further info, the wikipedia.org site on *The International System of Units* provides a valid starting point.

¹³ Every equation, in order to yield a solution, must literally be set equal to zero. Algebra is the art of moving around the terms of the equation from one side of the balance to the other, such that they cancel each other out.

¹⁴ Cf. the manuscript to my talk at the *Universal-Specific, from Analysis to Intervention* Conference at ETH Zurich in November 2013: „The Question of ‚Signature‘ and the Computational Notion of Genericness“, available at www.academia.edu/5117590/The_question_of_signature_and_the_computational_notion_of_genericness;

nothing, like the formula it is derived from. Unlike an equation, it *is concerned with something*: namely with determining *that one variation of the invariant conforms to another variation of it*. A function is always directed, while an equation rests in itself – although, it never really „rests“. I would like to suggest that the character of a function may be considered as *dynamic*, and that of an equation as *active*. Or in other words, functional technology comes in the form of apparatus (with strictly controlled dispositions that are fixed, such that they allow to support variations of a same behavior) while equational technics comes in the form of *applications*. The latter live from the opposite of centrally-controlled dispositions, they open up their own zones of exchange through encrypting the domains in which they operate.¹⁵ On the basis of this idea, *that equations, while resting in themselves, do actively nothing, rather than represent and stand in for something, we can modulate and actualize their proper „domains of activity“ by endowing it with particular dispositions*. This may sound farfetched and hard to picture, but it describes for example how solar cells work. In the case of *photovoltaics*, a semiconductor is dispositioned such that it is capable of capturing photons from the light to which it is exposed. With solar cells, this disposition is a certain balance between the atomic weights of Bohr and Phosphor. Once exposed to sunlight, the electrons begin to jump in order to keep the balance of the initial saturation, and eventually spill over the framework of the cell, and hence produce electric current, garnered from sunlight. Their character cannot be captured in terms of functions (dynamics), it is equational (active). Solar cells don't need an overall framework, they tap into streaming radiation of light and encapsulate some of its energy by „imposing“ upon it their own „rationality“ (by capturing photons in a particularly coded – encrypted – receptivity). This is what „measuring media“ do, too: they engender the domains in which they operate through partitioning. We cannot only regard internet apps as instances of such equational technics, but also any kind of computer simulations. Their activity is operational, and hence strictly technical: *it produces what it is set up to produce*. If you set up a simulation that computes global warming, you will get values that indicate global warming. If you set up a simulation that computes the limits to population growth, you will get values that indicate limits to growth. I don't mean to ridicule these simulations, and the seriousness and urgency of the themes they address, but if we would set up a simulation that computes the end of the world, we would also get a result that must be considered valid within the constraints embodied by the parametric model – by the equation – on which a simulation runs. Equational technics is strictly rational, and yet it is

¹⁵ A distinction between what I suggest here to call *apparatus* and *application* is at work in the partitioning of communication systems into different abstraction layers, and it is the main conceptual set up of the *Open Systems Interconnection Model* (OSI Model) behind the international and national standards for how to organize communication networks, developed since the 1980ies by the Institute of Electrical and Electronics Engineers IEEE. Cf the wikipedia entry for an introductory overview.

entirely decoupled from logics and reason. Which is indeed, why it can support speculative reasoning so well.

Abstractions that prolong rather than to cut short – articulating what is unthinkable

Mark Hansen's interest with his program for a speculative phenomenology is to affirm what he calls the absolute inaccessibility of quantum events to thinking¹⁶. Quantum phenomena are produced by the operation of measurement, he insists, but it is a kind of operability that comes with its own duration, that lasts on, rather than cutting through or intervening as an act. One cannot find orientation about the phenomenon of climate change from single acts of measurements. It is measuring itself that produces the phenomenon, and hence Hansen suggests to call them "originary phenomena" – phenomena that are themselves actively real, instead of an appearance or manifestation of some underlying and hidden reality. Phenomena so conceived, he maintains, cannot be *thought*, only *sensed* (measured). By suggesting to complement his program with a distinction between functional technology and equational technics, respectively manifesting as dispositional apparatuses and as encrypted applications, my own discussion aimed at mobilizing and displacing somewhat what appears for Hansen to be an exclusionary relation between thinking and bodily entanglement (affect and sense). By looking at the probabilistic procedures with which the measurement of quantum phenomena is actually carried out in practice by information scientists and electro-engineers, and by exposing how they are working with non-representationalist concepts as well (they are working with cryptological or rather: cryptogrammatical and –analytical ones), Hansen's impatience with idealist transcendentalism gains, on the one hand, in support; yet at the same time, thought cannot adequately be conceived as the other to bodiliness, given that such measurement nevertheless involves a kind of conceptualization that affords and demands diligence, sophistication and intellectual mastery. It is the complication of this relation, I suggested, that might be addressed, in such a speculative phenomenology, as "lived" or perhaps better, as "quick and prolonging" rather than "short-cutting" abstractions. Information and communication technology, then, do not place us in a post-alphabetical age where the Real would be immediately "recorded", "sensed" and "expressed"; rather, such recording operates relative to the probabilistic alphabets of code it uses. In code, an alphabetical order and a numerical one are mutually implicative – no linear ordering of the finite elements of an alphabet from first to last without applying a symbolization of how to operate by numerals within an element of the infinite (an algebra), and no notational symbolization of how to operate in an element of the infinite by

¹⁶ [please insert a reference to Hansen's text in the book (citation is from the abstract)]

numerals (an algebra) without indexing with an alphabet's place system a sequential or tabular order of how givens (data points, indexes) can be organized such that they may be subsumed under the rule of this symbolization.¹⁷ *Code is alpha-numerical*. The two are orthogonal, and they mutually transverse or “co-evoke” one another. As far as the measurement of quantum phenomena is concerned, the alphabetical as well as the numerical are derived from the *ciphers that operate technically and thoughtfully in code* – even if the measurements themselves can be said to remain “unthinkable”, as long as “thinkable” is restricted to mean “critical” within a representationalist paradigm. The question, then, for such a speculative phenomenology that articulates the unthinkable, and hence is never critical without being inventive, but that may, on the other hand, very well be inventive without being critical, is: “who” is thinking in such objective thoughtfulness that operates in technically manipulateable code? On this level, the proposed sobriety and libidinous-lessness that goes along with keeping a distinction between equational technics and functional technology prevents us from identifying (with) such an agency in uncritical manner – be it as Truth, Beauty, History, Nature, God, People, or Science.

¹⁷ The best study on the philosophical implications of algebra I know of is: Jules Vuillemin, *La Philosophie d'Algèbre*, PUF Paris 1962.