LOCAL ANTHROPOGENIES - SEMIOTICS

MATHEMATICS AND SEXUALITY

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To René Lavendhomme, mathematician and literary, who wrote La Vréalité with Eva Visnyei, which narrates a mathematical examination where a student is in love with the interrogator and tells him a suite of hysteric talks to which he responds one by one in a topological language.

(Anthropogénie générale, Chapitre 19, Mathématique.)

Mathematics and sexuality appear to be at complete opposites in our Universe. The former is at the most distinctive, colder end, whereas the second is at the most fusional and hottest pole. Yet, they have something in common : their *elementarity*. Sexuality concerns the reproduction of the Living, meaning what is most basic and essential in a planet. Mathematics sends back to learning and comprehension in general and as initial (gr. mantaneïn: learning and understanding). It is there before language insofar as technique exists before the language and founds it for a million years. Today, it is still there in every one's ontogenesis. (Anthropogénies locales, Phylogenèse 2. La mathématisation de la flèche (avec René Lavendhomme) It is highly probable that Mathematics and Sexuality have collaborated throughout Evolution in order to obtain co-aptable organisms. To the extent that they are perhaps two main branches of the key of the Universe.

1. The embryology of copulation

Let us begin with a short reminder of what is needed to obtain a simple Living.

(a) A physicist logic of the cellular tissue, meaning that the bastula pancake, once it grows, will, according to the position of its umbilic (ingesting and excreting belly-button) give way to organs with 1-1-1-1 limbs (radiolarian) ; or with six contrasting limbs (insects) ; or with four limbs, four legs, or two legs and two wings ('quadrupeds'). Extremities coil up and uncoil in a rounded cul-de-sac, like skulls, or in articulated 'fingers', that are either distributive or diversely adhesive (Vincent Fleury, 2005). This tissular logic has been confirmed by Doris Taylor's rat pulsing heart obtained from the organic scaffolding of a dead rat in 2007. From this physical and physiological logic of the tissue follow the symplectic coherences of the living that were already brought to the fore scene by D'Arcy Thomson's *On Growth and Form* since 1930, and partly explained by René Thom's Seven Elementary Catastrophes since 1955. **(b)**

Proteomic modulating details that derive from sequences of amino acids that are gathered and sequenced by ARN, which are themselves regulated by a rather stable DNA. These sequentiations are subject to resequentiations, contributing to the Evolution of the species. **(c)** A general shaping principle, the Darwin's ***selecting environment***, insofar as it *eliminates* organs that are not compatible with the resources of the external and internal environment, and correlatively favours and even exalts organs that are compatible with it and amongst themselves.
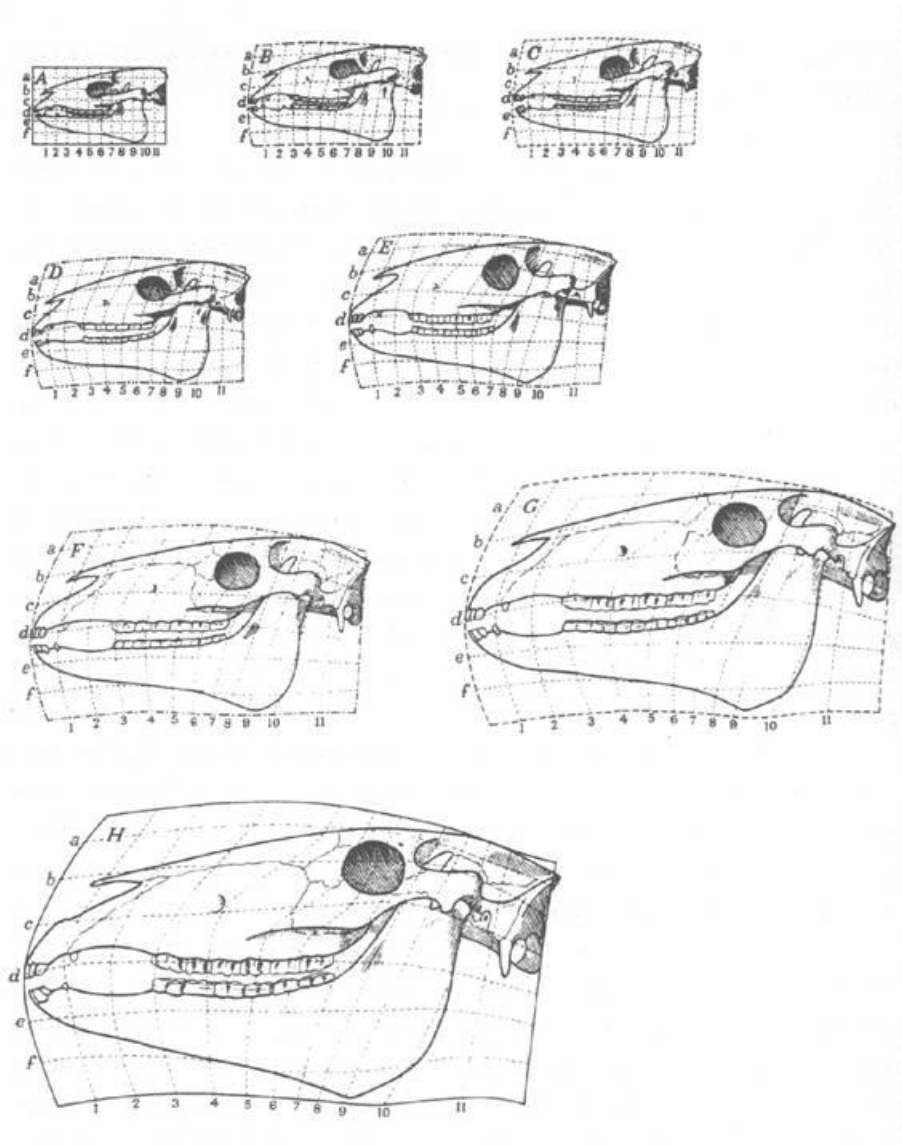
D'Arcy Thomson.

As far as sexed organs are concerned, the organs must be compatible – even ***complementary*** – by pairs, male and female. This supposed demanding biological conditions. **(a)** That the male and female organs should be – from the very start – one same organ, which

then, in the course of the embryogenesis, gave way to two solutions, each being the gloving-gloved image of the other. **(b)** That their coaptation should have some *easing*. **(c)** That it should be *sufficiently exact*. This is made possible by the tissue dynamic that we have just encountered with D'Arcy Thompson and Vincent Fleury. **(d)** Finally that the **place of coaptive organs** on the body should be favourable : the penis of the bull sufficiently median in its axis so that when he climbs on the cow he should have a reasonable chance of finding the opening of its vagina. These demands double with Homo, where, because of the fact that he can stand, a possibility to climb exists at the back but not excluding an insisting frontal coupling that had been evolutionarilly foreseen by the ventral, albeit elusive, coupling of the Bonobo.

We are going to interrogate mathematical proprieties responding to these requirements. As sexual copulation is assuredly a primary biological activity, we have better chance turning to primary mathematics, i.e. **Topology**. Let us recall that *topology* is the *geometry* before measures, hence devoid of standard (of measures). *Triangles* and their equalities are the paradigms of Geometry (the measure of the earth) whilst *knots*, where the length of loops is irrelevant, are the paradigm of Topology (théorie, logos, des lieux et des sites, topos).

2. Coaptive organs, differential topology assisted by symplectic geometry

Sexual copulation is not merely an assembly. It is a *pegging*. And a pegging that has some *easing*. It is thereby in differential topology that we have most chance of finding crossings between mathematics and sexuality. Differential topology deals with 'catastrophes', the substitutions of forms supposing a 'singularity', i.e. "a point of the space time where the curvature of the space-time becomes infinite" (Hawking). Already, the names of the singularities evoke sex: (1) the fold, (2) the break (fault). (3) the swallowtail, (4) the butterfly, (5) the hyperbolic umbilic, (6) the elliptic umbilic, and (7) the parabolic umbilic.

However, since René Thom's Fields Medal in the 1950s, we know that the number of these items and their order is by no means ruled by fortune. They have a true algebraic filiation. Some would even say ontological. Let us designate a variety by V. Its catastrophes are constructed from a 'simple minimum' whose 'organizing centre' is numbered as $V=x^2$ and its 'universal deployment' is also numbered by $V=x^2$. We should know that in topology, a ***uv*** product is a frequent occurrence where ***u*** designates a monomorphism and ***v*** designates an epimorphism. We shall then number the ***fold*** by $V= x^3$ for its 'organizing centre', and $V= x^3 + ux$ for its 'universal deployment'. The ***break (fault)*** will be numbered by $V=x^2$, and by $V = x^4 + ux^2 + vx$. And so on. This type of progression (where we do not expect the reader to understand the detail) can suffice to introduce the table below, which was published by René Thom in the Benjamin edition (New York 1972) of *Stabilité structurelle et morphogenèse*. This table has the advantage of comprising active and passive verbs, and also substantives, that demonstrate the extent to which mathematics is at the heart of the Technique and the Language, and even of the Living as such.

Nom des singularités	Centre organisateur	Déploiement universel	Sections remarquables	Interprétation spatiale (substantifs)	Interprétation temporelle (verbes)	
					Sens destructif	Sens constructif
Minimum simple	$V = x^2$	$V = x^2$		Être, objet		Être, durer
Le pli	$V = x^3$	$V = x^3 + ux$		Le bord, le bout	La fin - finir	Le début - commencer
La fronce (catastrophe de Riemann-Hugoniot)	$V = x^4$	$V = x^4 + ux^2 + vx$		La faille (géologie)	Capturer, Changer, Casser, Rompre	Engendrer, Devenir, Unir
La queue d'aronde	$V = x^5$	$V = x^5 + ux^3 + vx^2 + wx$		La fente, le coin	Déchirer, Fendre	Coudre
Le papillon	$V = x^6$	$V = x^6+ux^4+vx^3+wx^2+tx$		La poche, l'écaille	S'écailler, S'éclolier, Remplir (une poche)	Donner, Recevoir, Vider (une poche)
L'ombilic hyperbolique	$V = x^3 + y^3$	$V = x^3+y^3+wxy-ux-vy$		Le crêt (de la vague), La voûte	Briser (la vague), S'effondrer	Recouvrir
L'ombilic elliptique	$V = x^3 - 3xy^2$	$V=x^3-3xy^2+w(x^2+y^2)-ux-vy$		L'aiguille, la pique, le poil...	Piquer, Pénétrer	Boucher (un trou), Anéantir
L'ombilic parabolique	$V = x^2y + y^4$	$V=x^2y+y^4+wx^2+ty^2-ux-vy$		Le jet (d'eau), Le champignon, La bouche	Briser (un jet), Éjecter, lancer, Percer, Couper, pincer, Prendre	Lier, Ouvrir, Fermer (la bouche)

René THOM, « Stabilité structurelle et Morphogenèse », 1972, W. A. Benjamin INC, Massachusetts.

The Living, in view of its fragility on our planet where he appeared very perilously, is forced to play things simply. It is therefore hardly surprising that the sexual copulation exploits the seven elementary catastrophes in the same algebraic order that we have just seen. (1) The *fold* is the pegging of the concave and the convex in its most naive status (it gives something metaphysical to the Champagne landscape, explaining the smile of Rheims Cathedral), (2) the ***break (fault)*** is the initial condition of the *easing* between the pieces, (3) the swelling of the penis that thickens to its glans into the vagina corresponds rather well to the *swallowtail*, a type of pegging that is very current in carpentry, where it couples with the 'mortice and tenon' pegging. From these three primary catastrophes, (4) the ***butterfly*** accomplishes the pocket effect that René Thom uses to link his verbs 'filling' and 'emptying. (5) Then, the ***hyperbolic umbilic*** responds to the opening of the thighs, particularly to the top of the thighs, the vulval bulge that Vincent Fleury deducts by cellular dynamism, resulting from the fact that the addition of the circumference of the two thighs is larger than the circumference of the torso, hence unloading the surplus of tissue in these labial bulges that we usually find at the root of the ramifications of trees or corals. (6) The ***elliptic umbilic*** is rather well suited to the penial peak and finally. (7) The ***parabolic umbilic*** concludes the coapted whole by the mouth effect.

Let us insist on the **pegging**, or more generally on the **mortice and tenon joint**, a remarkable phenomenon for epistemology and ontology. To the extent that, since Greece, where the carpenter is known as the exemplar Technician, the specific action after the simple *assembly* (superposition, juxtaposition of stone or wooden bricks) is precisely the mortice and tenon relation, or the pegging that is also omnipresent in Japanese tectures, small and large. The mortice and tenon effect can indeed be read in two directions. (A) As the result of *two pieces* that, fitted into the other, create a male-female copulation. (B) As a *unique block* that undergoes *two possibilities of cuts* : (a) a section in two in a single plan, which gives way to two successive states : firstly there is One, then there is Two, inducing an ***exclusive disjunction*** (with excluded middle, or third). But (b) a second possibility cuts the initial block according to a curve that means that one of the (encompassed) halves should stick out in the other (encompassing) or still, that the encompassing should take in (comprehend) the encompassed in an ***inclusive disjunction***. The latter does not add or remove anything. In such a way that the *Two remains One* and that the *One comprises the Two*. Overlapping or rather preventing the opposition of the One and the Multiple. Or still, of the Same and the Other. Since the Other is engendered from the Same, and the Same from the Other.

And our three umbilic confirm these characters. Because the first, the hyperbolic results in the female ***declosion***, the thesis. The second, elliptic, give us ***penetration*** (masculine), the antithesis, implying some sort of negativity (Hegelian). The third, parabolic, gives us the ***mouth*** as the product of the opening and the grasping, synthesis.

(Anthropogénies locales, Phylogénèse, 10. Histoire photographique de la photographie, Weston)

Weston

So conceived, hominoid – and assuredly animal – copulation is not only an operation or suite of efficient biological operations. It offers – as many metaphysicians, mystics and poets have seen – a ***fundamental cosmological realization*** – an act where the Universe not only engenders some of its *de facto* state moments, but also manifests the Engendering as Engendering in its generality and initiality, in what the Greek have called the ***Physis*** (*pHusis*, substantive of *pHueïn*, to engender), the Generation as Generation (qua talis, gr. Hè), which etymologically gave us our 'Physics'. In 1967, the author's ***Intention sexuelle*** spoke of capitalised ***Conjunction***. (**Anthropogénies locales, Sémiotique 2. *L'intention sexuelle, ch. 6***) Grammarians did not fault when in the Aristotelian Greece; they conceived the full language wording as borne from the model of the ***copula***. The *people of the explicit*, such as Indo-Europeans expressed the 'copula' using explicit words, such as 'esti', 'est', 'is', 'ist', or substantive alterations, in Finnish for instance. In scholastic, 'he does this' has to be grammatically contructed as 'he *is* doing this'. To the contrary, the *people of the implicit*, such as the Chinese, do not express the copula, because the conversion-copulation (the Tao's *Yi*) seems to them to be too fundamental, too obvious to be thematized. (**Anthropogénie locales, Sémiotique 3. *Signe et symbole dans l'acte sexuel***, in *Facets of Eros*, Martinus Nijhof.)

Ultimately, the Conjunction is not a simple biological or mystical operation, but the apparition of the *pure act*. It is no more of an idea or a concept or a particular image, but the idea of every idea, the image of every image, the basic breadth of every sound and every silence. In our Greek-Latin languages, one word can aim at this status : ***fundamental phantasm.*** The *Phantasm*, where finitude and infinitude meet, can designate *plural and compulsive phantasms* that impose their vortex in the closing of the theft or the rape. But it also targets – and this is

what matters here – the *singular or fundamental phantasm* that creates everywhere, upon the occasion of every object and every act, the 'opening' of unending liaisons of a perceiving living. The Conjunction and the Phantasm, at the singular, are then also the initial **Symbol** (balleïn, sun).

L'intention sexuelle. Editions Casterman, 1968

Nothing of all that would have caused René Thom any surprise, as he liked to recall that his vocation of an embryologist topologist arouse from his simultaneous frequent visits, in his childhood, of a railway sorting station and the display cases of an embryology museum in his Montbéliard natal country. Later, this will make him an unwavering Aristotelian.

As such, topology does'nt make room for ***gravitation***, wich is of utmost importance in every behavior of a standing, anti-gravitational Primate. The topological catastrophes are not equivalent when disposed vertical and horizontal. Exemplarily with our present scope, the mouth and the vulva slits differ, even oppose, in the human female body. The horizontal slit of the mouth is dragging; it is the daily and nightly fear of the crocodile, whose upper jaw comes down. The vertical slit of the vulva is spreading, coaptating, opening a door, the centre of attraction of every attraction. In the work of Lao-tzu, its magnetism turns round into a source of universal fecundity ; a Chinese proverb says that it is the place of all affluences. For our

theme of Mathematics and Sexuality, the libidinal mathematic must never lose sight of the underlying gravitional physics.

3. Coaptive attraction. The caress. General topology and neurotransmitters. The arrow and the mapping.

However, copulation does not only require coaptive organs, it also requires an action of coaptation resulting from a coaptating drive (French *pulsion*, English *drive,* German *Triebe*, Greek *Hormè*, Latin *libido, voluptas*) in the two complementary organs. How to provide it? The immediate response is that they are the fruit of a preliminary embryologic unit, such as Plato's *Banquet* narrated in an ancestral myth of the lovers as a sphere that was complete in a first while before breaking into two complementary halves, each of which **misses** the other (*penia*), so seeking unrelentingly its missing part. Let us add that such a drive is favoured by the coaptating *slopes* that we have just seen according to the seven elementary catastrophes of the differential topology. Indeed, an elementary catastrophe is a **form** *in actu* and a ***slope in potentia***. Another way for mathematics to remind of its latent physics.

Yet, even slopes do not suffice, and this time, we need a true physiological drive, not one that is solely anatomical. We should thereby call upon the nervous, perceptive-motor system for performances that are no longer those of daily life, such as moving around, finding shelter or to rejoin and ingest a prey, all performances that are describable one by one. We need a general diffusive fervour. In English, we can speak of ***arousal***, exploiting the 'a' suffix that marks an internal movement devoid of precise aim. In French, of ***rut*** for the male and of ***heats*** for the female. In both cases, there is spoken of generalized swelling or dilution, a fusion triggered and supported by stimuli-signals. Visual signals, such as the often-colourful backside of the doe and the female monkey ; auditory with the troat ; tactile in the crawling and the swaying ; olfactive when the male stags of the Altai roll around in the mud so that the musk can impregnate their entire body. In the animality preceding Homo, 'heats' and 'ruts' are seasonal, in accordance with climatic resources. With Homo, whose standing, angular body makes the biological functions obvious, even eloquent, and on the other hand technically and semiotically available, ruts and heats do not have the same imperious violence, although they are almost perpetual.
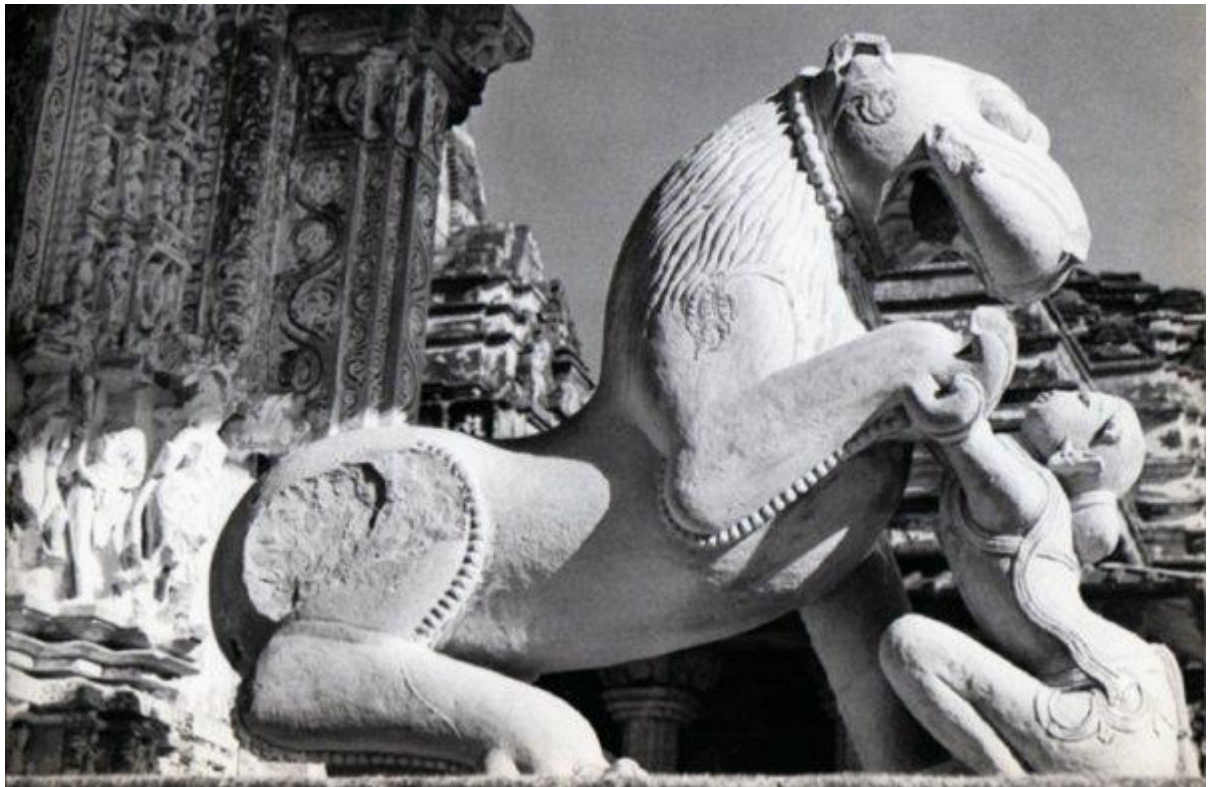
Khajurâho (Xe-Xie siècle). Temple de Mahadéva. Lion et orante. Léogryphe

A nervous system has two resources : *neurones* that spatially transport information (forming, formare, in) through the propagation of a potential of rest that transforms into a potential of action ; and on the other hand, *synapses* between neurones, allowing to modulate these transfers and creating neuronal colonies through the progressive establishment of continuities and cleavages. The global result is that a nervous system will make what sticks out stick even more, and will blur even more what already blurs. M.I.T's David Marr demonstrates this with the first computerization of visual perception around 1980 in its seminal *Vision*. Yet, the coital *arousal* does not exactly follow this model. It is not targeting in a first while but generalizing. Therefore, it supposed synaptic reactions not one by one, or simply numerous, but invading. And this is the business for *neuromediators*, meaning *neurotransmitters,* i.e. neuronal activators from near to near, and *hormones* acting by bathe that affect almost simultaneously entire neuronal regions (dopamine, serotonin, cytosine). Neuromediators are a matter for extremely complex biochemistry that neurophysiology only begins to decipher and that, even when discovered, would be too complicated and of very little use to this text. For our subject, we shall remember only their **holosomic** properties, by what not only they affect vast regions of the entire body, particularly erogenous zones, but contribute to suscitate, in the case of Homo, the angulous primate, *an entire quasi universalized body*.

Otherwise, what kind of mathematics intervenes in the ruts and heats? For sure, we remain in the realm of topology, yet no longer the *differential one* that draws coaptive organs with their coaptive slopes, but **general topology** which ignores distances like any other topology, but even bypasses the determined forms (fold, swallowtail, etc.) that differential topology is descriptive of, and consideres uniquely kinds of **neighbouring** relation : **nearby /**

faraway ; continuous / discontinuous ; contiguous / discreet ; closed (comprising its limits within itself) / *opened* (only delimited by its environment) ; *encompassing / encompassed ; path / impasse*.

It is according to this *general topology* that mammals progressively invented the most coaptive movement : the *caress*. Whether we are talking of sea lions or giraffes, and whether the milieu is marine or terrestrial, the caress is a movement that exploits at the maximum the five or six general topological couples that we have just listed. We could say that caress *is* the entire general topology placed in sensation and bodily realization, and particularly in thematizing *insistence*. Insistence in space, through its pressures and easing. Insistence in time, through its accelerated advances and delays. The weight of bodies and organs is never forgottenin new gravitational comeback of physics under mathematics. And pre-eminence of the cerebellum, this cerebral center of smoothness of movements.

(Anthropogénies locales, Phylogenèse 10, Histoire photographique de la photographie, Stiegliz)

Alfred Stieglitz : Torso, 1919. Metropolitan Museum of Art. N.Y.

Wilhelm Reich described the consciential content of the caress as the 'founding sensation'. The more epistemological **Bergson** says that it is *non-informational*, a pure sensation that teaches nothing and consequently that cannot be memorized as such. In the ontology of the *Anthropogénie*, the caress opens to the pure presence-absence-apparitionality-self-translucidity of the consciousness. **Peirce**, had he been interrogated on the same subject at the same moment, would probably have replied that the caress is a privileged, ultimate case of his *Firstness*, the primitive sensation that comes before perception. Like **Descartes** could have said that the sexual caress is the pure case of what he intended by *thought*, which in the *Principia philosophiae* does not suppose reasoning or reflected thought, but *is* any case of presentivity, presence-apparitionality (indescribable) that accompanies – in Homo – certain attentive cerebral experiences and some inattentive cerebral reactions, like when a pain accompanies a shock, or when the caress of a mother or a lover maintains pleasure. For Descartes, the hence-understood 'thought' was so characteristic of Homo that he deprived 'animals' of it. It was fabulated that Malebranche, as orthodox Cartesian, would beat his dog unremorsefully, since the latter – although his nervous system displayed every sign of pain – would not 'feel' nothing, feeling being an experience supposing the (human) soul. Without believing in the 'machine-animals' of Descartes, Hugo used 'thought' in this Cartesian sense, and precisely in our case: 'Qu'on ne sait, tant l'amour est vainqueur, / Tant l'âme est vers ce lit mystérieux poussée, / Si cette volupté n'est pas une *pensée*'.

So endowed, the **sexual caress** holds multiple properties. (1) Since distance is not pertinent in topology, the designation of the partner as *present-absent* is a masterstroke of Shakespeare' Sonnets. (2) The caress ostensibly thematizes the couple of the *encompassing* and the *encompassed*, where the encompassing of the masculine sexual organ in the female sex is often compensated by the holosomic posture of the encompassing of the feminine bust by the masculine trunk. (3) The *path / impasse* couple of general topology is mainly exploited at the articulations of bodies, in the contrasts of the sliding and the burying as the verification of the mathematical properties of the continuous. (4) The *open / closed* topological distinction is the most essential. An organ, which is immunitarily a topological 'closed set' becomes a topological 'opened set' through the caress, because its limit is no longer defined by what belongs to it but what (sensitively) surrounds it, creating an indecision between surface and endoface. (6) In the *continuous / discontinuous* topological couple, the continuous is the theme.

In that mind, we have to delve a moment in the mystery of the *continuous*, which haunts mathematician Homo since the dawn of days, or at least since Greece. Is the continuous indefinitely divisible in increasingly infinitesimal portions, asks **Zeno of Elea**, who declared that the arrow will never reach the wall as it will always, in every point of its course, remain a portion of path to overcome. This *aporia* propre to the 'stereometric' Greece (Spengler) pursued the West for two and a half thousand years, until Bergson remarked that Zeno incorrectly mixed-up the crossing movement with the crossed space.

Khajurâho (Xe-Xie siècle). Couple enlacé (Maithuna-Murti)

René **Lavendhomme**, the mathematician and erotic writer to whom the present study is dedicated, made the Continuous the constant theme of his mathematical and logical exploration. (Anthropogénies locales, phylogenèse 2. La mathématisation de la flèche) The following lines of his *Basic Concepts of Synthetic Differential Geometry* (Kluwer, I996) procure a *status quaestionis* adapted to the mutual implications of caress and continuous : '**Grothendieck** insisted on not excluding *nilpotent* elements< elements de puissance nulle > in algebraic geometry (...) The, a decisive step has been achieved by F.W. **Lawvere** in a series of lectures given in 1967. In them, he provided an axiom dealing with the set D of elements of square zero in a ring R modelling the straight line. If this axiom is accepted, every function from R to R becomes 'differentiable' and thus infinitely differentiable (*smooth*). From there, Lawvere lays the foundation of a differential geometry rehabilitating intuitive way of reasoning which employed an apparently vague notion of infinitesimal. Let us now state Lawvere's axiom in the way it has been formulated by A. **Kock** : "D is so small that one cannot distinguish the graph of a function from D to R from a segment of a straight line, but D is so big its *slope* is uniquely determined." More explicitly, let us put : for every f : D → R, there exists one and only one b € R, such that for every d in D, f (d) = f(0) + $d \cdot b$.

The *Basic Concepts of Synthetic Differential Geometry* naturally ended with a display of 'weak', 'synthetic', 'intuitive', 'intuitionist' ***logics*** that all no longer include the principle of the excluded middle (occidental third excluded principle). But they should even naturally end with remarks entitled : Mathematic and Sexuality. Indeed, many of the words used by the logician and mathematician here send back to the phenomenology of the caress : *smooth*, *so small that onne cannot distinguish*, *so big its slope is uniquely determined*, *an apparently vague notion of infinitesimal*. Significantly, the first works of René Lavendhomme had been on 'viscous sets' (les ensembles visqueux).

It is no coincidence that Lawvere and Shannuel are so frequently cited in Anthropogeny. Indeed, the first lines of their *Conceptual Mathematics* are more than allusively sexual, when they affirm that Homo's first mathematical ideas occur when he becomes aware of the ***matching*** of his two hands in bilateral symmetry ; and we know of the echoes that ***matching*** with ***mating*** suggests for an etymological English ear. Furthermore, the same authors continue with the ***mapping***, these mathematical functions where a thing applies body to body and that the French mathematicians prettily call : *application*, which supposes that such an adherence occurs from 'fold to fold' (***ad-plicare***), meaning that the fundamental mathematical operation sends back to the first of the seven universal elementary catastrophes. Finally, their third idea of *conceptual mathematics* implies the primacy, in any modelling of Galilean physics, of the product over the sum, or of the ***multiplication*** over the **addition**. Indeed, the latter, in the theory of categories, is obtained simply through the reversal of the arrows of the multiplication.

In the subtle phenomenology of the *caress*, we could say that the space-time that the latter thematizes, in opposition to the mere rubbing, is its ***insistence*** – in the continuous – on its ***nilpotent elements***. This makes it more ecstatic than functional.

4. The efficient duration of sexual coaptation. Orgasm. The zero and the infinite. Conway's surreal numbers.

However, this mathematical vision on the 'smooth' of the caress, even after having underlined its ecstatic characteristics, is not enough for our scope. Biologically, it is still essential that the copulation and the caress, after the ruts and heats, should support each other for a time sufficiently long to be efficient (engrossing), and yet non perturbing everyday life. Hence, the sexed living progressively selected a sustainable, cumulative, cumulating and resolutive copulative process.

In many animals, the sexual caress is already mechanically prolonged by overlapping. This relates to the swallowtail topological catastrophe of the masculine organ and the contraction of the feminine organ, as we see with dogs or with Homo at the crossing of the glans and clitoris that are ***each beyond the other*** towards the partner, hence forming a sensitive knot. However, the caress is cybernetically ***circular***. It is a Baldwin reaction, meaning that the sensation provokes an action, which in turn reintroduces the sensation that reintroduces the

action, for a long while or indefinitely. More than that the Baldwin reaction puts it here in positive retroaction because of the accumulation of neurotransmitters. The cumulative sexual caress starts all over again, each time at a higher level of energy. In the 1970s, Masters and Johnson articulated the orgastic process in four phases : (a) the setting in motion, (b) a plateau phase, (c) a peak of explosive culmination, (d) a resolutive cracking in energy holes. The terminal resolution is characteristic to many biological processes. The Chymotripsine of digestion would end up digesting the organism that it is meant to feed if it did not deactivate at a certain point, or finally be self-destructing. In the sexual caress, these four phases bear the name of *orgasm*, from the Greek *orgasmos*, and probably from the Sanskrit *urgan*, where the Webster etymologically hears a mixt of 'juice' and 'strength'.

With Homo, orgasm is going to be an eminent example of the evolutionary reconversion, of exaptation, just like some swimming bladders became lungs, as in Darwin's example, or, to the contrary, when lungs became swimming bladders, according to recent studies. In the orgasm, we shall note at least three **'exaptations'** – to use this current term that, since 1981, has replaced the primitive word of 'pre-adaptations', which was rather inexact and had been hastily constructed in 1886.

(a) The first exaptation of the orgasm was social. Indeed, in the types of coupling that suppose an intromission, there was first the function to insure the adherence of the male to the female, and, consequently, the sufficient immobilisation of the latter. With Homo, a bisexual orgasm occurs at this stage, i.e. one that is both male and female. We can indeed think that with the angular primate – indicializing and indexating, hence technician and semiotician – coupling became freer, more playful, hence more interruptible, and therefore supposing that coaptation was searched for as long as possible by both partners. On the other hand, with a technician and semiotician primate, male and female no longer have a reason to have different behaviour. On the contrary, they have every opportunity to become mimetic. Hence, if the female orgasm is not a *sine qua non* condition for efficient hominoid copulation, it has become – at least potentially – sufficiently in demand that we should speak of a **bisexual orgasm**. The cytosine that it frees is not only the hormone we find in the contractions of the delivery but is also found in the attachment to the child and the partner, in a rich tri-functionality.

(b) The second exaptation of orgasm was metaphysical. Let us remember the primary epistemological and ontological distinction of functionings / presence-absence-apparitionality that we have already encountered earlier with the caress. Of all hominoid experiences, orgasm is the one that overlaps this fundamental distinction the most decidedly. It is initiated by perfectly describable functionings, such as the three first orgasmic phases of Masters and Johnson, but, in the end those functionings operate the denying of any functioning or to blur them to reach a state-moment of almost pure presence-absence, one that cannot be coordinated and that is indescribable (the cerebral imagery today shows the deactivation of the frontal paths of the voluntary action as soon as sexual caress and orgasm settle in). As always, popular language is here right, in the West it speaks of 'little death', in Africa only as 'the good', unqualified. This combination of the extreme apparition and disappearance will be compared to the Sanskrit etymology of *orgasm* (juice and climax). In Valéry's *Cimetière marin*, one can read : 'Comme le fruit se fond en jouissance / Comme en délice il change son absence / Dans une bouche où sa forme se meurt / Je hume ici ma future fumée…' ? Hence, with the metaphysical angular primate, Homo, an almost banal experience digs right to the source of the Being as such. Intensely functioning, but to convert into meta-functioning. To the practical result that a copulative functioning that is too voluntary wished leads to impotence and frigidity.

(c) **A third exaptation of the orgasm lead to innumerable pre-orgiastic, proto-orgiastic, para-orgiastic states** covering almost every hominoid existence. By its overlapping between functionings and presence-absence, orgasm suggested to Homo all those inexhaustible abandonments that can be found in alcohol, drugs, prayers, mystical ecstasy, music, sublime architectures, scientific insight, vertigo, and death games. In short, what Maslow called ***peak-experiences*** in the 1960s. He had encountered these experiences in a survey conducted with every student of his university. Previously, these students had been cited by others as examples of 'normality'.

Back to our theme. Does the **mathematician** have specific acquaintances with these three exaptations? More *geometrically*, the **topology** of the continuous already showed us the outcrops of emptiness in the nilpotent elements of **Grothendieck-Lawvere-Kock-Lavendhomme**. Yet, more *arithmetically*, the field of ***numeration*** is suggesting too. A good half century after Cantor's transfinite numbers, **Conway's** *surreal numbers* no longer derivate from the plenitude of the One of Plato and the Neo-Platonism, but of a ***cut between two empty sets***. Indeed, what is less full than a cut? What is less full than empty sets? And what action is more minimalist than to suppose that these empty sets are two, only situated to the left and to the right of the generating cut, or slit. This is a writing so pure that the infinite infiniteness of Conway numbers takes root in *the* emptiness, or in *their* emptiness. This – let us note it in passing – is perfectly convenient with the anthropogenic definition of Mathematics as the 'general theory of pure indexations and the absolute practice of pure indexes', since indexations and indices are empty signs (not linked to any particular object) and infinite signs (fitting any object, whatever it may be). (Athropogénie générale, Chapitre 19. Mathémathique) What a complicity of the infinite with nothingness! Going from one *into* the other. It is true that the orgasm on one hand is the most senssitive, while Conway's numbers on the other hand are the most abstractive. But this abstract and this concrete have some noddle traits in the hearth of any epistemology and every ontology.

Conway tree

$$\varnothing \, 1 \, \varnothing$$
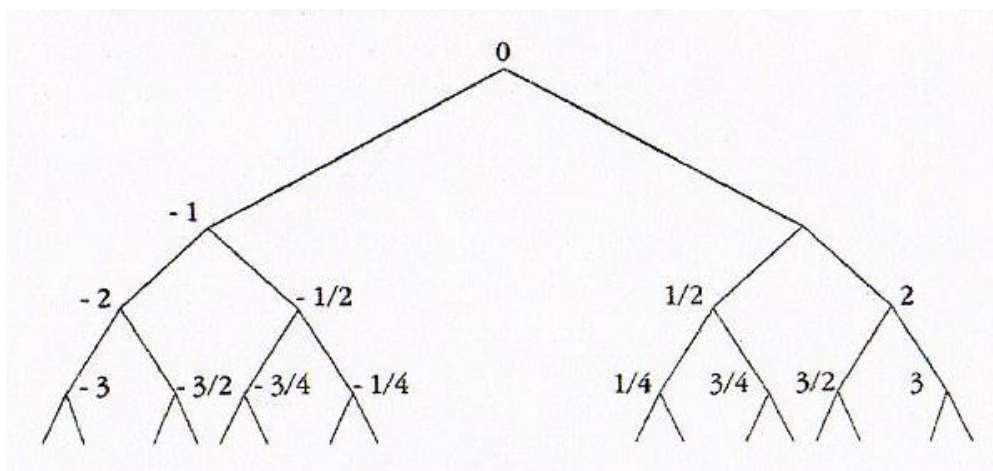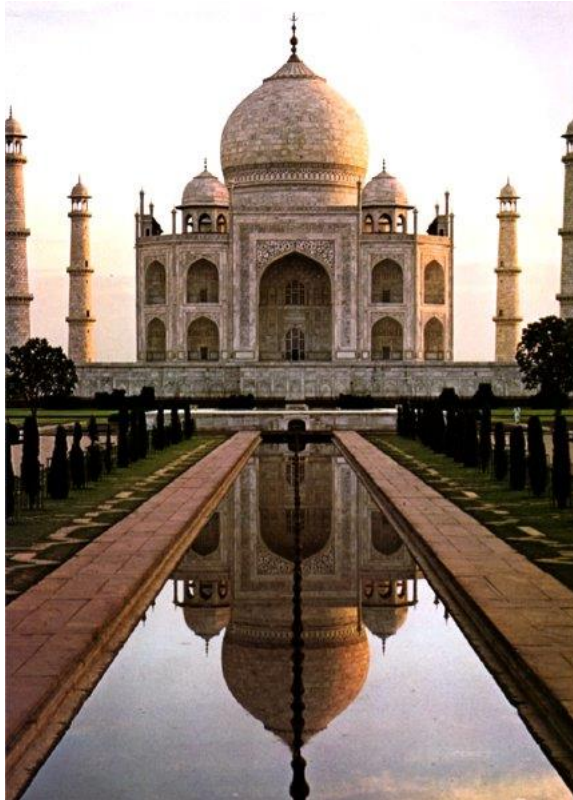
Coupure   entre   deux   ensembles vides

Conway

Tadj Mahal

When Eilenberg – who created the Theory of Categories with Mc Cane in the 1950s – visited Louvain-La-Neuve for the last time before his brain haemorrhage, he confided in René Lavendhomme that he saw in Conway's numbers "the most beautiful mathematical idea of the second half of the twentieth century". Lavendhomme and Eilenberg both had a singular interest for China, and during the same stay, Eilenberg insistently repeated to the author of the present text that the next theme for his Columbia course would be Chinese painting. Evidently, the latter pushed as far as possible the relation between the Empty and the Full during the Central Empire fifth century B.C. , when Lao-Tzu had made of the cut the sexual and orgasmic source of all things in the poem 6 of the *Tao Te King :* "the genius of the valley does not die. / It is where the obscure female resides. / In the house of the obscure female resides the root of the heaven and the earth. Subtle and uninterrupted, it seems to last. / Its function never tires."

The mathematical and ontological relation between All and Nothing probably inspired René Lavendhomme in *Alphes*, the book of his poetry, for the poem that the author judged most appropriate to read over the dead friend's coffin.

C'est en plein milieu de rien que surgit comme par décompression la nécessité

C'est dans la nécessité que surgit l'improbable

C'est de l'improbable que surgit le champ

C'est du champ que surgit l'extase

C'est de l'extase que surgit le tout.

C'est du tout que, comme dans un soupir, surgit le rien.

A first time, the poem was pronounced very slowly so that the listeners could sense the mathematical and libidinal charge of the key words : *rien* / *décompression* / *nécessité* / *improbable* / *champ* / *extase* / *tout* / *soupir* / *rien*. Not forgetting the indicative present of *c'est*, and the precise semantic of *surgit*, which characterises so adequately the 'ad-venturous' events that *is* our 'Universe of evolutionary chances' (Eble), that now replaces the eternity of the traditional 'Cosmos'. Equally, the slowness underlined that it was the *rien* and not the *tout* that was the first and the last word of the poem, like of the Universe. Then the text shoud be read at normal speed, allowing listeners realize the extent how all this – albeit metaphysical – belongs to the most trivial temporality and spatiality of our existences.

5. The limits of mathematics before some biological paradigms

We have just encountered multiple echoes – sometimes very close – between sexuality and mathematics. This type of comparison was widely used in France between 1970 and 1990 in the moment of influence of psychoanalyst Jacques Lacan. The latter considered the human being as a 'subject', which he understood as the unconscious substrate of the language that manifested itself in repression, stumbling, and even in what he called "foreclusions". With the master and several of his disciples, the Lacanian subject was then figured and handled through topological events, such as Moebius' ribbons (another effect of the cut), the tores, Klein's bottles and particularly Desargues' *projective plan* whose the edges join at the infinite. In the projective plan, Lacan created a diagram, his "Schéma R", cutting a quadrated figure by a diagonal, so situating the "*Imaginaire*" at the top left corner, the "*Symbolique*" in bottom right corner, while the *Réel* was figurated by a hachured band following the left of the diagonal in Lacan, *Les Ecrits*, and surplombing the diagonal in Lavendhomme *Lieux du Sujet, 2002*.

On the other hand, everything that, in mathematics, could exalt the Zero and the Infinite, or still, the logical paradoxes of axiomization (for instance the Tarski paradox for language, and Gödel's for arithmetic) was revered to celebrate in the Lacanian 'Subject' its ontological flaw and its function of empty epistemological 'empty case', more familiarly its Platonician, unfulfilled *desire*. In this fervour of neantisation, reactivated by Sartre in de 1940s, Conway's *surreal numbers*, which are borne from a vertical cut between two empty sets and swimming in a preliminary infinity of the Multiple, were visited by Alain Badiou in his 1990 book *Le Nombre et les nombres* and by René Lavendhomme in 2002's *Lieux du sujet*.

A good occasion to emphazyse that the comparisons that the *Anthropogénie* makes here between sexuality and mathematics are of a very different nature than the lacanian ones. Anthropogenetically, mathematics is – let us remember once again – the general theory of pure indexations and the absolute practice of pure indexes (discharged and disindicialized). In this way, it is ideally applicable to Physics, the science of the pure indexable events in the Universe. And it is undestood in this way that mathematics is in kinship with sexuality, where indexializations abound in the form of coapting organs, coapting slopes, infinitesimal (nilpotence) moves of their caress, in the diffusive arousal of ruts and heats, and finally, in the transgressive bordering of the orgasm between the describable functionings and the undiscribable presence-absence-apparitionality. All this is more written, synchronic, in mathematics, when it is more rhythmic in sexuality, where rhythm is extreme in two ways. (a) First, each partner must no longer ensure his rhythm as a topological 'closed' set, but be content receiving it from the other as a topological 'open' set according to anatomical-physiological and mathematical properties of the category of the 'dual', of the Dyad, may be a triadic Dyad. (b) Second, the rhythmic inter-mentality of the couple (real or imagined) not only concerns trivial functionings but also the overlapping of the initial universal anthropogenic distinction : functioning / presence-absence-appartitionality.

However, to sufficiently grasp the confluences between mathematics and sexuality upon which we have insisted thus far, it is still necessary to recognize the three **limits** of the former in its approaches of the second. (1) The incapacity of topological, symplectic and even categorical mathematics to understand the *formations (Gestaltung) through dynamic (re)sequentiations* of the recent Biochemistry and the *formations(Gestaltung) through (re)sequentiations by the neuronal connections and cleavages* of today Neurophysiology. (2) Particularly, the mathematical incapacity to describe the *'evolutionary chance'* as understood by G.T. Eble (cf infra). (3) Finally, the mathematical stumbling before the *event as such that would eventually be the Universe as the ultimate and "principial" Event of events.* Thus merely factual, not technical.

Yet, these three aspects are decisive in hominoid sexuality, which is : (a) the exploitation and realization of the most ostentatious **DNA (re)sequentiation** now studied in *proteomics* (1997) in the pairing, and otherwise the most powerful **neuronal resequentations** between functionings and presence-absence-apparitionality in the bisexual orgasm. (b) The most cutting-edge experience of **evolutionary chance** versus **probabilistic and statistic chance**. (Eble). (c) Why not, the key-event of an Event-Universe.

5A. Mathematic vs (re)sequentiation as an unforeseeable event

One day, the author of the present text was browsing through a 1970's **Atlas de Cytologie** that was particularly eloquent because of its black and white illustrations, when René Lavendhomme popped up. The question sounded : what can the mathematician say about this? The answer was even frank : Nothing. An atlas of cytology organizes views inside the cells, hence of these organelles that, since 1939, we call 'ultra structures' because they cannot be seen with an ordinary microscope. Assuredly, such illustrations do not allow seeing the proteins that

make up the organelles, accordingly to the recent proteimics, and even less the amino acids that form the proteins through their dynamic sequentiation and re-sequentiation (obeying strong and weak biochemical liaisons). However, the forms (Gestalt) that we can naively see are both so improbable and so characteristic that, when we know of their formation mode (Gestaltung), we can vividly imagine, hallucinate them. At first glance, my visitor had felt that he was no longer on known ground. This was beyond mathematics, at least his.

On another day, René Lavendhomme popped in as the author was skimming through an issue of the magazine 'La Recherche' where there was an image of Einstein's brain in its bowl, with all its strangeness in the left temporal paths and relays that concern spatial, even spatial-temporal representations, let us say quadri-dimensional. René Lavendhomme did not even look at the image. When we sat down for dinner, he confided that, as a child, he fell from a cupboard. This had such an effect on his brain that the family doctor wished his parents that he did not survive. Biographically, this could explain his repulsion before he spectacle of cerebral neurones. However, in the same issue of 'La Recherche', another mathematician spoke sarcastically on the same subject. Was it not that physiological formations as such (resequenciating) unsettle the mathematical modelling?

However, since 1950, mathematicians have not spared their efforts to model the ***event*** as an event. To the question 'is this transformation true or false?' the theory of categories, in its chapter on bundles (théorie des faisceaux), invites to add now : 'where?' and 'when.' Illustrating this point in Dominique **Bourn's** second section of *Schize et Guise*, René Lavendhomme reread Freud's *Studien über hysterie* under the light of this kind of ***Local Logic***. One the way, he demonstrated that the four patients there described by Freud were everyone in several 'places' (loci) of discourses that were incompatible, and consequently that they had cured briskly, progressively or never, according to their capacity of identifying these places, then eventually of emigrating from them. Problems of the logical location of the locutor are fundamental in every kind of discourse, and logic of the discourse universes. Already very ill in august 2002, René communicated the author several drafts of a text entitled: *A partir des quatre (univers de) discours* of Lacan, where are decribed with a rather miraculous subtelty four speaking locations of any philosophical (even scientical) discourses : (1) le discours du Maitre, (2) le discours de l'Universitaire, (3) le discours de l'Hystérique, (4) le discours de l'Analyste, all responding to the enlightenment of the Categories Theory as a ***Topos theory***, meaning of the Universe of discourses.

Nevertheless, the final page of the *Lieux du sujet* proved to be, as soon as 2001, an obstacle for every mathematical modelling of the event as such. Indeed, we read there : "a suggestion that would be to explore and that I do not place as acquired would be to see the catagorical '**objects**' simply as the integer numbers, and the categorical '**arrows**' as criss-cross" (in the sense of the topological theory of knots, on which the author had previously brought the attention of the mathematician). But what the pertinence of integer numbers (probably chosen for their neutrality, inertia, anti-dynamism) for designating objects of evolutionary events, like amino acids forming proteins, or still in the case of learning through neuronal (re)connections and (re)cleavages. There the event does not only consist in the displacement of neutral elements in the sequence but of elements stuffed with multi-factorial chemical ***potentialities***, such as the covalent, ionic, hydrogen, hydrophobic links, without mentioning Van der Waal's interactions. In the objectal reality, are real 'objects' not as 'arrowing' as arrows? In fact, in this ultimate proposal, the tired mathematician seems to have had no illusion on his approac. In another more

decisive text on topology, he had ended previously : "We do not have a drawing of the universe".

5B. Mathematics vs evolutionary chance

In 1999, G.T. Eble had the great merit to observe in his seminal article *On the Dual Nature of Chance in Evolutionary Biology and Paleobiology* ("Paleobiology 25") that, since Darwin's **natural selection**, and particularly since Gould and Eldredge's **punctuated equilibrium**, the notion of 'chance' covers two very different realities : **a probabilistic (statistic) chance and a stricto sensu evolutionary chance.** He widely develops the latter in multiple instances, but we shall be content here with our two favourite cases : (a) that of the (re)sequentiations of amino amids forming proteins and (b) that of the inumerable exaptions of Homo's angular body in dance, music, images, drugs, tectures.

Then, we have to measure the extent to which the mathematician is uneasy with that last sense of 'chance'. For being sure, let us turn to F. William **Lawvere** already encountered by us as a mathematician of anthropogenistical mind. A categorical concept had to interest him concerning the specificity of events (venir, ex). Indeed, if the Theory of categories is a 'structuralism of transformations' (Lavendhomme), its leading point in it is probably the *adjunctness*, where it is no longer a question of moving from state to state within one same category, but to consider some 'functors' indexing transformations from one category to another, then pointing to 'natural transformations' (Eilenberg and Mc Cane) from identity to equivalence, then finally to simple **comparability** (Lawvere), or more trivially to kind of miror **reflection** (Lavenhomme). This latter is an occasion where the Same, without ceasing to be the Same, is no longer really the Same, but innovates – whether we move from category *C* to category *D*, or inversely (which means that we shall speak of 'adjunct on the right" and 'adjunct on the left'). At this occasion, the Same comprises some aspect of the Other according to some 'Hegelian negativity' (Lavendhomme). Under the condition that it respects the 'mathematical situation', meaning that, for every A of the *C* category and for every B of the *D* category, some diagrams commute. Is it not there the epitome of those natural transformations (meaning without too many preliminary conditions) that were the initial topic of Eilenberg and Mc Cane when they begun to work on what they originally called 'the stuff', and that – one fine day – they had the epistemological and ontological audacity to call 'categories' in homage to Aristotle?

Perhaps. But compromisingly, developing his theory of Adjunctness, Lawvere begun to invoke the classical notion of *dialectic.* Now, the evolutionary chance of Eble– decisively inaugurating the "event" accordingly to anthropogenic WORLD 3 – breaks away radically with any kind of Dialectic. In fact, Hegelian dialectic – and *a fortiori* Engelsian, which Lawvere does not forget – will have been the ultimate attempt of WORLD 2 to recuperate the evenemential contingency of history into a form of necessity at great and medium scale. Sufficiently so that the "strength founds the right" (Hegel). On the contrary, the present evolutionary chance unsettles any justification and necessity in every order, the latter though supposed evil or good. René Lavandhomme was instinctively startled by Lawvere's assurance about *Adjunctness*. Strangely (symptomatically?), at the start of his *Conceptual Mathematics*, Lawvere announced that he will skip the adjunct.

Let us not leave behind the unease of the mathematician before the 'evolutionary chance' without remembering René Thom, whom we evoked earlier for his most enlightening differential topology of the seven elementary catastrophes. In a solemn session at the Académie des sciences in Paris, he invited his audience to abandon henceforth any research on Biochemistry, whose results, he explained, were not mathematically representable, intelligible, describable !

5C. Mathematics vs the entire Universe as evolutionary, 'ad-venturous' event. The admirative amazement

In Stephen Jay Gould's love for Darwin, we find the capacity of the latter to grasp the Living as one same gigantic *global phenomenon* with a *simple and unique last causal principle* : endless *variations* coupled with *selection* by changing environments. The Gouldian Eldregian 'Punctuated equilibrium' longs to the same Unitarian grasp, although it takes into consideration two properties of the Species that were still unclear in Darwin's era: (a) their perseverance over long periods, sometimes three or four million years; (b) the fact that species can only evoluate on the periphery of groups of a specie, resulting in another specie that, in its contacts with the original specie either cohabitates with it or eliminates it or still modifies it by infiltrating little by little. This is suggested in the term 'Punctuated equilibrium' (the first idea was by Eldgredge, the term by Gould).

We then see that, for the *Anthropogénie* – which offers to understand the emergence of Homo on its Planet and that also asks questions as to the transcendental habits of the Universe of which Homo is a state-moment, – Darwinian or Gouldian *evolutionary chance* breaks away radically with all traditional cosmologies and cosmogonies. Until yesteryear, Homo only ever conceived every forming (Gestaltung) through modelling or plasticity (carving). Between 1900 and 2000, formations by dynamic (re)sequentiations (either those of amino acides or neuronal connections of cleavages) radically break with modelling and plasticity. They are Homo's newest and most troubling *epistemological and ontological discovery*. Speculatively, but also practically. If everything in the World is the result of a modelling action, then existence consists in obeying (as an Angel) or disobeying (as a Shatan, Satan) the modelling principle, no matter whether the latter is animated (Yaweh, Allah, Deus) or inanimate (Great Axiom, Reason, Man-yu). At the opposite extreme, a Universe of evolutionary chance could neither be obeyed nor disobeyed because it is congenitally and ultimately unforeseeable in its Physics, Biology, Technique and Semiotics. It can only startle and hence be repulsive or admired for its spontaneity, which on this occasion takes its precise sense of source (spons). And sexuality, which is the most radical experience of biological and intercerebral resequentiations with their amazement, is the exemplary or culminating experience of an ad-venturous surprising Universe.

6. Pre-orgasmic, para-orgasmic and post-orgasmic practices

Sexuality is so fundamental in the human existence – and probably in the Universe, since bacteria – that semiotician and technician Homo has created – alongside the ruts and heats that have become constant since the Bonobo chimpanzee – innumerable equivalences, announcements, souvenirs and allusions of it in his most daily life. In particular as, as we have just seen for mathematics, scientific *cosmologies* fail to fully hold him, hence calling upon (artistic, rhythmic) *cosmogonies*.

(Anthropogénies locales, Cosmogonies contemporaines, 1, Cosmogonie et cosmologie)

6A. Ancestral arts

Before moving on to contemporary (re)sequentiating sexual cosmogonies, let us start with a few ancestral reminders. For the Angular Primate, the Dogon house splits its housekeeping functions with definite angles "like the organs of a man lying on his side and procreating" (Griaule). In Palaeolithic caverns and the innumerable hypogeal temples where the parabolic, elliptic, hyperbolic umbilics rule, the dominating images are explicit vulvas in Chauvet, and implicit in the criss-crossing of Lascaux corridors. Everywhere, but especially in Eastern Borneo (pre-Neolithic), the organisation of impregnated hands gives to see the matching and the mapping (fr. application) at the service of the principles of mathematics and sexuality. Neolithic quadrated framing covers the entire Old Europe of Marija Gimbutas with conjunctive figures that are resolutely geometrical. In Egypt, under the geometries and calendars of the pyramids, the power of primary empires is coital right to incest. The Harris 500 papyrus announces our remarks on the hormonal suffusion of the holosomic caress and on the attraction of the original median vertical slit: "the love of you penetrates my entire body / like the wine blends in water', 'in the castle of my loved one / the door stands in the middle of the building / both sides are opened". If the giant vulva of the Taj Mahal is generally considered Homo's most accomplished building, it is because all the Asian architects who built it around the body of a darling princess dead in childbirth organized it from a central vertical cut to two wings chamfered (chanfrainées) in vulval lips into a unique solution in the Mongol art, and that we have compared earlier to the cut between two empty sets bearing Conway's surreal numbers. 'Matrices of Allah, the matrixing, the matrixial, repeats the Koran).

In one word, even in rhythmic cosmogonies, cosmologic mathematics does not go unnoticed. The choice of perspective, a mathematical component of painting, is a prevalent factor for determining erotica. For instance, the two divergent perspectives of Japan and China, more topological, and conversely the convergent Western perspective, more geometrical, determined three epistemologies and ontologies of sexual Coaptation, both spatially and temporally. Courbet's *L'Origne du Monde* cannot be envisaged without the meeting point of vanishing lines behind the surface, symmetrical from the meeting point of the lines of voyeurism before the surface.

6B. Contemporary (re)sequentiating cosmogonies

Alongside all these ancestral formations through plasticity or modelling, the discovery of biochemical formations through (re)sequentiation (amino and neuronal) had to provoke revolutionary cosmogonies, since 1970 at least. So revolutionary that the *Anthropogénie* speaks of them for an entire section : **Cosmogonies contemporaines**. (Anthropogénies locales, Cosmogonies contemporaines)

Obviously, the first triggering occurred in *music*, a (re)sequentiating art *per se*, and one that is ostensibly mathematical (Anthropogénie générale 10, Musique et langage massifs. Anthropogénie générale 15. Musiques détaillées). Learned music with Steve Reich, but also popular music in the Chicago cabarets, soon globalized through the radio under the name of 'repetitive music'. Symptomatically, when biochemists Dressler and Potter attempted, in 1991's *Discovering Enzymes* (Sc. Am. Library) to thematize the new epistemologies and ontologies involved by aminated (re)sequentiations, they had exclaimed : "There is *something musical* in it". In this regard, the gesture of the danse had similar resources, and the choregraphy of the *Rosas*, filmed by Thierry de Mey, was soon to follow the new musical spirit.

On the other hand, when Micheline Lo's *painting*, from 1980 to 2000, chose to elaborate 'living formation' (Gestaltun) as dynamic (re)sequentiations – neuronal in a first while ("I paint the cerebral landscape"), then amino ("This calls for a new logic") –, the subject had hardly been approached unless in Jasper John's *Alphabets* and *Numbers* (1955) and Stella's *Albatross* (1970), and finally thematically in David Lipszyc's 1970 *Propositions.*

Architecture, because of the massiveness of its materials (which discourages hazardous experimentations), had to wait for the 2000s before offering the novel spirit, that of a sequential habitat in works of Frank Gehri, Saha Hadid and a handful of others. A very difficult task when reminding that the hominoid mammal, that spent ten lunar months in a womb, has always expected from its habitat something securing, stabelizing, quasi archaïc, not averting a feeling of "déjà là" and "déjà vu". Just what he was frustrated by the the "modern" and post-modern" re-formable architectures of the sixties and seventies, pursuing an 'instantaneous architecture', reformable according to the instant wish (In the I970s, the Swiss Grataloup had proposed houses in mutable material (like the plastics of Dupont de Nemours) that by means of a simple the inhabitat could transform at his last desire). for a mammal, this last desire was'nt it his fundamental desire? Fortunately, a sequential desire is not an instantaneous one, as Gehri's houses have demonstrate.

6C. The virtues of photography

However, since 1980, *photography*, an art that was sufficiently economical to authorise risky explorations, allowed Pierre Radisc, an eminently cosmogonist photographer, to visit the Ebles's et Gould's evolutionary chance on the most photographical of all objects, the *skin*. On this occasion appeared a geology of the skin, the skin of paired faces (*Couples*), of an African rough belly (*Lucky*), of a smooth Asian belly (*Marilou*), of trees (*Waldszenen*), of opera worn

decors (la Monnaie), of heavenly bodies (*Heavenly Bodies*) where the artist maps, matches, mates the lentigo on naked women in categorical 'adjunctness' with the stellar constellations of the skies. The evolutionary chance mixing there the nearest and the furthest of the general and differential topology.

Recently, Pierre Radisic produced an image that we may call *Contemporary Khajurâho* and that adequately illustrates our present study. The theme was familiar to him since his *Pornscapes* (in actual fact 'Eroscape') edited by Goliath in 2006, but where the photography was stil analog and exploiting the traditional ressources of the mounting. This time, the approach was digital, and so could use characteristics of the ***mathematical writing***, that can be largely ***multidirectional***. And on the other hand obtain a particular quality of white, this quantal blank, that has been encourtered by Mc Cay when in 1905 he invented Little Nemo, after the *Dreams of Rarebit Fiend*. In digital photography, the neantization of white is even reinforced by the imponderability of photosensitive paper. (Anthropogénies locales, Cosmogonies contemporaines 7, Bande dessinée : Le blanc d'annulation (McCay)

By the means ot a digitality, Pierre Radisc now managed to elevate the two bodies that he had already orgastically coapted in his *Pornscapes* to the generality of an ***event of Universe***, thus passing from the evenemential to the transcendental. Radisic was already encouraged by the customary character of his shots that is closer to Michelangelo (The Last Judgement) than to Leonardo (Battle of Anghiari). Under the condition that the only thing to keep in the bodies was precisely their coaptive parts; hence by suppressing the heads, which would remain always 'expressive' (no transcendental). For that scope, the photographer articulated the bodies with the anamorphic lines of their geometric embryology in D'Arcy Thompson. Finally, he placed these bodies in columns or lines without ever more framing or closing them, so that everything still belongs to the 'open sets' of the mere topological space. Figurating the ***evolutionary Universe itself as Event and Ad-venture***, in its first and ultimate biochemical and intercerebral accomplishment, in the sexual and orgasmic coupling. The final object, may be, of every metaphysical ***Amazement (ex-) and Admiration (ad-).***

Pierre Radisic, Khajurâho
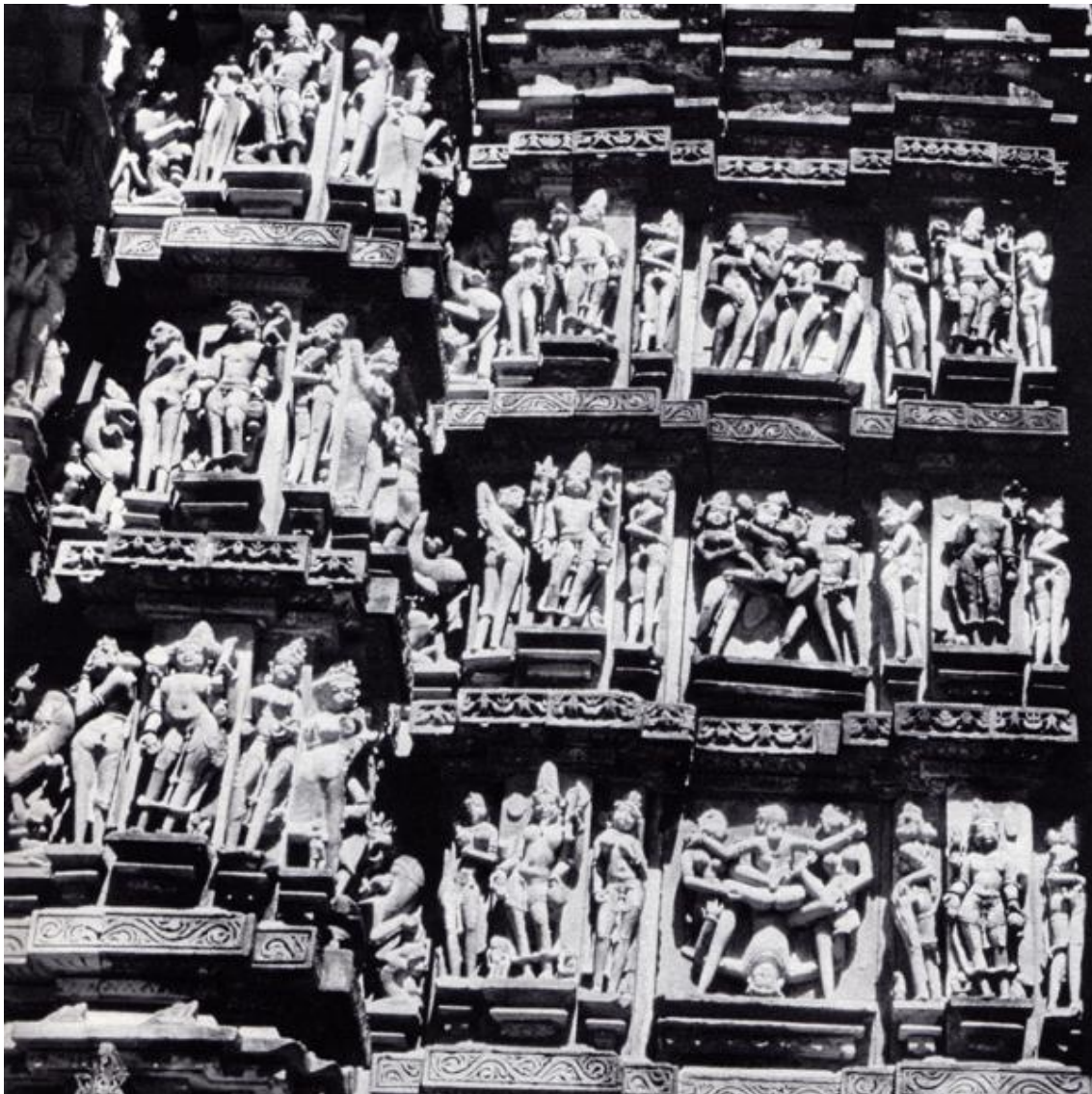
Khajurâho. Façade du temple Kandariya

However, every practice of an art has its limits. Digital photography implies a mastery of the photographer that forbids him the preliminary and accidental submissions to nature of the analog photography, submission so thriving that was able to capture the monsoon light on the couplings of the Indian secular Khajurâho, or the endoface light that Stieglitz has immortalized on (in) the body of his wife, O'Keefe. The submission that, from strike to strike, the painter Micheline Lo has embodied in the colour-trait-coaptation-gesture of her "formations vivantes". And that palpably we hear in Steve Reich's resequential sounds. Ideally, the complete experience of Universe could be obtained by looking at Anne Bernard's and Pierre Radisic's Kahajurâho but on a background of Micheline Lo's *Chemin des Ecritures*, as our eyes linger and slide to the print of one of Stieglitz' nudes of *O'Keefe*. Steve Reich's *Telehim* would provide the musical background.

The gardens around the house would be designed by Frank Gehri.

6D. The ultimate resort of literature

However, language, because it can speak of everything and of itself, and even express its limits, probably has here as always, on the present theme of mathematics and sexuality, the last word. And we shall once again go to open René Lavendhomme's. This time in his poems, *Alphes*. In 1980, in an article of "Litura", the mathematician had remarked the complementarity of the mathematical writing and reading, which is ***multidirectional***, left/right, top/bottom, and the language writing and reading that are as ***linear*** as the language.
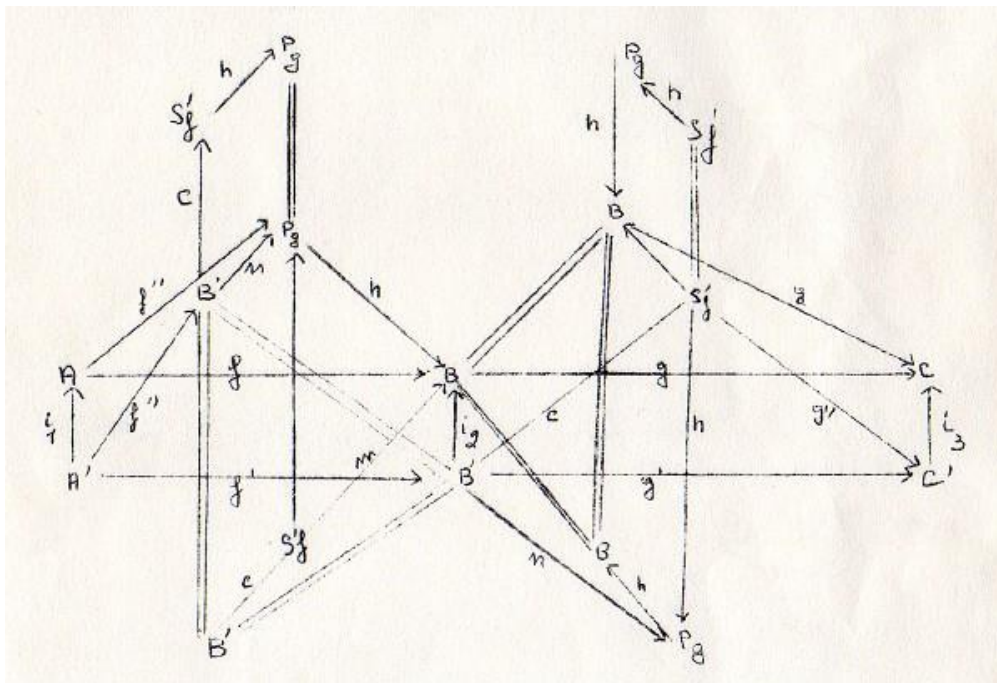
But, for the scope of a mathematical-literary writing, the mere scription was not enough. In 1877, Mallarmé wrote the 200 pages of *Les mots anglais*, a phonosemic survey of English, a consonantal language. With that, he created, he said, "a novel science", that will never be touched by structuralist linguistic since Saussure. In 1997, *Alphes* made, more concisely, the same Mallarmean phonosemical approach for French, a vocalic langage. Lavendhomme, a mathematician who was deaf to music, had an exquisite ear for phonosemy, Hence, he converted Rimbaud's *Sonnet des voyelles* – a voluntarily subjective and adolescent invention – into the objective, or at least objectal, l'*Aleph revisité*. (Anthropogénies locales, Linguistique 1, Phonosémie et parti existentiel des langues)

L'aleph revisité

A la suite de Borges, je m'étendis sur le sol et je regardai la fente de la dix-septième marche et je vis. Je vis l'aleph.

Je vis i. Je vis le i de mythe, de mystique et de rythme. Je vis le i du fil qui file libre, je vis le i du livre, le rythme du fil du livre. Je vis l'hymne de la vie vive.

Je vis l'a. Je vis l'a d'art et d'âme. L'a de femme, pas banal, même fatal. L'art d'a, large. Largue l'amarre et par là passe. Voilà. Je vis A.

Je vis u. Luxe et culte. Je hume une luxure brûlante. Je hurle l'u du but. Et chute brute de pustules crues. Je vis l'u de je fus. Ce fut rude. Je vis Méduse.

Je vis l'o. L'o de robe, rose, roseraie, rosserie. Que l'o de l'eau rime. Je vis l'o d'ose, d'audace, de fort. Je vis l'or. Je vis mordre et croc. Je vis l'ombre, sombre et profonde, et je sonde un fond sans fond.

Je vis l'è. Je vis l'air, le vert, l'espace d'être. Et l'effroi, l'erreur. Mais l'espoir, l'estime. Je vis celle, belle et cette fête de rêve et de perles. Et, bête, je vis perdre. Merde.

Je vis l'é. L'été, étalé. Je vis un bébé et, hé hé ! un baiser. Elysée et Persée. Je vis l'é évasé, épuré, évidé, érodé. L'ailée alliée et liée. Je vis l'é hébété.

Je vis «en» de Vian. L'ensemble et le sang. Je vis l'en de danse et de transe et l'en de cendres. En ce centre je vis le ventre.

Je vis l'«ou». Lourd bourgeon. Fourbe, foutaise ou foutre. Je vis l'ours. C'est louche, je vis mouche et je touche d'outre en outre. Je vis rouge.

Et ainsi vint la fin.

La fin d'aleph où tout là dit et crie, passe et chante, valse et danse, ourle et tisse, vit d'angles aigus, obtus, pointus, touffus, tout vu, tout entendu sauf rien. Sauf ce qui n'est pas et fait mouche ou banquet.

René Lavendhomme. Alphes

Let us now combine the phonosemy of langage and the multidirectional mathematical-literary writing to figure a loving couple devoid of heat, by words disposed in the form of a Magen David, whose the two triangles are juxt opposed without mediation, only touching at the tip: Vague / Drague / Pas /Las /// Piste / Triste /Fil / Vil :

Rimes et rien entre un et deux

Elle			Lui
Passe			Va
Belle			Suit
Lasse			Fat
Onde			Hier
Blonde			Fier
Prune			Sûr
Brune			Mûr
	Croise	Vue	
	Toise	Nue	
	Moi	Dru	
	Toi	Cru	
		Vague	
		Drague	
		Pas	
		Las	
		Piste	
		Triste	
		Fil	
Elle		Vil	Lui
Belle			Fuit
Rêche			Glisse
Sèche			Lisse
Zeste			Bris
Peste			Gris
Froide			Roide.

René Lavendhomme. Alphes

On one day that the poet held *Alphes* in his hand, the author asked him if there was a poem that particularly accomplished his intention. Without hesitation, he turned to page 24-25 in the section entitled STRUCTURE. This double page was in fact two pages forming just one, thus so multiplying the poetical and mathematical synchronicality and multidirectionality, like in Mallarmé's *Un coup de Dés jamais n'abolira le Hasard*. This time the loving couple had retrieved his heat.

C'ÉTAIT   LE NOMBRE
issu stellaire

EXISTÂT-IL
autrement qu'hallucination éparse d'agonie

COMMENÇÂT-IL ET CESSÂT-IL
sourdant que nié et clos quand apparu
enfin
par quelque profusion répandue en rareté
SE CHIFFRÂT-IL

évidence de la somme pour peu qu'une
ILLUMINÂT-IL

LE HASARD

Stéphane Mallarmé. "Un coup de Dés jamais n'abolira le Hasard". Editions La Table Ronde

For a final word, can we somewhat generalize? For the poet mathematician, the mathematical-poetical writing-reading was so much the '*real*' below the banal directional '*reality*', handled by descriptive and narrative reading, that, a few days before he died, he wanted to write his death, breath after breath. He called for his computer. And we now read his last leap over the anthropogie's primordial ontological and epistemological distinction: 'functionings / presence-absence-apparitionality', that we encountered so protrusively in the orgasm as "little death". His last journey has been presumably that of every mathematician, between the *Real* (mathematical, here the abstract tracing of the monitor) and the *Reality* (physical, the light and the material screen of the monitor). Between All and Nothing. In the scoffing of the universal laugh.

Si tinte le bruit
Une horreur te glace.
Si parfois la nuit,
Tu te sens trop lasse,

Alors je dis : passe
Sans refermer l'huis.
Tu vas et tu suis,
Laissant une trace.

Savoure plus pure
Vague de rupture.
Renouvelle encore

Succès que tu sculptes,
Victoire de culte
En son disque d'or.

Tu t'effrayes et puis
Illumine et, baste !
La peur te prend, fuis,
Épuise le faste

Ailleurs et jouis.
Vois l'étoile chaste,
L'arôme du fruit
D'une joie si vaste.

Odeur que tu humes
Effacée en brumes,
Un rêve trop fort

Te conduit vers une
Lumineuse lune.
Et, voilà, tu dors.

Si le bruit
Te glace,
Si la nuit
Te lasse,

Passe
L'huis,
Suis
La trace.

Pure
Rupture
Encor

Sculpte
culte
D'or

Et puis
Baste !
Fuis
Le faste.

Jouis,
Chaste,
D'un fruit
Vaste.

Hume
Brume
Fort,

Une
Lune
Dort.

René Lavendhomme. Alphes

" Je fixe l'écran de la machine gérant ma respiration. Un graphique s'y développe. Avec ses zigzags verticaux usuels. Il y a plein de chiffres et d'indications illisibles, mais je me concentre sur le graphique. C'est lui qui gère mon souffle, qui me gère. Clairement la courbe descend. Ma respiration s'espace, se rétrécit. Le graphique atteint le bas de l'écran. La figure toute entière remonte pour que la courbe zigszagante puisse descendre, encore. Et je vois apparaître sur cet écran noir et blanc, une ligne rouge, horizontale. Sur la ligne est clairement écrit, en lettres grasses, le mot "mort". Et le graphique de ma respiration descend en dessous de la ligne rouge. Alors, c'est le point central, j'éclate de rire. Et je me dis que ces médecins et cette machine autour sont idiots, ils vont croire que je suis mort puisque la machine le dit. Mais moi je sais bien que ce n'est pas vrai. Et ça me fait rire, rire.

Et ma courbe de souffle continue de descendre. Une nouvelle ligne rouge apparaît au bas de l'écran. Elle porte les mots "mort définitive". Et ma courbe crève ce plancher aussi. Et je ris, je ris, je ris de n'être pas mort.

Je trouve que c'est un rêve hallucination superbe. Bien sûr, j'y dis mon attachement à la vie. Mais il y a l'extraordinaire rôle de la machine. Machine désirante. La ligne de mort est rouge comme la cerise du désir. Pulsion de mort – pulsion de vie ? Mais je m'émerveille encore de mon immense éclat de rire, juste tout près de la mort. J'ai écrit ailleurs : et le rire absolu force la fin du monde. Toutes les voyelles s'y pressent dans un rire de vie." (Décembre 2002).

Henri Van Lier, 2008