

THE METAPHORMATTED HUMAN: BIO-ARTISTIC PRACTICES OF THE HUMAN NEXUS

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A man's reach must exceed his grasp, or what's a meta for?
Gregory Bateson

INTRODUCTION

The most spectacular hold of the mechanistic over the subjective looks promising in genetic technology. Genetic technology draws on a wide range of preconceptions, vulnerable to artificial manipulation. To this is attached the more or less fantastic idea that we could, in the short term, 'make whole men.' In such fantasies, the primitive biologisms compete with humanisms and with helpless theologisms, and not an ounce of understanding of the conditions of anthropogenesis in evolution is discernable among those who hold such opinions.

Peter Sloterdijk

Here, we examine a variety of constituent pseudo-evidences in contemporary artistic discourses and practices about/on the destiny of the human species, at the dawn of wide scale technical and cultural transformations made possible by the current cybernetic convergence of informatics and molecular biology. These pseudo-evidences have been appearing for a while now, in cyborg fantasies and delusions stemming from NASA circa 1960 and updated by the post-constructivist discourse of Donna J. Haraway's disciples: "Cyborgs do not stay still. Already in the past few decades that they have existed, they have mutated, in fact and fiction, into second-order entities like genomic and electronic databases and the other denizens of the zone called cyberspace."¹ The cyborg is. Or as Katherine Hayles says, "We became post-human." As though saying it were enough to bring it into being, "in fact as in fiction."

If we can indeed hypothesize about the human future in this day and age, it is thanks to the existence of a milieu of exchange, of an interface for all the categories and actions that have been imagined up until now through a series of inevitable dichotomies framing the human experience. Such an interface allows us to imagine equivalences, translations, or trans-formations between the worlds, repertoires, and practices, which concretize the human experience. These transformations can be understood as "identity manipulation" or, alternately, as an evolutionary discontinuity for the human species. So, if the cyborg can (or will soon be able to) *be* "in fact as

in fiction” – which in the end rings of “on earth as in heaven” and calls for a serious amen – it is because there are passages between these worlds, repertoires, and practices, between various modalities that attempt to give a meaning to the human experience.

To us, all these passages lead to what we call the “metaphormatted human.” By this all too serious play-on-words, we mean at least three different things: (1) that today’s human beings are meta-formatted by a set of philosophical postulates, moral values, and inscription practices that frame the human evolution (both biological and cultural) with respect to technology; (2) that today’s human beings are potentially metamorphosed by a set of technological concepts, processes and incorporating interventions amounting to the concrete bootstrapping of the production of man by man (and the masculine is intentional here); and (3) that both these philosophical axiomatics and these technological fixes are heavily dependant on an engrained set of metaphors, catachreses and metonymies that actually enable and constrain the passages between both realms and, thus, artistic practices. One might actually claim that the production and the destruction of these tropes is what today’s art is about. Or, to put it in clearer terms, today’s metaphormatted human is the name of a fiction in the process of performing a new evolutionary discontinuity, whose writers (especially SF writers) and bio-artists are the midwives.

Here, we will endeavor to describe some of these passages in literature and bio-art, quickly defined as contemporary artistic interventions on the living—but of course no one actually knows what the living actually is anymore, and this definition is thus a preliminary definition only. Rather than appealing to an already too heavily connoted “cyborg experience”, we will concentrate on the metaphormating process, centered on a so-called nexus, the *Human Nexus*. Today’s human nexus is an experience: the experience of the human becoming, at the age of the bio-informatics convergence.

THE HUMAN NEXUS: CLOSE ENCOUNTERS OF THE FOURTH KIND

Are there people who are constituted in the overcoding empire, but constituted as necessarily excluded and decoded? Tökei’s answer is the *freed slaves*. It is they who have no place.
Gilles Deleuze and Felix Guattari, *A Thousand Plateaus*

For it seems that Global Capitalism has now entered its genetic phase, the phase of our encounters with machines of the fourth type. After the simple machines of the old societies of sovereignty, the motorized machines of the disciplinary societies, the information machines of the control societies, human beings now face – or will soon face – *genetic machines*.

In *A Thousand Plateaus*, Deleuze and Guattari (D+G hereafter) distinguished between machinic enslavement and social subjection: while the former happens when “human being themselves are constituent pieces of the machine that they compose among themselves and with other things (animal, tools), under the control and direction of higher unity,” the second occurs when “the higher unity constitutes the human being as a subject linked to an exterior object, which can be an animal, a tool, or even a machine.”²² The focus of this distinction is on the regulatory unit and its feedback on the human constituent/subject, i.e. on the nature of the “link.” The human being is an alienated slave to the machine when the regulatory unity of the machine maintains him or her in the state of a component, an expandable part of a higher unity; he or she is socially subjected to the machine when it reconfigures him or her as a subject. In this opposition lies the original alternative between “over coding of already coded flows” and “organizing conjunctions of decoded flows as such” that D+G attribute respectively to the imperial state/machine (first type) and the motorized machine of the modern nation/state (second type). Cybernetic machines, as machines of the third type, construct a generalized regime of subjection that aggregates machinic enslavement and social subjection as its extremes poles: they renegotiate the link between the abstract poles of the first two kinds of machines.

The latest episode in the modern civilization described by D+G is the cybernetic decyphering and organizing of the flows of human nature itself, DNA bases and bits, to the point that one now feels compelled to complete their enumeration, be it “an animal, a tool, a machine... or a human being”. What about these machine then, which reconfigure humans both as a subject and an “exterior object”? And which decoded flows are they trying to organize? D+G say that it is what cybernetic machines do, and they are right. But there are cybernetic machines and there are genetic machines. When the former regulate components as such without being able to actually build them, the later both regulate and build its components. The autopoietic machine, or second-order cybernetic machine is no mere motorized, regulated, or cybernetic machine. It is no mere computer. It is tomorrow’s bio-computer; *it’s an egg able to count*.

In the same way that the prototype of the cybernetic machine of the third type (James Watts’ *governor*) was born with the first fully functional motorized machine (the steam engine) genetic machines were born with the first fully functional computers, i.e. personal distributed computing machines. Genetic machines differ from computers as the governor differs from the steam engine: by one order of magnitude in a series of logical types. It is once the World was enfolded in a global network of personal (albeit “pumped-up”) computers, that the human being could be described as a genetic database. The decrypted genome is the equivalent of the meter kept in the museum, an *etalon*; both metal and silicon, dollars and gold, it is a new universal equivalent. Gene-banks are indeed the financial institutions of the machine/state of the fourth kind. A new subject, a new person, a new human being might emerge out of these biological and cultural transformations: *homo geneticus* is the way out of today’s human nexus. Nexus is the order of the day, and junk is its symptom.

In the *Merriam-Webster* on-line dictionary³, “nexus” has three inter-related meanings that date back in English to 1663: (1) connection, link; also: a causal link; (2) a connected group or series; and (3) center, focus. Its etymology is reported to the past participle of the Latin *nectere*, “to bind.” *The American Heritage® Dictionary of the English Language*, in its fourth edition (2000) gives the same three meanings⁴, but reports the Latin origin to the Indo-European root *ned-*, *to bind, tie*.⁵ Another dictionary, the online *Etymology Dictionary*⁶ gives the following etymology and history of the word *junk*: “worthless stuff,” 1338, *junke* “old cable or rope” (nautical), of uncertain origin, perhaps from O.Fr. *junc* “rush,” from L. *juncus* “rush, reed.” Nautical use extended to “old refuse from boats and ships” (1842), then to “old or discarded articles of any kind” (c.1880). The First Hypertext Edition of *The Dictionary of Phrase and Fable* by E. Cobham Brewer⁷ (from the new and enlarged edition of 1894) gives more details about the Latin root of the word: *juncus*, from *jungo*, to join: used for binding, making baskets, mats. Further philological inquiry also tells that the Latin *jungere* is not the ultimate root for *junk*; and that its etymology goes back even further to the proto-Indo-European root/stem: *yug-, meaning to bind, to harness.⁸ The same reference adds that “junk” is “another term from the cattle breeding lexicon of ancient Indo-Europeans. This word was used only for harnessing cattle into the yoke, so the very word ‘yoke’ is a clear derivative.

Junk and nexus thus come from related semantic fields stemming from two different Indo-European roots: yug- and ned-. They provide us with our two main archetypes of the machines of the first kind: the yoke and the knitter. Put together, these two archetypes organize the becoming of computing machines, through difference engines and Jacquard looms (second kind). At the time of the machine of the third kind and its correlated “societies of control,”⁹ two very influential science-fiction writers first understood, albeit in a very different fashion, the importance of the human nexus.

Alfred Elton van Vogt was a Canadian-born science fiction author, and one of its early pioneers. In December, 1939, he published his first SF story, entitled “Discord in Scarlet”, in John W. Campbell’s *Astounding Science Fiction*, the ultimate (maybe because it was the first) science-fiction serial of all time. “Discord in Scarlet” depicted a fierce, carnivorous alien stalking the crew of an exploration ship in outer space. In 1950, van Vogt incorporated the story into his novel *The Voyage of the Space Beagle*.¹⁰ The plot of the story, in its various versions, always revolves around a malevolent “close encounter of the third kind”. Its alien menace – Coeurl, a big, black, enigmatic catlike creature that consumes “id” and can teleport itself through space - was matched

against the human crew of the spaceship. The only thing that did not make it an unequal battle was the crew's use of a new science, called "Nexialism".

Van Vogt created a protagonist, Dr. Elliott Grosvenor (an implicit reference to the earliest cybernetic device, James Clerk Maxwell's regulator), who was the first graduate of "the Nexial Foundation." Trained in a kind of trans-disciplinary science, Grosvenor was able to see the connection between many aspects of a problem that other specialists could not see because of their disciplinary training. Van Vogt defined Nexialism as "the science of joining in an orderly fashion the knowledge of one field of learning with that of other fields. It provides techniques for speeding up the processes of absorbing knowledge and of using effectively what has been learned."¹¹

There is not much doubt that van Vogt coined the word "nexialism" on the sense of "connection", "link", of the word "nexus"¹², and its extensive treatment in Whitehead's philosophy. In fact, "nexialism" is van Vogt's fictitious rendering of two of his main influences: Korzybski's general semantics and Alfred North Whitehead's process philosophy. The two were linked historically, and Korzybski acknowledged his debt to Whitehead on the first page of his masterpiece, *Science and Sanity*, when he dedicated his system to the works of fifty-eight great authors, including Whitehead, "which have greatly influenced [his] inquiry."¹²

In *Process and Reality*, Whitehead makes of the nexus one of his central concepts, which, along with those of "actual entities" and "prehensions" describe the "ultimate facts of actual experience."¹³ When actual entities, also dubbed "actual occasions", "are the final real things of which the world is made of,"¹⁴ "prehensions" are relations among actual entities:

Actual entities involve each other by reason of their prehensions of each other. There are thus real individual facts of the togetherness of actual entities, which are real, individual, and particular, in the same sense in which actual entities and the prehensions are real, individual, and particular. Any such particular fact of togetherness among actual entities is called a "nexus" (plural form is written "nexûs").¹⁵

Van Vogt's fictitious rendering of Whitehead's philosophy thus proposes a characterization of a science of relations where relations (*prehensions*) are real entities, and no "mere" abstractions.¹⁶ In this sense, today's Nexus is the connected human, the link towards the post-human *nexor*, maker of links.

But there is yet another crucial characterization that stems directly from Ridley Scott's *Blade Runner* (1982), and one that was originally developed in Philip K. Dick's novel, *Do Androids Dream of Electric Sheep?* (1968). From the opening crawler of the movie, indeed, *replicants* (Scott's word for androids, Dick still calls them "andys" or even "skin jobs") are presented as "slave labor". Androids were then the ultimate representation of the artificial creature, the merging of cybernetic circuits and organic life in the still recognizable shape of a human being. As such, they carried the representations ascribed to machines since the dawn of the mechanical age, and, especially as "perfect" replacement of human labor. In fact, the name chosen by PKD to call the ultimate generation of androids, the "more human than human" *Nexus-6*, happens to be highly evocative of their function, but also, through its etymology, of yet another resonance.

Nexus, indeed, is not only a Whiteheadian concept borrowed by A. E. van Vogt. In Roman law before Justinian, a person called *nexus* or *addictus* was a quasi-slave. Nexus and *addictus* were not slaves, but were treated as such: they retained their personhood (when slaves are not persons: *servus non habet persona*). The Romans had no prisons for debtors, and the creditor was the debtor's jailer. A person was called *nexus* when he was bound to a creditor and has given himself (his body) as security for his loan. In case he could not pay his debt in time, he became *addictus*.¹⁷ *Nexus* and *addictus* were two legal variations on the specific kind of subhumans that Romans called slaves. Under such condition free persons could enter the realm of *Res Mancipi*, things that could be owned (and thus required *mancipation*): "land, houses, slaves and four-footed beasts of burden."¹⁸

There is not much doubt in our mind that the debt of today's human nexus is still the good old debt of the Fall, paid in both masculine and feminine biblical senses of *sorrow* (labor).¹⁹ But the question is raised: could this debt be paid off with the postmodern death of the Creditor, or could His absence merely mean the rise, in an inflationary spiral, of a new species (class?) of creditors?

FUTURE EVES: CAPITALIST (RE)GENESIS?

The non-correspondence of the physical and the intellectual made itself felt constantly, and in the proportions of a paradox. Her beauty, I assure you, was beyond reproach, defying the subtlest analysis. From the outside, and from the brow to the feet, a sort of Venus Anadyomene ; within, a personality absolutely *foreign* to this body. Imagine if you will, this abstraction brought to life : a bourgeois Goddess.

Villiers de l'Isle-Adam, *Future Eve* (1886)

We extracted a half of our title and our epigraph for this section from one of the leading modernist tales of the artificial creature, Villiers de L'Isle Adam's *Future Eve*. In doing so, we want to start with the female archetype of the android, the "artificial bride":

Artificial humans, or androids (from the Greek "anér", gen. "andrós", meaning person, man), have been part of European literature since the classical age (...) Traditionally, manufactured humans are either women or servants (...) There are thus two primary variations on the main theme: the artificial woman, or, more accurately, the artificial bride, and the artificial menials. In both cases, however, the creators of these androids as a rule are men, particularly artists, magicians or scientists, who, as figures of mastery, are experienced and adept in cultural practices.²⁰

We will come back to the artificial servant later. In the meantime, let us start with this artificial Eve. Villiers de l'Isle Adam's account is important because he anticipated a later trend of modernity. "Since our gods and hopes are only scientific now," he wrote, "why shouldn't our loves become scientific too? Instead of the forgotten legendary Eve, of the legend despised by Science, I offer you a scientific Eve—only worth, it seems to me, of these withered viscera that—from a remainder of sentimentalism of which you are the first to laugh—you still call "your hearts". (...) Chimera for chimera, sin for sin, smoke for smoke." His artificial Eve—named Hadaly for "Ideal"—is the quintessential *sexyborg*, as seen from the masculine trenches of the sex wars. "Electric Daughter" of the famous Edison, she is everything a man can desire, *plus* a female creature with no desire for men. It is Edison here, who plays the part of the Master, artist, magician and scientists, maker of links.

A feminist critique has recently rediscovered this: "In the age of information and biotechnological producibility, Hadaly appears to embody herself under new circumstances. [...] They are all in their own way 'sisters' of the "future Eve"—idealized 'surrogate women' who have what 'real' women do not have or promise to deliver, what 'real' women in the meantime refuse to." In this perspective, the trivial opposition between "real" and "artificial" begs the conclusion. The artificial, in Edison's words, was a "copy" that "will outlive the original and always look young and alive". Artificial flesh never ages... In late modern terms, this, of course, calls for a theory of the simulacrum. The future Eve is "nothing more than the copy of an image consisting of data records—and strictly speaking even an artificial figure in which the image of another artificial figure is brought back to life." Baudrillard's false/truer quote of the *Ecclesiastes* notwithstanding, we know now that the simulacrum is just an illusion, and that "in this sense, "future Eve" reanimates nothing more than an old image: Eva before or after the Fall of humanity. Although the biblical legend maintains that this Eve was the first "natural woman," we know very well that she is nothing more than a phantasm."²¹ Here the link takes the evasive form of the simulacrum, the nexus a relation between (false) copy and (true) original.

It is, of course, this kind of false dualism that we would like to dodge here, and stress instead the performativity of the simulacrum. Actually, it seems that Villiers de l'Isle Adam himself was aware of this... According to Remy de Gourmont, an old draft of *Future Eve* included the following notions about "the Real":

The Real has degrees of being. A thing is more or less real to us as it interests us more or less, since a thing that would not interest us at all would be as it did not exist—that is much less, albeit physical, than an unreal thing that would interest us. Thus the Real, for us, is only what touches us, senses or mind; and according to the degree of intensity which this unique *real*, that we can appreciate and name as such, impresses us, we classify in our mind the degree of being more less rich in contents that it seems to reach, and, that, consequently, it is legitimate to say that it *realizes*. The only control that we have over *reality*, it's the *idea*.²²

One first aspect of this performativity, of these degrees of being, is how *Future Eve* informs recent artworks, and in so doing continues to produce an "artificial" offspring. One such work is Javier Roca's *RE-constructing EVE*, an Extended Virtual Environment (EVE) commissioned for SIGGRAPH 99 Art Gallery (August 8-13, 1999). About his piece, Roca notes that

RE-constructing EVE begins as a concept: a futuristic re/presentation of an unchangeable biological structuring of the mechanical/digital body. It becomes a process: an internal deconstruction of ideals and re-definition of the Adam/male and Eve/female. It ends as result: a mechanical / digital painting where the brush strokes of the canvas have been substituted by pixels or polymorphous "bytes" of information. "RE-constructing EVE", a topographic evocation of genetic engineering is ultimately a transitional work, an invitation to explore the "multiplicity" and the complex relation between organism and machine, and hopefully, as in Villier's narrative text, reflects in this case a bridge between the twentieth century and the twenty-first century.²³

Re-Constructing EVE, however, still works on a representational mode: it is, according to Roca, "a "blue print," an "assemblage" of symbolic materials, interactions and historical anatomies of possible bodies." Less symbolic however, is the notion that there is already, one new Eve, and that, as Villiers de l'Isle Adam had prophesied, it was provided by Science. Such is the premise of the Critical Art Ensemble's *Cult of the New Eve* (CONE):

The Human Genome Project has one last Eve for science to offer us. She is the one who will help the public understand the beginning of a second genesis—one that is not beholden to any reproductive boundaries that once separated the species—and to understand it as a good thing. She is Eve without the fall—an Eve of perpetual grace, but most amusingly, she is a random Eve. The mythology of this Eve goes as follows, although the narrative tended to vary slightly with each scientist CAE interviewed: When the Human Genome Project (HGP) began its mission of mapping and sequencing the entire human genome, it needed DNA in order to start. Since HGP was an academic/government initiative, ethics committees were established to make sure that this genetic investigation did not go into territories best left unexplored. One of the concerns among all the participants was to insure that those who donated blood to the project would do so anonymously, so their identities would be protected from the media and various objectors to the project who might harass willing participants. A review board with strict procedures was set up to insure the privacy of blood donors. However, after the first donor was approved, no other donors were needed. The DNA of the first approved volunteer was mass produced (copied) as needed. Why go to the trouble and expense of having any more? After all, one donor is sufficient for the project's needs. What is known about this donor is that she is a woman from Buffalo, New York. She is the Eve of the second genesis. It will be a curious sight to see if she, too, is labeled by science with the sign of origination.²⁴

A rhetorical project that has given way to several performances in key nodes of the electronic art world (e.g. Karlsruhe ZKM) or other venues (e.g. the streets of Brussels) since the year 2000, CONE is above all a discursive

construction: in the classic vein of one of the most outspoken artistic collective worried about the new wonders of biotechnologies, CONE is a parody of a religious capitalist ritual enacted for various audiences. It translates critically most of Villier's insights and rephrase them in catchy aphorisms such "We can make Eden. Paradise now!" or "the New Eve is our own. She is global". CONE—as in Devo's headish fetish?—remains, however, a rhetorical project and should be stressed only as a backbone to CAE other interventions; as such it does not include a bioartistic practice, only a clever discursive production (and CAE now knows, to its own demise, the difference between discursive production and bioartistic practice: in America-under-the-Patriot-Act, the second can lead you to jail. Shame!). Closer to our interest here, we shall now focus on two early bio-artistic projects where we could find the *Future Eve* genealogy present, albeit in a distorted way.

The first of these projects, Joe Davis's *Microvenus* (1996), is arguably one, if not the first, bioartistic piece. Carried out with the technical help of molecular geneticist Dana Boyd at Jon Beckwith's laboratory at Harvard Medical School and at Hatch Echol's laboratory at University of California, Berkeley, the piece consisted in the encoding of an icon in the DNA molecule of a bacteria. The title of the piece came from the specific icon that Davis chose to encode in the DNA of the bacterium, an ancient Germanic rune shaped in the resemblance of the female genitalia. Davis contends that "the graphic "Venus" icon drafted for the *Microvenus* project was inspired by some of the oldest messages *Homo sapiens* have left for themselves (i.e., ten- to fifty-thousand-year-old "Venus figurines") and partly by episodes of censorship that are now historically associated with "scientific" attempts to create messages for extraterrestrial intelligence."²⁵

About this piece, Adam Zaretsky has recently noted that,

These sequences were chosen by Davis to exemplify a certain aesthetic and that his aesthetic is not expressed visibly by the organisms in question. Instead, the message is genomically embedded poetic license, without gene function and presumably without any organismic effect (...) These strains of bacteria carry multi-generational molecular inscriptions somewhat permanently. In this incarnation, the organisms are artistic vessels. At the molecular scale, structural change of DNA sequences have real differences in shape but the difference can only be "seen" through processes of technological sleuthing (I.e. DNA Isolation, PCR, Use of Restriction Enzymes and Gel Electrophoresis). Joe Davis' designer bacteria look more or less morphologically "normal" through a microscope but they carry a message, which has the potential to outlive the human race or live among us (even inside of us) ubiquitously, without a trace.²⁶

Of Villiers de l'Isle Adam's original project remains the idea that the "copy"—here in the renewed meaning of the palimpsest of Life—might outlive the human original, and that the new Eve (or one of his alter-egos here, i.e. Venus) is the meaningful message of an obsolete humanity.²⁷ Quite paradoxically, Davis's encoded icon is actually invisible and even more importantly, without (direct) phenotypical effect on the bacteria that "carries" it: it is in other words, junk DNA (more on that later). In some ways, the icon is an invisible message, the invisible message of a New Genesis, and the link moves from the realm of the visible to the realm of the readable.

This idea of a new Genesis is also developed in the piece of another bioart pioneer—transgenic art in his own words—, in Eduardo Kac's piece aptly named... *Genesis* (1999). Commissioned by *Ars Electronica* and presented online and at the O.K. Center for Contemporary Art, Linz, Austria, from September 4 to 19, 1999, this transgenic artwork consists of yet another inscription in bacterial DNA, what Kac calls an "artist's gene." Kac created this synthetic gene (in fact he commissioned it to scientists who actually created it) by "translating a sentence from the biblical book of Genesis into Morse Code, and converting the Morse Code into DNA base pairs according to a conversion principle specially developed by the artist for this work."²⁸ The sentence reads: "Let man have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moves upon the earth" (Gen. 1:28). Again, we will come back later to the question of this dominion, or, better said, of this burden.

Kac designed the piece so that “participants on the Web could turn on an ultraviolet light in the gallery, causing real, biological mutations in the bacteria. This changed the biblical sentence in the bacteria. The ability to change the sentence is a symbolic gesture: it means that we do not accept its meaning in the form we inherited it, and that new meanings emerge as we seek to change it.”²⁹ He insisted that he had chosen Morse code because, “as the first example of the use of radiotelegraphy, it represents the dawn of the information age—the genesis of global communication.”³⁰ He could also have added that he was true to one of the original insights at the origins of molecular biology, that of Erwin Schrödinger who first intuited that “the chromosome contains in some kind of code-script the entire pattern of the individual’s future development and of its functioning in the mature state.”³¹

So in this piece at least, it is obvious that the new or second Genesis is (also) the genesis of a new age, i.e. of the new kind of capitalism that we have dubbed, after D+G, *capitalism of the fourth kind*. Under this renewed reign of the *Nexum*, artists still have to demonstrate how they can escape the rigors of what the theoreticians of the Frankfurt school had called “integration” and that we can now more aptly call *recycling*. From the days of the latest short-lived revolution—the beautiful Spring of 1968, capitalism has shown without mercy that it can, indeed, recycle its fiercest critics, to the point that *The Commentaries on The Society of the Spectacle* now appears to be the new bible of the communication VP and other advertising agencies executives.³²

As D+G say, *the link has become personal*. To go one step further, will the human person become a link, essentially *junk*? Will the evolutionary destiny of the human being boil down to the slave-subject-user-product sequence? Recall Philip K. Dick’s premonition, relayed by William S. Burroughs and Ridley Scott in the composite work, book/film *Blade Runner*, an introduction to the capitalism of the fourth kind... Remember the character of the geneticist, Isidore/Sebastien, whose motto is “I make friends”... Remember the response of his creature, the android-replicant, Rach(a)el: “I am not in the business; I am the business...” If Deckard and Rachael are the new Adam and Eve of the re-genesis of capitalism, could it be that only *junk* could slow their fall? Do Davis and Kac’s artist genes qualify?

VIRAL ONTOLOGY: LOVE THY VIRUSES LIKE THYSELF

Postmodernity (human, all too human) spreads the virus of voluntary servitude, an “ecological micro-servitude, which is everywhere the successor to totalitarian oppression” (and how green were those nazi valleys). There is only contagion of technics and the freedom of becoming imperceptible, invisible, and ignoble (learn to growl, burrow, and distort yourself).
Keith Ansell Pearson, *Viroid Life*

When Davis and Kac created so called “artist genes” and encoded them into the DNA of another life-form (be it a bacteria, a plant or an animal), they apparently did very different things. Indeed, they used the same technique (recombinant DNA). They both create an intermediary, a vector that molecular biologists call a “plasmid”: a circular double-stranded DNA molecule (separate from the chromosomal DNA) capable of autonomous replication.³³ In both cases, these plasmids encoded a meaningful message for the human experimenter/artist: a sentence of the Bible or a German rune. But their works seem to vary tremendously according to the point of insertion of their vectors.

Davis chose to insert his vector to no phenotypical effect, and, in fact, introduced more junk into the host DNA. By an ironic twist, the “meaningful message” that he wanted to introduce actually amounts to more junk for the host. In other words, since this encoding does not alter the functioning of the coding DNA that it transforms, the introduction does not result in a different protein synthesis but rather piles up with the non-coding DNA of the host, i.e. its *junk DNA*. Materially speaking, the host is not altered, and this why Zaretsky speaks of an “invisible” aesthetics. *Readable, but not visible; significant junk.*

Kac, on the other hand, chose to insert his “artist gene” into the coding part of the DNA. In another of his pieces, entitled *Move 36*, he coupled his artist gene (in this case the Cartesian *cogito*) with a functional gene, i.e. a gene with a phenotypical effect:

“Move 36” makes reference to the dramatic move made by the computer called Deep Blue against chess world champion Gary Kasparov in 1997. (...) The installation presents a chessboard made of earth (dark squares) and white sand (light squares) in the middle of the room. There are no chess pieces on the board. Positioned exactly where Deep Blue made its Move 36 is a plant whose genome incorporates a new gene that I created specifically for this work. The gene uses ASCII (...) to translate Descartes’s statement: “Cogito ergo sum” (I think therefore I am) into the four bases of genetics. Through genetic modification, the leaves of the plants curl. In the wild these leaves would be flat. The “Cartesian gene” was coupled with a gene that causes this sculptural mutation in the plant, so that the public can see with the naked eye that the “Cartesian gene” is expressed precisely where the curls develop and twist.³⁴

In his piece entitled *Genesis*, he took yet another strategy: he enabled the on-line visitors to the installation to voluntarily mutate the trans-coded bacteria with an interactive interface that activated an ultraviolet light. And Adam Zaretsky seems to aptly conclude:

Instead of emphasizing a permanent, hereditary thumbprint, a sort of “artist was here” designer organism, *Genesis* emphasized the continued evolution of transgenic living organisms beyond the intentionality of the artist’s hands. Though the emphasis on codex and genetic code have their similarities with previous transgenic works, Eduardo Kac inserts not a mythic signature of genetic graffiti alone, but a living text which is subject to environmental degradation, popular mangling, multiple re-readings and continued mutant alterity.³⁵

Note however, that the only way for Kac to produce (i.e. to master) a visible effect is (1) in the case of *Move 36*, by coupling his artist gene to a “ready-made gene”, one that is known to be functional, and (2) in the case of *Genesis*, to use a mutagenic agent (i.e. UV light). Thus, in themselves, his “artist genes” do not differ essentially from those crafted by Davis. They too are meaningful junk. Again, on an interesting new twist on the history of art, the visible has given way to the readable, and in both cases, the aesthetic posture requires the explanatory discourse of the artists. The real cyborg, the artificial creature, is, in both cases invisible to the piece’s audience: it is the plasmid, this virus-like entity, which is the true creation.

The status of the virus vis-à-vis the living is still problematic today. As one of us write these lines, the December 2004 edition of *Scientific American* stands out amidst the jumble in his office, with this simple question on its cover: “Are viruses alive?” On page 105, the monthly publication reproduces a 1962 statement by the French laureate of the Nobel Prize in medicine, André Lwoff: “Whether virus ought to be considered as organism or not is a matter of taste.” So little has changed since the 1960s regarding this question; however, a profound change in perspective has taken place. While humankind was starting to experience its first alleged retroviral pandemic (AIDS), the virus became the site of a fundamental scientific controversy: parasite or symbiont (or, alternatively, both)?³⁶

In fact, a recent Deleuzian bio-philosophical exegesis has led to the “depathologization of the virus” (Hansen) or, even more, to its redefinition as a *driver of evolution*, by genome or partial-genome fusion-acquisition (Ansell-Pearson, Parisi, Thacker). Actually, scientists themselves have already made this point. During the unveiling of the first draft of the human genome in 2001, David Baltimore, for instance, qualified the genome as “a sea of reverse-transcribed DNA, with a small admixture of genes.”³⁷ If Bruno Latour once described the biochemist the “last of the rogue capitalists,”³⁸ one must see in the virus, often the “object” or “tool” of the biochemist’s studies, the first of the genetic capitalists, and in the genomic viral fusion-acquisition, the essential principle of genetic capitalism, this fourth phase of creative destruction (according to Schumpeter’s expression).

Some of the most valuable insights of Deleuze's biophilosophy need to be worked out against the state of current advances in biology. Such is his notion of coding, and most importantly, of "surplus value of code."³⁹ How to update such a notion, not following the outdated "modern theory of mutation" that first served D+G so well, nor only according to Margulis's notion of endo-symbiosis (as Ansell Pearson and Parisi have done), but also in the light of recent studies of transposons (i.e. "jumping genes, an essential part of so-called "junk DNA")? What if D+G's notion of "code" encompassed more than the "mere" genetic code? How to make sure that in our effort to question the paradigmatic notion of code still hegemonic in biological discourses, we do not bring in our critical baggage the unquestioned scientific assumptions that make paradigms last?⁴⁰

ORGANS WITHOUT BODIES: SPARE PARTS FOR THE MACHINE OF THE FOURTH KIND?

To deal with the possibility of cultures dying out, Hascombe started a central storehouse, where duplicates of every strain were kept, and it was this repository of the national tissues, which had attracted my attention at the back of the laboratory. No such collection had ever existed before, he assured me. Not a necropolis, but a histopolis, if I may coin a word: not a cemetery, but a place of eternal growth.

Julian Huxley, *The Tissue Culture King*⁴¹

So far, we have encountered one strategy to answer this question: focus on the smallest common denominator to qualify the human nexus as a machinic becoming, i.e. the virus. Reduced to its smallest living/non-living components, the virus, individuated code in swarms, multitude of them, in symbiotic, parasitic and/or genetic associations. Life appears eventually as always-already-a-Nexus. And the question of the human becoming becomes itself the site of recombinant practices which might of course displace a few frontiers (visible/readable, for instance) but which also work according to the same logic that already was: the connective logic of Life as a form of association. That, in the process, the symbolic turns to junk and junk to a site of potential redemption (the fall eventually leads to the gutter, right?) should not come as a surprise... That, in the process, the meaningful turns into the invisible (and *vice versa*), should not be either... Remember, Life from the start was recast as Nexus, both relation and exploitation, as in a twisted master-and-slave dialectic: Carbon and Silicon, Adam and Eve, Dekard and Rachel, Edison and Halaly. Who's the slave, Where is the Master? *WHO'S IN CHARGE?*

But before we come back to this most troubling question, let us see yet another strategy employed to come to terms with it: instead of descending the phylogenic ladder (from Human to Eukaryotes and down to Prokaryotes and else, bacteria and viruses), let us move backwards on the ontogenic staircase, from the body to its organs, from the Body without Organs (BwO) to the Organs without Body (OwB), its obverse. These two strategies somehow converge, or better said are two modalities of the same phenomenon, according to the old (but basically wrong) law of biology that holds that *ontogeny recapitulates phylogeny* (one climbs the ladder in order to descend the stairway, or *vice versa*). In this perspective, Slavoj Žižek is right to write that there is "a trend" in today's science and technology that both makes emerge a "body in pieces" and culminates in the biogenetics notion that "the true center of the living body is not his soul but its genetic algorithm."⁴² Unsurprisingly, to shift from one modality to the other is also a passage that current bio-artistic practices have taken.

Here, we will refer specifically to the work of the *Tissue Culture and Art Project* (TC&A hereafter), alone or in association with Stelarc. Oron Catts and Ionat Zurr, the two artists members of TC&A consider that their work, involving "the manipulation of living tissues outside and independent to the organism they were derived from", provides an alternative to the kind of manipulations practiced currently in molecular biology protocols. They insist: "artists dealing with genetics consider the genetic code in a similar way to the digital code. As a result the manipulation of life becomes 'manipulation of a code'." That is why, if their art belongs to contemporary bio-art as we defined it, cannot be included in the less general category of "transgenic art" (as in the work of Davis and Kac previously discussed). They add that the epistemological and ethical questions raised by their

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artistic interventions are not addressed by existing discourse, because “the manipulation of tissues is visceral.”⁴³

Indeed their work involves the production (culture) of tissues or neo-organs, and they agree that “it is about producing body spare parts.”⁴⁴ Trained in both arts and sciences necessary to their practice, they do not ignore the philosophical references that made us consider these spare parts as necessary components for the machine of the fourth kind.⁴⁵ And accordingly they wonder about the ethical and political consequences with these spare parts, in which they see an instance of what they call “the Semi-Living” or “Partial Life”:

Working with the Semi-Living and Partial Life, we are confronted with the question; are we creating another form of life for exploitation? (...) in the long term, they [the semi-living and partial life entities] confront the viewer with the realization that life is a continuum of the different metabolizing beings and in the transition from life to death, and from the living to the non-living. Their existence contradicts the conventional dichotomies that govern traditional and current Western ethical systems.⁴⁶

Indeed, they come very close to an anthropomorphized version of the machine of the fourth kind, i.e. a machine whose nexus would still be human. In order to that, they have to entertain the (paradoxical?) idea that the body can be extended and eventually encompass the whole living world:

In the context of our work, once a fragment is taken from A BODY it becomes a part of THE BODY. The living fragment becomes part of a higher order that engulf all living tissues, regardless of their current site. We see it as a symbolic device that enhances the bond humans share with all living beings. The semi-living are fragments of The BODY nurtured in surrogate body—a techno-scientific one. The laboratory is part of the extended body, but the care can only be performed by a fellow living being—us, the artists.⁴⁷

We shall get back to the full extent of the consequences of this posture when we shall return to the golem. But in the meantime, let us remember that it is quite a contemporary posture, that of *hylozoism*:

Everything that exists, the whole of Nature is alive—it suffers and enjoys. There is no death in this universe; what happens in the case of “death” is just that particular coordination of living elements disintegrates, whereas Life goes on, both the Life of the Whole and the life of the elementary constituents of reality (...) We find this position from Aristotle (his notion of soul as the One-form of the body) (...) up to the whole panoply of today’s theories, form the notion of Gaia (Earth as a living organism) to Deleuze, the last great philosopher of the One, the “body without organs” that thrives in the multitude of its modalities.⁴⁸

“The bond that human share with all living beings” is TC&A’s version of the Nexus. It is both the axiom and the result of their strategy involving “the phylogenetic staircase,” our second characterization of contemporary bio-artistic practices of the Human Nexus. But in their case, one more degree of complexity arises from the fact that the Nexus is distributed across an interface that is also part of it: *Nexus square, if you will*. The nexus as process is indeed squared when it is both the matrix (the artificial womb) and the form of life that grows in it.

The embodiment of the human becoming by bio-artistic discourses and experimentations instigates a new conception of the human body that participates in its dis/re-embodiment. This notion is central to our understanding of bio-art: along with discourses, bio-artists engage in a global reflection that participates in human culture which might also be anchored into the biological dogma. Simultaneously, artists experiment with living systems, tissues or nucleic acids, and begin to challenge their given uses, purposes and meanings. Bio-artists thus create pieces that link computational systems (hard and software) and organic matter (wetware), sometimes creating hybrids or chimeras, monstrous or invisible (albeit readable) effects, all belonging to what we shall call *junkware*.⁴⁹ In so doing, they participate in the production of a body that is, both, in fact, a new body and a reconfiguration of the original (“natural”) body. Thus, articulating (discursively and experimentally)

the body in its singular artificial organs – and we are going to concentrate here on the artificial womb- is simultaneously participating in its disarticulation -or dislocation- with the natural body and initiating a reflection on its potential re-configurations.

For some, the artificial womb (AW hereafter) might be a mere fantasy, a dream or a nightmare straight from the science fiction imaginary. However, we shall rather focus here on the scientific elaboration developed by the biologist and M. D. Henri Atlan in his book entitled *L'utérus artificiel*, published in March 2005. As the first scientific book ever written on the artificial externalization of the reproductive organs, Atlan draws a complex network of relations to qualify this “monstrous” production, even if he dates the emergence of the artificial womb with Adlous Huxley’s *Brave New World*. Nonetheless, Atlan’s AW differs from Huxley’s fiction in the very fact that it avoids the despotic control and concentrates on the technical feasibility of the AW entangled with its cultural trans-formations. Again, the issue at stake here is not control (and even less discipline).

According to Atlan, the feasibility of the AW requires the reproduction of the membranes and exchange mechanisms -placenta, amniotic liquid, membranes and internal walls- that enable the natural growing mechanisms of the embryo.⁵⁰ Currently, in vitro fertilization allows the artificial embryo’s growth until its blastocyst phase –during its first five days of life. The crucial moment arises at the sixth day when the embryo starts to create its own life *milieu* by initiating its nidation and individuation processes. This stage has not yet been accomplished artificially due to the extreme difficulty of reproducing a viable placenta. However, at the 24th week, the “body” in gestation becomes a viable fetus, and its development can again be ensured in an “extra-corporeal” environment. The possibility of an *in extenso* extra-corporeal gestation would require the development of a full AW allowing gestation during the missing part between today’s in vitro techniques and incubators, between the six day and the twenty-fourth week of the intra-uterine life of the embryo. Atlan argues that this will be a reality in about 50 to 100 years.⁵¹

Atlan describes the AW as an artifact: a manufactured object obtained by hijacking the laws of life.⁵² However, for us, the AW overflows this notion: we conceive of it in its germinal operation, i.e. simultaneously in its discursive creation and technical extrapolation. Its actualisation does not alone emerge from the simple production of technical artefacts. As a matter of fact, the experimental techniques involved in the emergence of the AW infrastructure interacts with contemporary bioethics discourses and engage both the configuration and re-configuration of the generative format of the artefact. Hence, experimentation creates the format but is also formatted in return by the tropes of these discourses in what we have called the metaphormating process. This discourse-experimentation creates a conjunction, an interface, and draws an art-ificial life equation: a culture that becomes natural conflated with a nature that becomes cultural according to an artificial operation.

Here again bio-artists provide a term of passage. The Tissue & Culture Art(ificial) Womb project, for instance, concentrate on the utilisation of bioreactors and ought to be perceived as a current model for the Artificial Womb, and the initiator of the deployment of its corporealization. In doing so, they give or/and create meaning from which emerge a new contextualization of the ongoing science of the AW. Thus, for us, bio-artists become designers of the artificial womb, in the form of the bioreactor, an experimental system emulating the conditions of the natural body (37°C, 5% CO₂). As Catts and Zurr argue, the bioreactor is characterized by the same functions as the uterus: “conceptually, a bioreactor (in conjunction with the semi-living sculptures growing inside it) represents an artificial ‘life giving’ and maintaining force.”⁵³

As a co-constructed artifact (discursive, scientific and artistic), the AW come along in a threefold way: (1) in the abstract process of the artificial reproduction of a natural model; (2) in the concrete albeit discursive process of the actualization of its alleged ethical consequences, and (3) in the concrete process of the bio-artistic experimentation on the bioreactor which actually bridges the two previous processes. The bioreactor architecture initiates a corporeal disruption between the inside and the outside, and reveals a higher power of the Nexus, on both sides of the interface that it artificially creates: organ and matrix, world and human, mother and son, Father and son, one Nexus (talk about panpsychism!).

BRAVE NEW GOLEM: OVERMAN, REDUX

With him He began, with him He concluded, as it is written [Psalm 139:5]: thou hast formed me before and behind.

Midrash Abkir

We have left waiting the figure of the servant, this second image of the android. It is now time for him to come back (with a vengeance). But behind the servant android lures the Golem of legend, and that, we feel, is dead end, because, again, IT IS NOT ABOUT CONTROL, today's Nexus is beyond control. Or more exactly, one has to realize that the servant Golem is but one side of the Golem, its emanation on only one plane of his two constitutive planes:

The Golem has always existed on two quite separate planes. The one was the plane of ecstatic experience where the figure of clay, infused with all those radiations of the human mind, which are the combinations of the alphabet, became alive for the fleeting moment of ecstasy, but not beyond it. The other was the legendary plane where Jewish folk tradition, having heard of the Kabbalistic speculations on the spiritual plane, translated them into down-to-earth tales and traditions (...) The Golem, instead of being a spiritual experience of man, became a technical servant of man's needs, controlled by him in an uneasy and precarious equilibrium.⁵⁴

It is to this second plane of the ecstatic experience that we would like to draw your attention now. Sonya Rapoport, in her redemption of Eduardo Kac's *Genesis* gene, has caught a glimpse of this plane. Her web work entitled "Redeeming the Gene, Molding the Golem, Folding the Protein,"⁵⁵ is a mythic parody that challenges Kac's work with the creation of a golem, brought to life according to the Jewish esoteric practices of Kabbalah. According to Rapoport, Kac's artist gene needs redemption because of the way it was produced, or more accurately because of the languages (codes) of his making: Kac is guilty of having used the King James translation of the Bible (rather than the Hebrew text of the Torah) and Morse's code (and Morse was pro-slavery). At the opposite, her golem is a positive force, brought to life by two women (Eve, of course, and her Gnostic alter-ego, Lilith, "who irritated the Lord of Creation by demanding equal rights" (Scholem)). In the end, Kac is redeemed, and in one of the last screens, his face replaced with that of Adam Kadmon, the Primordial Man of Lurianic Kabbalah. For, you see, for Luria, Adam was twice a golem: He was first a gigantic golem (*Adam Kadmon*) and second an ordinary golem (*Adam Rishon*):

Man, as he was before his fall, is conceived as a cosmic being which contains the whole world in itself and whose station is superior even to that of Metatron, the first of the angels. *Adam Ha-Rishon*, the Adam of the Bible, corresponds on the anthropological plane to *Adam Kadmon*, the ontological primary man. Evidently the human and the mystical man are closely related to each other; their structure is the same, and to use Vital's own word, the one is the clothing and the veil of the other. Here we have also the explanation of the connection between man's fall and the cosmic process, between morality and physics. Since Adam was truly, and not metaphorically, all-embracing, his fall was bound likewise to drag down and affect everything, not merely metaphorically but really. The drama of *Adam Kadmon* on the theosophical plan is repeated, and paralleled by that of *Adam Rishon*.⁵⁶

By her use of the Lurianic Kabbalah (for some other choices were indeed possible), Rapoport reinforces the Gnostic emphasis of her piece, but she also gives us a very contemporary key to unlock the Nexus. *Today's Human Nexus, and his associated Second Genesis, is the Eternal Return of the Primordial Man*. As in the first time around, the question raised is that of his freedom.

For twenty years at least, we have heard about nanomachines, artificial intelligences, artificial forms of life. For over twenty years now some human beings have been busy building them. In the past fifty years we have described the structure of DNA, and decoded the genome base by base. Human beings, flies, mice and some

worms are now officially data-based.⁵⁷

Here is our question: What becomes of ethics – if, as Foucault had it, ethics is the reflected practice of freedom – when we have already left behind the era of mass-production of cadavers declared by Heidegger, and entered the era of mass-production of genetic *goylemes*? First steps, baby-steps in the slow process of commodification of Man™...

The process of genetically modifying an human being and growing it out of “enriched” stem cells will, in all likelihood, be developed to scientific success in the next twenty-five years or so, what we used to call a generation. Some groups, sects or laboratories have already started talking about their attempts to clone a whole human being. A guy alone in his silicone garage has effectively done some species changing genetic manipulations (on Mandeville’s bees). The French parliament has already invented the legal notion of a crime against the species, super-seeding the crime against humanity, and therefore acknowledging that the crime has already began. By the time that my son (or your daughter or their sons and daughters it doesn’t matter) will take to reach their reproductive potential, there might be machines to produce super babies (and, no doubt, under-babies). In the meantime, our kids will play with their brand-new DNA sequencers for children under 10 years old. *So, what do you think about freedom now?*

With Slavoj Žižek, we agree only on this, no hyphen-ethics, just ethics. There is no biogenetic ethical question *per se*: the ethical question remains the same albeit in new – and potentially extremely crucial – modalities. So today’s question is still *what do you do with your freedom?* And Žižek is right indeed in raising the question of its modality: *how do these new conditions compel us to transform and reinvent the very notions of freedom, autonomy, and ethical responsibility?*⁵⁸ The rest of Žižek’s development, posturing so-called Catholic counterarguments to better dispel them, we are sorry to say, however, is just good for scrap: it leads unfortunately, through psycho-analysis, to the revelation that we were never free in the first place. Either Žižek has not heard of the fall or he is quite happy to make it last. Indeed he must be when he proposes to finish the Enlightenment project (his capitals) and “follow the logic of science to the end,” “waging that a new figure of freedom will emerge.”⁵⁹

Reading these lines, I was reminded of the end of the Appendix to *Foucault*, where Deleuze too makes the wager of “the advent of a new form,” in relation to the same new modalities: the *overman*, neither human nor God, “which it is hoped, will not prove worse than its previous two forms.”⁶⁰ There is hope in the overhuman, this form that stems from a new play of forces located outside of the human, in the revenge of silicon over carbon, of the genetic components over the organism, of the agrammaticalities over the signifier (*ibid.*). Outside of the human?

In which ways did silicon supersede carbon? How did the genetic components supersede the organism? On their own? Did the sands suddenly express a new life-force? No no no: man is still in charge, and overman is the compound form of forces in man with these new forces. Overman is the man *taking charge* of the animals, of the rocks (the inorganic life of silicon), of the being of language. Deleuze wrote, following Rimbaud, “man who is even in charge of the animals (a code that can capture fragments from other codes. [...]). [*l’homme chargé des animaux même (un code qui peut capturer d’autres codes.)*]»⁶¹

Keith Ansell Pearson is right to point back to the magnificent formula of *Anti-Oedipus*, “man as the being who is in intimate contact with the profound life of all forms and all types of beings, who is responsible for even the stars and animal life (...) the eternal custodian of the machines of the universe.”⁶² But he follows the original English translation of “*chargé*” by “responsible.” In *Anti-Oedipus* too, however, Deleuze and Guattari wrote “*chargé*” as if something or somebody (God, this previous form?) had loaded the human being with the stars and the animals⁶³, had put man in charge of the machines of the universe as a “custodian” (*un préposé*). Man is held responsible for the earth, like a *pré-posé*, with the machines of the universe in his custody, a kind of super-Noah (or a free-floating ass).

All here is in the passive form, cryptic allusion to the rainbow of the covenant: “this is the token of the covenant which I make between Me and you and every living creature that is with you for perpetual generations: I have set my Bow in the cloud, and it shall be a token of a covenant between me and the earth” (Gen. 9: 12-13). Note this: the covenant is with the earth, and all that is made of it, the living creatures, and man is its custodian, not for all eternity (as Deleuze and Guattari have it), but for *perpetuity*.⁶⁴

Note also that in this version of the story, man was never in charge of the rocks and stars, but only of what he gave name to (Gen. 2: 19), of what was “delivered into his hands,” more bluntly, of what he can eat (Gen. 9: 2-3). Deleuze and Guattari thus extrapolated the original story, giving charge to man of all the rocks and stars, whose sole custody was that of the angels, so far. No more need for Angels, man has become a star-eater, “has plugged an organ-machine into an energy machine, a tree into his body, a breast into his mouth, the sun into his asshole.”⁶⁵

In other words: when did man develop an appetite for the inorganic? When did man start consuming matter as such, not only living matter (albeit deprived of its running blood)? When did man start to watch over the celestial spheres? Forget about the “start”, the origin, and let me rephrase the question in a better Deleuzian fashion: what about the starworm-becoming of man? Do you need to be schizophrenic to know the starworm in you? Do you feel the sunshine in your ass-hole?⁶⁶

What do *you* think that you are made of, anyways? Water, earth, wind and fire? Stuff dreams are made of? Carbon, Oxygen, Hydrogen, Nitrogen, salts and metals? Star dust? From the biotic soup of a preindividual magma, indifferentiated and monophased? The genes of your ancestors plus chance? *Hasard et nécessité*? Many voices talking in your head?

Are these mutually exclusive options? May we risk a synthesis?

Overman [transhuman, extropian, cyborg, ribopunk, name your brand]: custodian of the machines of the four kinds, hybrid carbon/silicon form of life of the future, organizing flawlessly the *conjunktions* of decoded singularities (Deleuze and Guattari), group individual twice dephased and open to the multitudes of his *milieu* (Simondon). Overman, master of DNA, breeder of men (Sloterdijk, after Nietzsche and Heidegger). Overman, the next phase of the becoming-starworm of man. Overman, the next proper name of the autogeddon, equipped with the best logic science can provide. To the end! Let's get into abstract sex,⁶⁷ let's go capture other codes... Let there be monsters and chimeras, parthenogenetic babies and clones... Let the better over(wo)man win!

CONCLUSION: HARDWARE, SOFTWARE, WETWARE AND JUNKWARE

Again, if we had to pick a model for the human becoming, we would pick the eternal return. Today's Eve looks and feel like our ancestor, after all, and the new Adam is but another All-embracing Golem of this day and age.

We are allegedly now on the threshold of the time of shape-shifters, when the human species is supposed to enter the phase of the production of its own metamorphosis. Our cultural background is littered with promises and prophecies, and the stakes are high for whom to speak the louder, for whom to capture the best the gloom and doom, or alternatively, the hopes and dreams, of a humanity left shaking by the twentieth century. Those, who, today, try to make us believe that they will soon be able to synthesize a whole human being from a bunch of chemicals plus information, agree in principle with those who ban reproductive cloning and make it “a crime against the species.” *None doubt the scientific premises of the whole issue.* All feel that preventing or aiming at the cloning of an individual considered genetically identical to another human being will not hinder, but rather will facilitate the cloning of parts, sequences, cells or organs of human beings. On one side, the ban of reproductive cloning provides the moral grounds that reassure the masses about the seriousness and integrity of those in

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charge, while on the other hand, the cultural folklore about human clones reinforces the feeling that we are—or soon will be—able to do it.⁶⁸ In both cases, the agenda for the progressive commodification of human synthetic matter is further advanced and the reign of the living money made nearer.

In the West, we are sold everyday the promises of a better health thanks to biotechnological fixes, at the exact same time that we witness the slow crumbling of the Welfare State, and most of all of its promises for universal health care. In fact we slowly enter the era of the mass production of undead beings, partial life, zombies and other *goleymes*. The mass production of cadavers, to quote Heidegger, an expert in this notion, is slowly but surely being replaced by the mass production of undead beings. By this we mean more than a horror/science fiction trope of rhetorical power over the imagination, but quite literally the production of living entities from human origins, but with the legal and cultural status of dead matter. Sequence, genes, cells, and organs are the new commodities, the bright future for the extension of the Market. If today's global economy is under the spell of "One Market Under God" (Thomas Frank), genes sequences and other living codes will be its junk bonds, objects of the new risky and high reward market of a new form of capitalism, that we dubbed capitalism of the fourth kind.

For this bright future of a capitalism of the fourth kind to live up to its alleged potential, it is necessary that the standard model of molecular biology, centered on Crick's central dogma and the ubiquitous cybernetic metaphor of a world made of information, holds. One MUST BELIEVE that DNA's only use or purpose is to encode the synthesis of protein, that it is dead memory (ROM-DNA). One MUST ALLOW that 98.5% of its bases, with no recognized value for the protein synthesis, are good for evolution's trashcan. Junk DNA MUST be understood as selfish parasite, "the Ultimate parasite."

Richard Dawkins and the late Francis Crick, the heroes of the neo-Darwinian synthesis, incarnate more than anybody else the decision that it MUST be so. They took this decision at the end of the 1970s: junk DNA, this already inappropriate name that often tells more about ignorance rather than knowledge, was then equated to selfish DNA.

Since then, for a quarter of a century, the Empire of Living Money has progressed everywhere. Dolly had the time to be born and die (of premature senescence). ONE can now sell you your eternal cat, at the "reasonable" price tag of US\$ 50,000 per copy.⁶⁹

MAN IS DEAD, LONG LIVES THE NEXUS!

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3. <http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=nexus>
4. <http://www.bartleby.com/61/7/N0090700.html>
5. <http://www.bartleby.com/61/roots/IE338.html>
6. <http://www.etymonline.com/j1etym.htm>
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9. Gilles Deleuze, "Post-scriptum sur les sociétés de contrôle." *Pourparlers*. Paris: Minuit, 1990/2003 [1980], 240-247.
10. This story provided the inspiration for Riddley Scott's 1979 movie *Alien*. First unacknowledged, the influence got recognized after van Vogt filed a lawsuit claiming plagiarism. The lawsuit was settled out of court, and van Vogt got both an undisclosed sum of money and a presence in the credits of the movie.
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12. Alfred Korzybski, *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics*. International Non-Aristotelian Library Publishing Company: Lakeville, CT, 1958 [1933], i.
13. Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*. New York: The Free Press, 1978 [1929], 20.
14. Whitehead, *Process and Reality*, 18.
15. Whitehead, *Process and Reality*, 20.
16. This seems very close to William James' program for "radical empiricism", which states that "relations that connect experiences must themselves be experienced relations, and any kind of relation experienced must be accounted as "real" as anything else in the system" (William James, *Essays in Radical Empiricism*. Dover, New York, 2003 [1912], 23, emphasis in the original).
17. "NEXUM - Rom. civ. law. Viewed as to its object and legal effect, *nexum* was either the transfer of the ownership of a thing or the transfer of a thing to a creditor as a security (...) The person who became *nexus* by the effect of a *nexum* placed himself in a servile condition, not becoming a slave, his *ingenuitas* being only in suspense, and was said *nexum inire*." Entry "Nexum," by George Long, M.A., Fellow of Trinity College, pp. 795-798 of William Smith, D.C.L., LL.D.: *A Dictionary of Greek and Roman Antiquities*. John Murray: London, 1875.
http://penelope.uchicago.edu/Thayer/E/Roman/Texts/secondary/SMIGRA*/Nexum.html
18. "'Mancipium" or *mancipatio* was a formal public ceremony required for recognition of conveyance in "title" of legal ownership to a thing (*mancipatio* — taking in hand). The ceremony included striking a scale with a copper ingot as a token of sale. Without this ancient ritual, no exchange had the sanction or protection of the law." Entry *mancipium*, by George Long, M.A., Fellow of Trinity College, pp. 727-728 of William Smith, D.C.L., LL.D.: *A Dictionary of Greek and Roman Antiquities*. John Murray, London, 1875.
http://penelope.uchicago.edu/Thayer/E/Roman/Texts/secondary/SMIGRA*/Mancipium.html
19. "Unto the woman he said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children; and thy desire [shall be] to thy husband, and he shall rule over thee. And unto Adam he said, Because thou hast hearkened unto the voice of thy wife, and hast eaten of the tree, of which I commanded thee, saying, Thou shalt not eat of it: cursed [is] the ground for thy sake; in sorrow shalt thou eat [of] it all the days of thy life; Thorns also and thistles shall it bring forth to thee; and thou shalt eat the herb of the field; In the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken: for dust thou [art], and unto dust shalt thou return." *Genesis*, 3: 17-19.
20. Michael Andermatt, "Artificial Life and Romantic Brides", in *Romantic Prose Fiction*, a volume in the ICLA (International Comparative Literature Association) Comparative Literary History Series. Editors: Gerald Gillespie (Stanford), Manfred Engel (Hagen), Bernard Dieterle (TU Berlin). <http://homepage.sunrise.ch/mysunrise/mandermatt/publikation6.html>. The overall Gnostic flavor of the android, this demiurgic project, is clear from the start. For, as the Gnostic Gospel of Thomas had it, "(15) Yeshua said, When you see one not born of woman, fall on your faces and worship. That is your Father." In *The Gnostic Bible*. Ed. Willis Barnstone & Marvin Meyer. Boston, Shambhala, 2003, 49.
21. All these quotes come from Verena Kuni's "Cyborg configurations as formations of (self)creation in the fantasy space of technological creation (I): Old and new mythologies of artificial humans" [web site retrieved February 20, 2206] available on line at http://www.medienkunstnetz.de/themes/cyborg_bodies/mythical_bodies_1/1/
22. Remy de Gourmont, *Le livre des masques. Portraits symbolistes, gloses et documents sur les écrivains d'hier et d'aujourd'hui. Tome 1*. Paris:

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Société du “Mercure de France”, 1896, 87-96.

23. http://www.artroca.com/art_folder/cve2.html

24. Critical Art Ensemble, *Cult of the New Eve position paper*, [web site] retrieved February 20, 2006, online at <http://www.critical-art.net/biotech/conc/>

25. “Microvenus - art form using genetic sequences and binary code” *Art Journal*, 55:1, Spring, 1996, 70-75, http://www.findarticles.com/p/articles/mi_m0425/is_n1_v55/ai_18299596

26. “The Mutagenic Arts”, *CIAC's Electronic Magazine*, 23, Fall 2005 http://www.ciac.ca/magazine/archives/no_23/en/index.html

27. Villiers wrote: “Far from suppressing the love towards these spouses,—so necessary (until further notice, that is) to the perpetuity of our race,— I propose instead, to assure, reaffirm and guarantee its duration, integrity and material interests, with the innocent help of thousands and thousands of marvelous simulacra—where beautiful mistresses deceiving, but now harmless, will become a nature made more perfect by Science, and whose healthy adjunction will attenuate, at least, the prejudices that carry with them always, after all, your hypocritical conjugal weaknesses. So, I, ‘the Sorcerer of Menlo Park’, as I am called here, I come to offer to human beings of this evolved and new times,—to my fellows in Actualism, at last!—to prefer henceforth to the lying, mediocre and always changing Reality a positive, prestigious and always faithful Illusion.”

28. <http://www.ckac.org/transgenicindex.html>

29. <http://www.ckac.org/transgenicindex.html>

30. “Eduardo Kac’s Genesis: Biotechnology Between the Verbal, the Visual, the Auditory, and the Tactile” Installation at the Julia Friedman Gallery, Chicago, U.S.A, Reviewed by Simone Osthoff, Assistant Professor Art Criticism, School of Visual Arts, Penn State University, U.S.A.

Originally published in *Leonardo Digital Reviews*, October 2001. http://mitpress2.mit.edu/e-journals/Leonardo/reviews/oct2001/ex_GENESIS_osthoff.html. Retrieved February 20, 2006, available at <http://www.ckac.org/osthoffldr.html>

31. Erwin Schrödinger, *What Is Life?* Cambridge: Cambridge University Press, 1992 [1944], 21.

32. About this tragic phenomenon, one will consult with great advantage Thomas Frank’s *The Conquest of Cool* (University of Chicago Press, 1997), and/or Joseph Heath and Andrew Potter’s *The Rebel Sell* (Toronto, HarperCollins, 2004).

33. “Once the DNA representing the Microvenus was chemically synthesized and converted into a form that can be inserted into a cell, the next step was to introduce this DNA into a kind of biological “shipping carton” that scientists usually refer to as a “vector.”(4) A vector in this sense is typically a viruslike entity that is not able to “live” autonomously but that can be absorbed through cell membranes and thus enter and reproduce inside living cells.” (Davis, “Microvenus,” n. 15).

34. <http://www.ckac.org/move36.html>

35. “The mutagenic arts,” n. 16.

36. See Thierry Bardini, “Hypervirus: A Clinical Report”, at <http://www.theory.net>, for further elaboration of the apparition of the trope of the virus in so-called “post-modern” culture.

37. Renato Dulbecco, Howard Martin Temin and David Baltimore won the Nobel Prize in medicine in 1975 for “their discovery concerning the interactions between the viruses of cancerous tumours and the genetic material of the cells.” Baltimore’s work centered on the characterization of the reverse-transcriptase, an enzyme specific to viral RNA that allows it to integrate their genes into the cell’s DNA. See http://nobelprize.org/nobel_prizes/medicine/laureates/1975/baltimore-interview.html

38. Bruno Latour, *We Have Never Been Modern*. London: Harvester Wheatsheaf, 1993, 100-129.

39. “A code is inseparable from a process of decoding that is inherent to it.... There is no genetics without “genetic drift.” The modern theory of mutations has clearly demonstrated that a code, which necessarily relates to a population, has an essential margin of decoding: not only does every code have supplements capable of free variation, but a single segment may be copied twice, the second copy left free for variation. In addition, fragments of code may be transferred from the cells of one species to those of another; Man and Mouse, Monkey and Cat, by viruses or through other procedures. This involves not translation between codes (viruses are not translators) but a singular phenomenon we call surplus value of code, or side-communication. “ (Deleuze and Guattari, *A Thousand Plateaus*, 53)

40. Keith Ansell Pearson suggests that D+G hold a kind of “molecular Darwinism: “the suggestion is that one can only understand a molar population such as a species, in terms of a different kind of population, a molecular one, which is the subject of the effects of, and changes in, coding.” *Germinal Life: The Difference and Repetition of Deleuze* (Routledge: London, 1999, 159.) This, however, sounds too close to Richard Dawkins’s version of neo-Darwinism not to raise my suspicion. For it was mostly Dawkins’s idea—the selfish gene—that Crick and his colleagues used to close the metaphoric performativity of the

initial cybernetic metaphor of molecular biology: by referring to parts of DNA whose only function was its “replication” (i.e. “selfish” survival), they actually declared that junk DNA was selfish, and therefore that no use was to be searched in there (see Bardini, forthcoming for this line of argument).

41. The last sentence of this quote is used by Oron Catts and Ionat Zurr in their text entitled “The Art of the Semi-Living and Partial Life: Extra Ear—1/4 Scale” available on their website at <http://www.tca.uwa.edu.au/publication/TheArtoftheSemi-LivingandPartialLife.pdf>

The whole story is available on-line at the Revolution Science-Fiction website, at the following URL: <http://revolutionsf.com/article.html?id=2273>

42. Slavoj Žižek, *Organs without Bodies: On Deleuze and Consequences*. New York: Routledge, 2004, 121.

43. Ionat Zurr & Oron Catts, “Artistic life forms that would never survive Darwinian Evolution: Growing Semi-Living Entities”, <http://www.tca.uwa.edu.au/atGlance/pubMainFrames.html>

44. <http://www.tca.uwa.edu.au/ars/text.html>

45. For instance, about their collaboration with Stelarc, they note that their work involves “the actual and suggestive disfigurement of the human body- the detached organ which is easily recognizable as human - a somewhat playful reverse reference to Artaud’s body without organs was in our case an organ with no body; or rather an organ with a technological body.” Oron Catts and Ionat Zurr, “The Art of the Semi-Living and Partial Life:

46. Ibid.

47. Ibid.

48. Žižek, *Organs without Bodies*, 120-121.

49. See Thierry Bardini, *Junkware*, forthcoming in the Posthumanities book series at the University of Minnesota Press, late 2010 or early 2011.

50. Henri Atlan, *Lutérus artificiel*. Paris, Seuil, 2005, 28.

51. Atlan, *Lutérus artificiel*, 42.

52. *Lutérus artificiel*, 47-48.

53. <http://www.symbiotica.uwa.edu.au/research/bioreactor.html>

54. Gershom Scholem, “The Golem of Prague and the Golem of Rehovot,” *The Messianic Idea in Judaism and Other Essays in Jewish Spirituality*. New York: Schocken, 1971, 338.

55. On-line at the following url : <http://users.lmi.net/sonyarap/redceming/index.html>

56. Gershom Scholem, “Isaac Luria and his School,” in *Major Trends in Jewish Mysticism*. New York: Schocken, 1995 [1946], 281.

57. Eugene Thacker, *The Global Genome: Biotechnology, Politics and Culture*. Minneapolis: MIT Press, 2005.

58. Žižek, *Organs without bodies*, 126.

59. Žižek, *Organs without bodies*, 133.

60. Gilles Deleuze, *Foucault*. Trans. Sean Hand. Minneapolis: MIT Press, 1988, 132.

61. Deleuze does not say where in Rimbaud: it is in his letters, the so-called “Lettres dites du voyant”: “Donc le poète est vraiment voleur de feu. Il est chargé de l’humanité, des animaux même.” Overman is thus first a poet, a promethean poet ready for a season in hell.

62. Keith Ansell-Pearson, *Germinal Life: The Difference and Repetition of Deleuze*. London: Routledge, 1999, 222.

63. *The Ass Festival*. Loaded as in “intoxicated”, drunk. In *Difference and Repetition*, Deleuze notes: “Thus Zarathustra’s Ass says yes; but to him, to affirm means to bear, to assume or to shoulder a burden oneself. He bears everything: the burdens with which he is laden (divine values), those which he assumes himself (human values), and the weight of his tired muscles when he no longer has anything to bear (the absence of values). This Ass and the dialectical ox leave a moral after-taste. They have a terrifying taste for responsibility, as though it were necessary to pass through the misfortunes of rifts and division in order to be able to say yes.” (Trans. Paul Patton. New York: Columbia University Press, 1994, 53). Nietzsche provides one of the metaphorical clues of the Ass character: “I am *l’anti-âne par excellence*, what makes of me a monster unique in history. I am in Greek – and not only in Greek – the *anti-Christian*” (“Why I Write Such Good Books,” §2. *Ecce Homo*, in *Basic Writings*. Trans. Walter Kaufman. London: Random House, 2003, 719). Pierre Klossowski might give the final clue in his wonderful “Nietzsche, polytheism and parody” (in *Un si funeste désir*, Gallimard, 1963, revised translation from <http://lists.village.virginia.edu/cgi-bin/spoons/archive1.pl?list=deleuzeguattari.archive/papers/kloss.polytheism>):

“Zarathustra, once he has willed the eternal return of all things, has in advance chosen to see his own doctrine ridiculed, as if *laughtex, this infallible murderer*, was not also the best inspiration, as well as the best despiser of this same doctrine; *thus the*

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eternal return of all things wills also the return of the gods. What other sense, if not this one, can we attribute to the extraordinary parody of the Last Supper where God's murderer is also the one who offers the chalice to the donkey - sacrilegious figure of the Christian God from the time of the pagan reaction, but more specifically the sacred animal of the ancient mysteries, the golden donkey of the Isiac initiation, an animal dignified by his indefatigable *Ia* [*ita est!*] - its indefatigable *yes* given to the return of all things - worthy of representing divine forbearance, worthy also thus of incarnating an ancient divinity, Dionysus, the god of the vine, resuscitated in the general drunkenness. And, effectively, as the Traveller declares to Zarathustra: *death, with the gods, is never anything but a prejudice.*" *Ia!*

64. Or more appropriately for the *aeuum*, the times of the angels: *Tempus enim et aeuum simul inceperunt cum creatura aeviterna et temporali* (St. Albert).

65. Gilles Deleuze and Félix Guattari, *Anti-Oedipus*. Trans. Mark Seem et al. London: Athlone Press, 1983, 4).

66. Rimbaud again, in "Soleil et chair" (Sun and flesh), originally entitled "*Credo in unam*," in Arthur Rimbaud, *Collected poems*. Trans. Olivier Bernard. London: Premiere Books, 1962:

If only the times which have come and gone might come again!
- For Man is finished! Man has played all the parts!
In the broad daylight, wearied with breaking idols
He will revive, free of all his gods,
And, since he is of heaven, he will scan the heavens!

67. After all, even bacteria do it (horizontal transfer of DNA), right? Some even use another life-form (a bacteriophage) as a sexual medium, in which case it is called *transduction*. I borrow the expression "abstract sex" from Luciana Parisi's eponymous book.

68. This is exactly the opinion held by Ian Wilmut, Dolly's father, in a paper published in April 2005 in *The Scientist* and entitled "The Case for Cloning Humans." The trailer of this article read: "*Controversial? Yes. But this approach might just be the best way to understand and treat otherwise intractable diseases.*" *The Scientist*, 19(8): 16, April 25, 2005, available on-line at <http://www.the-scientist.com/2005/4/25/16/1>

69. Ivan Oransky, "Cloning for Profit," *The Scientist*, 19(2): 41, January 31, 2005 [<http://www.the-scientist.com/2005/1/31/41/1>]