ASTROLOGICAL DARWINISM



PROPHE**SY**ING THE RETURN OF FEMININE MAGIC

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Astrological Darwinism

Prophetizing the return of feminine magic

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Chapter 1

Age of Aquarius and Age of Leo in human evolution

Imagine a world where women have the possibility to intuitively choose any mutation in their offspring that will help their children to embody an evolutionary leap. Twelve thousand years ago, women lived in this world and they genetically boosted humanity from being hunters and gatherers into becoming agrarians and city dwellers. Fourteen thousand years in the future they will again boost humanity, a magical boost that will produce the transhumans of our far away future. Those past and future genetic boosts were and are immanent, embodied, magical and freely chosen, thus creating the really new.

This cycle of 26.000 years is connected to the astrological zodiac. Today we are astrologically shifting into the New Age of Aquarius, out of the Age of Pisces. But twelve thousand years ago we were in the middle of the Age of Leo and fourteen thousand years from now we will again be at the peak of the Age of Leo, the magical era of peak embodied immanence. According to the sociologist Weber, our era can be characterized by a steady process of 'Disenchantment', of progressive objectification and technological advancement (Weber, 2008). This Disenchantment will continue the next thousand years, while we move towards the peak of the Age of Aquarius, but after that, Enchantment will return and peak at the future Age of Leo, fourteen thousand years from now.

In the Age of Leo, at peak embodied Enchantment, women do not just procreate, they actually change the human gene fundamentally by what I call 'chosen mutations', thus giving humanity a plural, diverse genetic boost. We now live in the Age of Aquarius where only the opposite of 'chosen mutations' exists: 'random mutations'. In our time these 'random mutations', that are always present, are the only source of fundamental change in the human gene, and compared to the desired effect of the 'chosen mutations' they only have a neutral or negative effect on our species. As a consequence mankind's genetic evolution is severely halted in our age, whereas during the Age of Leo it was strongly boosted. Our age is the age of Neodarwinism whereas the Age of Leo, preceding the Pyramids by thousands of years, was the age of Magical Darwinism, which can also be called Pro-Choice Darwinism.

Astronomically, the astrological Great Year of the Zodiac is governed by the precession of the equinox. This astronomical precession of the equinox is the gradual shift of the orientation of the earth's axis of rotation. It has a period of 26.000 years and in astrology, this period is divided in twelve parts of each about 2170 years. The astronomical constellation in which the sun is located in at the beginning of spring, the vernal equinox, determines the astrological age we are in. At the moment, the vernal equinox is leaving Pisces and entering Aquarius, see Fig. 1. About 12.000 years ago we were in the middle of the Age of Leo. These 26.000 years of the voyage of the vernal equinox through the constellations of the zodiac represents the *Great Year* of astrology. It is my strong conviction, my belief actually, that this is also a crucial cycle in human evolution.

The Great Year of Astrological Darwinism is divided in twelve Ages each carrying the name of it's zodiacal sign. Each Astrological Age imprints a unique character on humanity, produces a specific 'condition humaine' during its two millennia. The theosophist Schwaller de Lubicz described it as: "During the long period of a precessional month, the dominant constellation influences life on earth on a universal scale, just as spring or another season does for our short annual year," (Schwaller de Lubicz, 1961). For skeptics towards astrology this is of course a complete non-issue, because from their perspective the correlation is non-existent. But as I will explain later, the skeptic cannot use science to falsify the first principles of Astrological Darwinism. The science needed to falsify the proposed holistic influence of the orientation of the earths axis relative to the planets and the stars on biology, Quantum Gravity Biology, doesn't exist yet. Lacking the science to falsify it, all the skeptic can do is to ridicule the paradigm. This implies that all the skeptic can do relative to Astrological Darwinism is to firmly *believe* in his presumptions, meaning reductionist materialism according to which life can and will in the future be reduced to a machine. In opposition to this machine ideology, Astrological Darwinism is rooted in the belief that life has its own, positive and non-reducible source in the soul as a bubble of 'life water' or 'élan vital' or 'droplets of Beyng'.

In this book I present the belief that the Astrological *Great Year* is fundamentally a *Cycle of Life* in the Darwinist evolution of humanity. In the Age of Aquarius, the evolution of humanity follows the principles of Neodarwinism, meaning that only 'random mutations' and 'natural selection' act as driving forces. Humanity in the Age of Aquarius is at the peak of objective science and correlated absence of consciousness of magic. The Age of Aquarius is also known as the apex of disenchantment. In our age, Neodarwinism rules because we are at peak dualism of body and soul. Many years ago when I was a student of philosophy and physics, this Grand Narrative Hypothesis had been triggered by the Zodiac of Denderah, as depicted in (West, 1978).

The construction of this zodiac dates back to around 50 BC but the astronomical knowledge incorporated into it is much older. The zodiac was rediscovered in a room in a temple at Denderah by Napoleon's scientific Egypt expedition of around 1810, Fig. 2. In the Zodiac, see Fig. 3 for a full drawing of the ceiling of the room, these souls are depicted as men imprisoned in a bubble. Because there are so many figures and symbols in this picture, I zoom in on it in the following figures. For this, I reproduced the zodiac in a new drawing, also because the 1817 drawing by Jollois and Villiers, as members of Napoleon's scientific Egypt expedition, contains several deviations from the actual Zodiac, which is presently at the Louvre in Paris.

In Fig. 4, I reproduced a drawing that is a more accurate towards the relevant details for my hypothesis. Zooming in even further on the men imprisoned in a bubble, underneath the sign of Aquarius, and the pregnant woman with bow and arrow, underneath the sign of Leo, Fig. 5, gives more details. The trapped soules and the woman depict, in my Grand Narrative Hypothesis, the core idea of Astrological Darwinism, the two extremes of the Cycle of Life. Biologically, because the very large majority of random mutations are detrimental to mankind, creative genetic evolution comes to a near halt in that half of the Great Year that is dominated by Aquarius. Only natural selection is effectively at work during that part of the Cycle of Life.

Opposite to Aquarius we have the constellation of Leo and during the Age of Leo, Magical Darwinism is at it's peak. In the Zodiac of Dendera, this idea can be read into the picture of the woman shooting an arrow. in a rather clumsy fashion, from her womb towards the constellations that lie ahead in the future. See Fig. 6. This picture represents the key idea of creative Darwinism in that half of the Great Year dominated by Leo. Women are the principle active agents of genetic human evolution. As I mentioned in the start, Magical Darwinism could also be called Pro-Choice Darwinism. At the peak of Magical Darwinism in the Age of Leo, women do not just procreate, they create their offspring. Whereas during the Age of Aquarius, 'random mutations' are the only source of fundamental change in the human gene, in the Age of Leo women have the magical capacity to produce 'chosen mutations' in their offspring. At the peak of Magical Darwinism, 'chosen mutations' and 'natural selection' are the two driving forces of human evolution. Chosen mutations of the genes of women's offspring during pregnancies are possible because body and soul are completely immanent during the Age of Leo. Body and soul are one and as such the Age of Leo is the true opposite of our present Age of Aquarius with it's peak dualism or transcendence of the soul relative to the body. The Age of Leo is also the apex of enchantment, as much as we are now headed towards peak disenchantment in the Age of Aquarius.

The capacity to produce 'chosen mutations' during pregnancy has it's roots in the combination of quantum mechanics and the soul as 'life water'. During the Age of Leo, the soul acts as the hidden variable of 'Bohmian' Quantum Mechanics (Bohm, 1952), producing chosen collapses of the wave functions in genes, which produce the 'chosen mutations'. The power of the soul to act as the hidden variable of quantum mechanics is what I call the emerging of the 'Goddess Principle'. The soul has this principle all the time, but during the dualist Ages, transcendence brings this capacity in an unconscious state. During immanent Ages, the melting of body and soul, of matter and droplets of Beyng, adds enchanted consciousness to our capacity to apply the 'Goddess Principle'.

The Magic part of Darwinism around the Age of Leo is restricted to the conscious use of being the hidden variable of quantum mechanics and thus being able to choose the way and the moment a wave function in the organism collapses. In this quantum mechanical way, random transforms into *chosen*, without manipulating any (other) law of physics. The magic during the Age of Leo is a restricted magic, limited to being like a Bohmian hidden variable on the nano scale of quantum mechanics. In my view, the 'Bohmian like' hidden variables are present in living organisms only, giving a 'Bohmian quantum biology'. At the highest level of the complexity of life, the hidden variables are manifest as free will, with all the moral dilemma's that go with it. A consequence of this quantum biology perspective is that living stuff and non-organic matter are complementary domains, as already stated by Niels Bohr (Bohr, 1958). In the words of quantum cosmologist Paul Davis: Bohr believed that the distinction between living and non-living systems was fundamental, and actually a manifestation of his principle of complementarity (Davies, 2004). The difference between 'random mutations' in the Age of Aquarius and 'chosen mutations' in the Age of Leo has its roots in quantum biology and the cycle of transcendence \leftrightarrows immanence of the soul as the carrier of the 'quantum-bio hidden variables' or Goddess Principle.

The ongoing cycle of Neodarwinism \leftrightarrows Magical Darwinism is what I call Astrological Darwinism. It produces cycles of boosts and halts in human evolution, but it also results in contrasted cycles of contraction and expansion of populations. During the Magical part of the Great Year of human evolution, the species tends to contract its population and boost itself genetically. During the Scientific part of the Great Year, the species tends to expand its population and come to a halt genetically. It is also a cycle of immanence and transcendence of the soul or 'life water' relative to the body and all matter around. When the soul goes transcendent, matter becomes transparent and science is possible. In sociology this is referred to as a process of disenchantment. Heidegger called it the forgetfulness of Beyng. When the soul goes immanent, matter becomes opac and and magical consciousness flourishes. Every Age of the Zodiac has its specific distance from and direction to the two peaks of the cycle, Leo and Aquarius, and thus its own 'condition humaine', somewhere in between the peaks of enchantment and disenchantment. In this way, the influence of the Great Year of the Zodiac on humanity is a result of Astrological Darwinism.

Chapter 2

Predicting the future of humanity

Astrology is partly about predicting the future. Thus, astrology on the level of the Great Year is about interpreting the past and predicting the future of mankind. The Cycle of Life of 26.000 years, as I just described, gives us a pattern that should be recognizable in our past and expected to continue in our future. Alternating periods of boosts and stagnation of our genetic evolution, around the Age of Leo and the Age of Aquarius, should be manifest. Together with periods of maximum expression/expansion of the human self and or the human species during periods of genetic stagnation. Periods of let go of the past and searching for new ways of expression and problem solving during periods of genetic boosts. All this in cycles of 26.000 years.

Looking for such a pattern on this timescale has not been done before. On a smaller scale, we have Nietzsche's cycle of Dionysus and Apollo or the cyclic worship of the forces of the Moon-Goddess and delirium and the worship of the Sun-God and rationality. But to expand these cycles and to connect them to our own evolutions is new. You need to know what to look for before you become aware of it. But some have stumbled upon it without realizing it. If we look at Constance Tippett's Timeline of the Goddess, going back 32.000 years, at first we see just what the title announces, lot's of goddess symbols on a time-line, see Fig. 7. It is an interesting info-graph, also from what is missing in it. We observe the relative absence of a God related to procreation and fertility. During the longest period on Tippett's chart, from 32.000 years ago until at least 5.000 years ago, all fertility related issues were female and goddess related. But the cult of the Goddess figurines goes back at least 10.000 years more. The oldest Goddess figurines date back to the Early Aurignacain, some 42.000 years ago.

Only in the last 5000 years or so has the male gender discovered that having sex and donating sperm had something to do with pregnancies and procreation. Theologians, but also philosophers, as for example Aristotle, sized the moment and exaggerate the male role in reproduction by declaring the role of the male as donating the active seed and the role of the female as the passive and unintelligent soil in which the smart seed was planted. The mentality of this unfounded male reversal of the 40.000 Goddess years before the invasion of the fertility domain by the God concept is still at work in Neodarwinism today.

The two domains, the creation of the universe and the creation of life, have been claimed by men to be area's where male logos dominates female matter for several thousands of years now. These claims have never been proven, because they were never more than claims. In the first few thousand years of this claim, it played out mainly as a battle between cults of the Goddesses and cults of the Gods. In the course of time theology rationalized this battle of gender restructuring. Science took over this legacy from theology, without changing the gender foundation of it. Male dominated science, of which Neodarwinism is a part, has taken over the never substantiated claim of the theologians regarding the all knowing capacity of their God Principle. Present day experimental science cannot realize that claim either, but for the speculative theoreticians among them, developing a Theory of Everything (TOE) as a replacement of the God Principle has become a major research project. This exaggerated claim regarding the capacity of male dominated science, as a replacement of the similarly exaggerated claim of the theologians regarding the capacity of their God, dominates the usual visions of the future of mankind. For a long time, visions of the future of humanity have been all about either optimistic or pessimistic science fictions, extrapolated male expectations of the continuing exponential development of science and technology. The foundation of all these visions are the non-substantiated claims of Science and Technology on its manic way to a TOE as replacing a evenly manic God concept. Theosophist as Schwaller de Lubicz represent the intermediary practice,

looking for the divine knowledge of the all seeing Eye of the Illuminati using a mixture of science, theology and spiritualism. Critique on the scientific/theological hubris has a marginal status.

In my view, there is wisdom in the tradition of the Goddess that visually started in the paleolithic some 40.000 years ago with the fertility figurines. Fertility and the related future of the genetically determined part of human evolution is predominantly a female affair, a Goddess Principle domain. Males can theoretically claim what they want, whether as theologians or as scientists, the secret of life and fertility will for always remain out of their experimental reach, beyond their practical control. In my view, Magical Darwinism or Pro-Choice Darwinism based on the Goddess Principle is manifest, on multiple levels of analysis, in the pictographic Goddess figurines time-line of Tippett. It presents women as the active agents, with their own free will, relative to human fertility as creation, not just passive procreation. It fuses fertility with artistic creation and the divine, as it is intended in Magical Darwinism, which in principle is just a post-scientific version of the Cult of the Goddess.

In Tippetss's Timeline of the Goddess, two Great Years and the creative discontinuity between them are visible for the eve that is searching for a specific pattern, see Fig. 8. According to my ideas, Magical Darwinism in the Age of Leo around 10.000 BC caused the end of the Upper Paleolithic and the subsequent Neolithic Revolution. The Neolithic Revolution is the first manifest beginning of our present Great Year, but it had its cause in the peak of the genetic creative window in the 6.000-8.000 years around the middle of the Age of Leo. This is approximately from 13.000 BC to 7.000 BC, coinciding with the Natuf culture in the Middle East (Munro, 2004). As should be expected in the context of my theory, the Upper Paleolithic completely coincides with the previous Great Year. The Upper Paleolithic had it's peak around 25.000 before present (BP), so around 23.000 before Christ (BC). This fits with the peak of Cave Art in Europe and coincides with the previous Age of Aquarius. The Upper Paleolithic started in Europe with the Aurignacian culture, from 42.000 BP to 34.000 BP, with its peak around 38.000 BP (Mellars, 2006). This utterly coincides with the peak of the Age of Leo at 38.000 BP and the creative window of 6.000-8.000 years around it. The Upper Paleolithic is the Astrological Great Year from Age of Leo at 38.000 BP to Age of Leo at 10.000 BP, it is literally squeezed in between two windows of Magical Darwinism. During those creative windows, human evolution got

a genetic boost unexplained and unintelligible by Neodarwinism alone. In Tippett's Timeline of the Goddess we see the Goddess Principle and Astrological Darwinism at work.

If we look at the present Great Year and the pace of past human development, it should have been an agricultural-pastoral era, with agricultural villages surrounding cities dominated by guilds and trade where the surplus of agriculture was collected, traded and consumed. Grecco-Rome, Middle Age China and the Maya's should have been the peak accomplishments of our Great Year, which then should have continues for the next 10.000 years until the next creative window in the way the culture of the Upper Paleolithic maintained its basic character and presence. But the industrial-scientific revolution in Europe changed that course, partly due to freedom of time created by and for the elite of the guilds and the aristocracy in the Renaissance cities and the subsequent cumulative effects of education and systematic research. The freedom created inside the cities and its institutions gave room for unexpected levels of innovation, which then triggered more freedom of time and subsequent additional innovations. Which eventually brought us in the present with its exponential pace of progressing science and technology. But the Cycle of Life will continue anyway, which allows us to predict peak scientific consciousness to happen in about 1000 years, at the middle of the Age of Aquarius. After peak scientific consciousness, which will also be peak dualism of body and soul, immanence will slowly return. When the body gradually will be filled with the soul's 'life water', the transparency of matter for the soul and our consciousness will slowly fade away. With it will fade the desire for science and industrial research into nano- and pico-technologies.

This prediction of Peak Science, actually peak scientific consciousness, 1.000 years after present (AP) and the gradual fading interest of mankind in science afterwards is independent of events that might speed up the downfall of the present scientific-industrial world-culture. Environmental catastrophic events might bring with it the end of our present day culture, after which it will continue at a lower intensity and scale. Say somewhere in between present day complexity and the level of complexity of the Roman Empire. Environmental events and the Great Year can independently influence the evolutionary course of humanity. Thus, at whatever level our industrial-scientific culture will continue for the next thousands of years, as a state of mind it will reach a peak thousand years from now. Afterwards it will conservatively continue its course for thousands of years, gradually turning from scientifically into magically focused. Mankind will simply loose interest in science as an effect of growing immanence of the soul and connected fading dualism and transcendence. Then, 10.000 years AP, a new creative window will start and a new genetic evolutionary boost will be produced by matrilinearly connected successive generations of women. The next genetic creative peak at the Age of Leo will happen 14.000 years in the future.

What might happen during that creative peak is that women will adapt mankind psychologically and emotionally for a harmonious life in cities. But that is an expectation without certainty, because of the free will connected to the Goddess Principle and of the way Pro-Choice Darwinism works during those creative windows. The women of that era will decide for themselves in which new and unexpected direction they want to (pro)create humanity. Then, 20.000 years AP, a new Great Year will manifest its first accomplishments and yet again revolutionize human existence. By then, the Agri-Industrial Great Year we are in today will have become but a memory from a distant past.

The impossibility to predict the direction and content of the upcoming genetic boost is related to the concealed nature of the Goddess Principle. As a consequence, during the next genetic boost something really new will be created, something fundamentally unexpected. So instead of spending pages speculating the content of the next genetic boost during the Age of Leo, I prefer to apply Wittgenstein's seventh proposition in the 'Tractatus Logico-Philosophicus' here: Whereof one cannot speak, thereof one must be silent. (Wittgenstein, 1921) Wittgenstein's proposition applies because the Goddess Principle presents a limit to experimental scientific knowledge. We can study phenomena it produces but we cannot research its content before manifestation, its essence, in an attempt to predict the outcome of future expressions.

We can also relate the Goddess Principle to Heidegger's two versions of truth, truth as faithful representation (homoiosis; adequatio) and truth as revelation, authenticity or unconcealment (aletheia; veritas). Scientific truth is all about truth as adequate representation of facts whereas artistic truth is all about authenticity and revelation of the work as produced by the artist. In the first kind of truth, two things which both lie in the open can be compared to each other and the degree of resemblance can be objectivity judged using transparent criteria. In the second kind of truth, only one part lies in the open to be studied and the other part is essentially hidden. The Goddess Principle lies essentially concealed and cannot be forced out in the open, partly due to its free will character. All we can do to get to know it is to wait for it to come in the open and then observe its unconcealment or aletheia, its authenticity.

As such, the Goddess Principle is also related to Bergson's view on the 'élan vital' as being beyond both theist finalism and scientists mechanicism, in modern terms beyond both Creationism (or Intelligent Design) and Neodarwinism. The really new cannot be predicted; the 'élan vital' creates the new, which is beyond our understanding. Life as essentially becoming doesn't copy the pre-existing plan or blindly acts out the pre-existing law but creates the really new.

In Bergson's view, both Intelligent Design (as a finalism) and Neodarwinism (as a mechanism) lacked the capacity to explain the unpredictability of the evolution of life, which constantly creates new species. Translating Bergson: In short, the rigorous application of the principle of finalism, as with the principle of mechanical causality, leads to the conclusion that "everything is given". The two principles tell the same thing in their two languages, because they respond to the same need. (Bergson, 1907, p. 61) Now, theism in the modern variant of Intelligent Design or Creationism, is a finalist conception and Neodarwinism works as a causal mechanism. They represent two variants of determinism, the one as pulling towards a definite end and the other as pushing along the pre-calculable lines of mathematical laws. Against these deterministic approaches he proposed the 'élan vital'. This élan ... is the deep cause of the variations ... that create new species. (Bergson, 1907, p. 101) And the new in Bergson's view, must be really new, as in never seen before, never planned somewhere before, never calculable somewhere before (Marrati, 2010). The really new is not the pseudo-new as they are in finalism (=already designed in advance) and mechanicism (=already calculated in advance). According to Bergson, the role of life is to insert indeterminism in matter. (Bergson, 1907, p. 137)

The Goddess Principle as the cause of the really new is fundamentally concealed from theologians and scientists alike before apparition, and therefore a surprise to all of them at her revelation as aletheia/veritas. Predicting the future in Astrological Darwinism cannot go beyond forecasting the phases of the Cycle of Life. It cannot predict the actual manifestations of the Goddess Principle. The Goddess Principle on itself is the hidden, the concealed, by its very nature. Its manifestation or unconcealment/aletheia/veritas/revelation is life itself and as such unpredictable. This guarantees women, who's soul embody the individuated Goddess Principle, the freedom of will to realize a genetic boost of their own choice during the Age of Leo. The freedom to chose a *really new* genetic boost for humanity, to make the transhuman a reality.

The present day mentality of instant gratification will have a hard time accepting the concealment of the Goddess Principle and especially the long duration of the Great Year, its cyclic renewal and revelation. Heidegger in his later years wrote about the concept of *Seyn*, in contrast to *Sein* or *Being*, as the fundamentally hidden and talked about the task of modern man to learn to endure this hidden essence of *Seyn* or *Beyng*. He put this against the drive of Modern Man, as an explorer and scientist, to discover and uncover everything, everywhere, every time, all the time. For Modern Man, the awareness of something concealed or hidden or unexplored is a red flag, an insult even, and an invitation bordering towards an obligation and obsession to bring it into the open.

The Goddess Principle as the truly hidden and the realization of the Great Year as its long term untouchable cycle of unconcealment is unacceptable to Modern Man, to Modern Humanism. They will react to it as to an unprecedented insult, whether as a scientist, because it is beyond experimentation, or a theologian, because it is designed to be beyond the grasp of the God Principle. The hidden aspect of the Goddess Principle as the *Seyn* or *Beyng* of life's essence has to be endured and revered for many, many thousands of years to come. After that it will be women's role to bring *Beyng*, the Goddess principle in its individuated form as their immanent soul, into appearance during the next genetic boost creative window around the magic Age of Leo. With an unpredictable outcome because it will create the really new, as embodied transhumanism. That is as far as Astrological Darwinism can go in predicting the future of human evolution.

Chapter 3

A time-line of Great Years in human evolution

So now we have explored the previous, the present and the future Great Year. We took the Astrological time machine and we went back 42.000 years into the past and then we traveled 20.000 years into the future. We know that is it impossible to predict the content of the genetic boost humanity will experience in about 10.000 to 18.000 years when the next Age of Leo starts and completed its course. at 14.000 years AP. All that can be predicted is that this phase is going to arrive. We cannot foresee what the women of that era will create. Due to on the one hand the Pro-Choice and free will aspect of 'chosen mutations' in the Magical era of Astrological Darwinism, and on the other hand to the fundamental quantum limitations of gene technology, it is impossible to predict the content of the genetic boost humanity is in for. All we can do is to call it the Era of Astrological Transhumanism.

In this section I will look at the 'recent' past of humanity: the time frame of modern homo sapiens. For this we need to take a trip backwards again, to a time some 150.000 - 200.000 ago. Before that time, archaic homo sapiens lived in Africa and some parts of Eurasia. The further we go back, from the present to 200.000 BP, the scarcer the archaeological evidence will be.

If we go further back in time than the Upper Paleolithic, the previous great year, finds will become more scarce and evidence will be vague. Nevertheless, it still is possible to recognize precious Great Years, due to events indicating sudden boosts in the capacities of modern homo sapiens. The following list contains the Great Years of the future, the present and the past of modern homo sapiens. Bare in mind that we are traveling from the future to the past. Thus the list starts 40.000 years after present time (=40 ky AP) and ends 220.000 years before present (= 220 ky BP). Any Great Years further back in time as 142.000 years will be impossible to identify, because it cannot be connected to a specific boost in the capacities of modern homo sapiens.

- From 220 ky BP to 194 ky BP; Disperse slow development; Bottleneck preparation; too far in the past, lack of indicators.
- From 194 ky BP to 168 ky BP; Disperse slow development; Bottleneck preparation; too far in the past, lack of indicators.
- From 168 ky BP to 142 ky BP; Disperse slow development; Bottleneck preparation; too far in the past, lack of indicators.
- From 142 ky BP to 116 ky BP; East African Genetic Bottleneck Great Year; this genetic bottleneck established a core region from which modern homo sapiens sapiens expanded thereafter. See Fig. 9.
- From 116 ky BP to 90 ky BP; Sub-Africa expansion Great Year. See Fig. 10.
- From 90 ky BP to 64 ky BP; First Symbolism Great Year with expansion into Greater Africa; with its Aquarius peak around 77 ky BP which is marked by the first clear signs of symbolic markings and the use of complex fishing tools (Mcbrearty and Brooks, 2000). See Fig. 11.
- From 64 ky BP to 38 ky BP; Into Eurasia or Boat Great Year; River, Coastal and Sea crossing expansion with boats; with its Aquarius peak around 51 ky BP when modern homo sapiens reached Australia by deep sea boat fairing. See Fig. 12.
- From 38 ky BP to 12 ky BP; Upper Paleolithic or Cave Art Great Year, with its Aquarius peak around 25 ky BP; peak coincides with expansion into the America's from Siberian plains. See Fig. 13.

- From 12 ky BP to 14 ky AP; Present Agricultural→Industrial or Agri-Industrial Great Year, which is about to peak in its expressionistic/expansionist phase during the coming Age of Aquarius. See Fig. 14.
- From 14 ky AP to 40 ky AP; First Great Year that is totally in the future; with its Aquarius peak at 27 ky AP.

A summary of the recognizable Great Years: the Genetic Bottleneck Great Year; the Sub-Sahara Great Year; the First Symbolism-Sahara crossing Great Year; the Boat-Wallace crossing Great Year; the Winterzone-Cave Art Great Year; the Agri-Industrial and Pacific Great Year.

Further back in time, things become to vague to be able to recognizing specific genetic boost events, and to be able to indicate start, peak and ending millennia.

From a paleo-anthropological point of view, the periods with a *genetic boost creative window* are more interesting than the complete Great Year cycles themself. These windows mark sudden changes on an innovative level after a long period of relative stagnation. The concept of a periodically recurrent *genetic boost creative window* can solve the 'sapient paradox' as formulated by (Renfrew, 2008). This paradox is framed in two logical steps. The first based upon the presumed very slow pace of 'random mutations' as the creative input in human evolution. The second is based upon the Out of Africa expansion of modern homo sapiens as ending our shared genetic history.

in biological, i.e. genetic, terms the evolution of our species must have been effectively accomplished by the time of the out-of-Africa dispersals. [...] there is no reason to suggest that the human genome 60.000 years ago differs significantly and systematically from that of today. (Renfrew, 2008)

Due to this logics, humans were genetically finished 60.000 years ago, the latest possible date of the Out of Africa moment of modern homo sapiens.

What we may term the 'speciation phase' of human evolution, the period when biological and cultural coevolution worked together to develop the human genome and the human species, as we know it, was fulfilled already 60.000 years ago. This implies that the basic hardware - the human brain at the time of birth - has not changed radically since that time. (Renfrew, 2008)

The problem with this 'hardware' perspective, the genetics, is that the paleo-anthropological phenomena show a very different 'software' development, the mindset, of homo sapiens during the last 60.000 years.

That brings us to the sapient paradox. [...] The life of the hunter-gatherers who left Africa some 60.000 years ago does not appear to have differed very significantly from those remaining in Africa, and indeed from their predecessors. [...] It was not until towards the end of the Pleistocene period that, in several parts of the world, major changes are seen. They are associated with the development of sedentism and then of agriculture and sometimes stock rearing. (Renfrew, 2008)

Renfrew jumps from the Out of Africa event 60.000 years ago to the Neolithic agricultural revolution which became clearly visible on a world wide scale some 6.000 years ago. In his perspective, a 50.000 year period of stagnation has to be explained. By calling it the 'sapient paradox' Renfrew expresses the inability of Neodarwinist paleo-anthropology to do so. In the Neodarwinist paradigm, homo sapiens is presumed to be genetically ready for 'modernism' some 60.000 years ago, nevertheless behaviorally stagnant for another 50.000 years. Then, finally, the Neolithic agricultural revolution happened, world wide.

Although the details are different in each area, we see a kind of sedentary revolution taking place in western Asia, in southern China, in the Yellow River area of northern China, in Mesoamerica, and coastal Peru, in New Guinea, and in a different way in Japan. [...] It was then that patterns of living changed directly and trajectories of development were initiated which in some areas soon led to the rise of urban life and of state societies and indeed to the rise of literacy. (Renfrew, 2008)

This agricultural revolution, followed by an urban revolution, lead to the big question, the big problem, within the paradigm of Neodarwinist paleo-anthropology. Why did it all take so long? If the sapient phase of human evolution was accomplished some 60.000 years ago, why did it take a further 50.000 years for these sapient humans to get their act together and transform the world? That is the sapient paradox. (Renfrew, 2008)

Renfrew calls it a paradox because paleo-anthropology doesn't have an answer to it. And in the quote above, he only refers to the Neolithic Revolution. But elsewhere in the paper he also mentioned the Cave Art Revolution at the beginning of the Upper Paleolithic.

The discovery of clearly intentional patterning on fragments of red ocher from the Blombos Cave (at ca 70 000 BP) is interesting when discussing the origins of symbolic expression. But it is entirely different in character, and very much simpler than the cave paintings and the small carved sculptures which accompany the Upper Paleolithic of France and Spain (and further east in Europe) after 40 000 BP. (Renfrew, 2008)

One can also apply the concept of 'the sapient paradox' to this earlier context. Using red ocher and carving of geometric patterns on ostrich shells dates back 77.000–70.000 years BP. Then why took it another 26.000 years 'for these sapient humans to get their act together' and create art at the level of the Upper Paleolithic Cave Art creative revolution?

There are also other 'sapient paradox' moments regarding Renfrew's question: 'Why did it all take so long?'. If homo sapiens could cross the deep open sea between the land mass of Indonesia and Australia around 50.000 years ago, why did it take another 25.000 years to cross the much shorter Bering Sea (Bourgeon et al., 2017), and colonize the America's? In the middle of our inter-glacial period the Bering Sea is about 50 miles wide and in the middle of a glacial period the distance to cross should have been less. Humans already proved they had the technological capacity to cross wider stretches of deep ocean, so why didn't they do this until another 25.000 years ago and then wait another 25.000 years to enter the America's? They clearly didn't need land bridges any more to cross 50 miles of deep open sea, see Fig. 15. This expansionist pause equals exactly one Great Year, roughly from one Age of Aquarius to

the next Age of Aquarius, from one peak expansion to the next peak expansion.

The question Renfrew poses isn't new among scientists. In 2011 Sterelny refers to it as humanity taking a long time for becoming 'behaviorally modern', in a paper which she contributes to :

a debate in the paleo-archaeological community about the major time-lag between the origin of anatomically modern humans and the appearance of typically human cultural behavior. (Sterelny, 2011)

But Renfrew's formulation is exceptionally to the point. Due to the excellent observation skills of Renfrew and his sharp formulation of his intuition as 'the sapient paradox', I can present my paradigm with more precision. First of all, the paradigm of Astrological Darwinism doesn't agree with the premises of Renfrew: that the human hardware, our genome, was finished 60.000 years ago. According to Astrological Darwinism, humanity experienced two successive subtle genetic boosts creative windows. The first of those, the Upper Paleolithic genetic boost, around 38,000 years ago, directly resulted in the colonization of the harsh winter climate zone of Eurasia and in the related Aurignacian artistic explosion. In the literature, this is debated as the issue of the 'Upper Paleolithic Revolution' (Bar-Yosef, 2007), as an earlier analogy of the Neolithic Revolution. Indirectly it had another result, because modern (wo)man could now go deep into Siberia and thus reach the Bering Sea and expand into the Americas (Bar-Yosef, 2007). This barrier could easily be crossed by then because boat technology was already part of the human repertoire. The second genetic boost, the 'Natuf' around 12.000 vears ago, created the agricultural revolution.

I do agree with Renfrew that our *basic* genetic hardware was finished around 60.000 years ago, but that one genetic boost can produce *subtle* differences, subtle but enough to explain his 'sapient paradox'. Because of the subtlety of a single genetic boost, genetic mixing also easily spreads or shares these subtleties among populations. In the context of Astrological Darwinism, the answer to Renfrew's 'sapient paradox' is clear: it took a subtle genetic boost creative window of 6-8 ky around the Age of Leo to 'get their act together'. This last genetic boost from 16.000 to 8.000 years ago created the agricultural, sedentary revolution of the Early Holocene in at least three independent area's around the world. These three regions were the Fertile Crescent, the South and Middle America's and China. See Fig. 17. The genetic boost might have been a subtle one, the consequences weren't subtle at all. It resulted in our agri-industrial era.

In the paradigm of Astrological Darwinism, women were the active agents during these genetic boost creative windows. These matrilineal connected generations of women in a Pro-Choice free will environment created these new capacities because they envisioned and desired them. These women didn't 'get their act together', they spontaneously created something really new, in the way Bergson intended the new. What they achieved was out of the ordinary, unexpected, never seen before. They realized a wow event. This is the way the transhuman will be realized in the future genetic boost creative window.

In the two quotes from Renfrew's 2008 paper regarding the 'sapient paradox', we recognize three genetic boost creative windows: the one that resulted in the Into Australia event; the Cave Art one of the Upper Paleolithic and Agrarian one of the Neolithic. Every Great year starts with such a creative periode, creative in the genetic and evolutionary sense. These periods last about 6 - 8 ky around the start of the Great Year; 3-4 ky before and 3-4 ky after the beginning of that New Great Year. Astrologically, this comprises the Ages of Virgin, Leo and Cancer. This represents the creative window around the Age of Leo, producing a genetic boost.

These Age of Leo centered *genetic boost creative windows* can be dated also, as in the following list.

- 10 ky 14 ky 18ky AP; Next window of genetic boost, first possible appearance of genetically embodied and magically created transhumans, the Magical Transhumans of the future.
- 16 ky 12 ky 8 ky BP; Last genetic boost of modern humanity leading to the Neolithic agri-industrial revolution; peak coincides with Clovis culture in North America and full period with Natuf culture in the Levant; genetic boost that had multiple centers; continuation of subtle differentiation but followed by global genetic mixture. See Fig.18.
- 42 ky 38 ky 34 ky BP; Genetic boost related to Cave Art explosion; full period coincides with calibrated Aurignacian era in

Europe; first genetic boost that had multiple centers; start of subtle genetic differentiation or divergent genetic developments. See Fig.19.

- 68 ky 64 ky 60 ky; Genetic boost leading to boat fairing technology and lifestyle and and Out of Africa or Into Eurasia and Australia expansion; last possible genetic boost shared by all present day people. See Fig.20.
- 94 ky 90 ky 86 ky BP; Genetic boost leading to clear us of symbolism and ever more complex fishing tools (Mcbrearty and Brooks, 2000); first temporal appearance in the Levant. See Fig.21 and Fig.22.
- 120 ky 116 ky 112 ky BP; Start of South Africa arrival of Bottleneck Modern Man. Evidence of beginning of systematic fishing at fresh water shores of large African catfish (Mcbrearty and Brooks, 2000).
- 146 ky 142 ky 138 ky BP; Start of East African genetic creative event called the Bottleneck; possibly last of a series of genetic boosts related to the capacity of learning complex language. Magical creation of the trans-archai- humans: homo sapiens sapiens.

Astrological Darwinism states that windows of genetic boosts take place globally. And not just for humanity, but in all living creatures above a certain level of complexity. As a consequence, populations that are isolated from each other during these periods develop independently; realize their own local genetic boost in their own environment with its unique challenges, opportunities and desires. All clues indicate that the last window of human genetic boost that was restricted to Africa, the one around the age of Leo of 68 ky - 64 ky - 60 ky BP, is the last genetic boost that could have been shared genetically by all of mankind. For those who left took the genes with them and those who stayed could have spread those genes over the African continent again. This means that the windows of genetic boosts at the beginning of the Paleolithic, 42 ky - 38 ky - 34 ky BP, and at the beginning of our own time, 16 ky - 12 ky - 8 ky BP, have to be characterized by a certain degree of 'local taste'. But because the human genetic pool has been thoroughly mixed on a global scale since the beginning of agriculture (Slatkin and Racimo, 2016), any possible subtle differentiation due to these two multi-centered genetic boost windows should have become almost untraceable. The most observable trace might be the phenomenon of a local differentiation of natural talents, with the 'Picasso or Cave Art talent' as the most obvious.

To summarize: we can recognize several Great Years in human evolution of the last 150.000 years. We can characterize them by their most outstanding indicator. The Great Year of agriculture and industry; the Great Year of the Cave Art symbolic artistic explosion; the Great Year of boat fairing expansion; the Great Year of first symbolism and complex fishing technology; the Great Year of Sub-African expansion and the start of systematic fishing; the Genetic Bottleneck Great Year. Beyond the Great Year of first symbolism, identifying Great Years becomes extremely vague, if not simply impossible, due of lack of detailed archaeological finds that can be dated adequately.

But it is clear that the paradigm of Astrological Darwinism allows for a periodization of recent human evolution: the last 100.000 years with four identifiable Great Years. Its periodic discontinuous genetic boosts are a solution to the 'sapient paradox' as formulated by Renfrew, something Neodarwinism with its slow and continuous 'random mutations' mechanism is simply incapable of.

The categorization of periods beyond the Great Year of the Upper Paleolithic is too subtle to count as a experimental verification of the paradigm of Astrological Darwinism. But it is strong enough to count as an indicator in favor of the paradigm. The proof of the paradigm of Astrological Darwinism will come from the prediction regarding the future of humanity, the arrival of Peak Science and the fading of interest for science afterwards, eventually leading up to a magical, immanent consciousness around the next Age of Leo. But the verification or falsification of this prediction will not be possible any time soon. We may have an astrological time leap into our future at our disposal, but we are lacking a physical time machine.

Due to the vagueness of many indicators backing the periods categorization, falsifying Astrological Darwinism will also be very difficult. But because Astrological Darwinism produces more structure and predictions regarding past, present and future, it is a stronger paradigm than Neodarwinism alone and thus more interesting from a skeptical experimental scientist point of view. Falsifying it will prove to be quite a challenge. In my experience up until now all research thus far just strengthens my prior belief in its correctness.

Chapter 4

The rhythm of change in human culture and technology

Until the growth of cities in the Neolithic, the velocity of change among human populations followed the 26.000 year cycle. The lifestyle of the hunter-gatherer clans was so conservative that the concept of growth did not exist beyond of the growth of their children and the flora and fauna surrounding them. The clan didn't grow, the clan was. It was made up of a relative stable number of people, somewhere between fifty and hundred and fifty for the average clan, limited by the amount of people the environment would provide for in a the hunting and gathering economy.

These amounts had been stable for millions of years and were similar to those of chimpanzee groups and baboon troops. A distinctive difference: a certain number of clans formed a tribe and the clans met in a tribal gathering at regular intervals, behavior unknown to chimps and baboons.

The extent of these gatherings couldn't be too long because they had to bring their food with them for the duration of the gathering. The environment couldn't sustain that many people for long. On rare occasions, a clan became too big in relation to the environmental capacity and a split was necessary. Those who left the known area had to search for new land outside the territory of the tribe. Therefore it could take thousands of years to occupy new lands like South-East Asia, even if certain parts of the Eurasian continent could be completely explored in a single lifetime. In its innovative development modern homo sapiens followed the rhythm of the Great Year, the Cycle of Life.

The Great Year from 90 ky BP to 64 ky BP is characterized by the development of complex fishing technology, with the development of harpoons made out of bones. During these 26.000 years, there is no indication of boat use, although humans were catching fish. The implication is that they were fishing in swallow waters, where they could wade through and harpoon the fish by using spears. It also means that the open waters were a frontier they didn't cross, that this was a territory they couldn't expand into as fishermen. But they must have known that there was a lot of fish in those open waters of lakes, rivers and coastal waters.

The next Great Year from 64 ky BP to 38 ky BP is marked by the invention of boats, eventually complex enough to cross the sea from Indonesia to the Sahul, the continent of New Guinea and Australia when it was connected by a land bridge (Balme et al., 2009). It took a genetic boost creative window of many thousand years to push fishermen into inventing boats and acquire the mindset to use those boats for venturing into the open waters of lakes, rivers and along coasts. From there on, they improved boat technology for ten to twenty thousand years without the intervention of yet another genetic boost window. This was the period of disenchantment, of movement towards peak science, peak technology.

Around 55 ky BP, at the Age of Aquarius, that technology had improved to such a degree that they could cross a hundred miles of deep open sea. In that Great Year, they managed to occupy Australia, but didn't manage to enter the America's although they had the technology to cross the Bering See, which is about 50 miles wide in our warm inter-glacial.

It stands to reason that they didn't make it into the cold winter climate zone of northern Eurasia until the next Great Year. During most of the Great Year from 64 ky BP to 38 ky BP, modern homo sapiens expanded into the tropical and the moderate climate zones of Eurasia and Australia, but not into the harsh winter climate zones. This also prevented them from reaching North America in that Great Year. In order to achieve that, they needed a new genetic boost creative window: the one from 42 ky to 34 ky BP, the 'Aurignacian' genetic boost creative window. During and after the 'Aurignacian' genetic boost they expanded into the harsh winter zones (Nigst et al., 2014), replaced the Neanderthal (Benazzi et al., 2015) and Denisovan (Slatkin and Racimo, 2016) and entered North America around 25–20 ky BP from the northern Siberian plains (Slatkin and Racimo, 2016; Hoffecker et al., 2016) and possibly also from the European North Sea Plateau (Bradley and Stanford, 2004), at or not long after the Aquarius peak of that Great Year. See Fig. 15 and Fig. 16.

There is however one complication regarding the winterzone genetic boost as a clear and distict marker in time. That complication is related to the admixture of genetic material from Neanderthal and Denisovans with those populations that left the Near East into winterzone areas of Eurasia. Evidence strongly suggests that mating with Neanderthal and Denisovans not only occurred without doubt (Rasmus et al., 2017) but also that it transmitted essential physiological winterzone adaptations from Neanderthal and Denisovans into modern humans. Neanderthal and Denisovans accumulated genetic, both physiological and behavioral related, winterzone adaptations for several hundred thousand of years. Mating with them transfered the accumulated result of ten to twenty of genetic boost creative windows, of ten to twenty of Great Years of evolution, into those modern humans and that in a period of roughly 20.000 years in between 50.000 BP and 30.000 BP. This happened around 42 ky to 34 ky BP, so around the 'Aurignacian' genetic boost creative window. This, the winterzone adaptation cannot be simply assigned to that genetic boost, but the creative explosion present in Aurignacian cave art can, because Neanderthal and Denisovans lacked the figurative arts. A timeline connection between those mating events and the genetic boost creative window of around 38.000 BP still seems present, because modern humans and Neanderthal already occupied adjacent regions since the first arrival of modern humans in the Levant, around 90.000 BP (Pavlov et al., 2001). Why didn't they immediately start mating with the Neanderthal and then progressing into the winterzone areas of Eurasia. Why wait 40.000 to 60.000 years, roughly two Great Years?

In places that had been occupies already well before the 'Aurignacian' boost, as for example the Levant, modern humans already reached such population densities at the peak of the Upper Paleolithic Great Year, that they started to collect seeds from wild wheat on a more systematic scale than just opportunistic gathering. But they didn't make the step

from systematic gathering of wild wheat to actually farming it until the next genetic boost creative window, the one from 16 ky - 8 ky BP. This genetic boost creative window can be called the 'Natuf' genetic boost, after the people that lived in the Levant during that time and made the move from gathering wild wheat to farming it. These people already lived in larger communities at the start of this boost, but their villages grew considerable during this creative window. It seems that a genetic boost was needed to implement the innovation of agriculture and the life in permanent villages of more than 300 inhabitants. All the ingredients for this innovative boost were already there around 23 ky BP (Snir et al., 2015), but it took another 10.000 years to actually make the move. Once the initial innovation set foot, developing improvements went much faster. It seems that a change of mindset was the hardest part of that innovation.

So it took a genetic boost to go from fishing in waters they could wade through, to using boats in deeper water and then the rest of the Great Year to improve the technology of boats. At the Age of Leo they invented the boat lifestyle and at the Age of Aquarius they had improved it to such a degree that they crossed hundred miles of deep water that brought them to Australia. Then another genetic boost was needed to be able to enter the harsh winter climate zones of Eurasia, the territory of the Neanderthal and the Denisovan and the rest of that Great Year to improve on the winter climate technologies to such a degree that they managed to enter North America. The rythm of change that emerges is that at the Age of Leo they adopted/innovated a harsh winter climate lifestyle and at the Age of Aquarius it got improved to such a degree that they could enter North America, after which they quickly spread over the entire Americas.

When the clans couldn't grow by spreading out any more, due to the fact that now all continents were occupied, the pressure was on improving the use of their territories without moving further. In some places, systematically collecting wild wheat was developed already half way the Upper Paleolithic, 23.000 years ago (Snir et al., 2015). But a new genetic boost creative window was needed to make the shift from collecting wild wheat to sowing and harvesting it. It seems that a shift of mindset was needed and this shift of mindset was realized by a genetic boost during the creative window from 16 ky - 8 ky BP, the globally occurring 'Natuf' genetic boost. See Fig. 17.

The agricultural lifestyle in permanent settlements sharply increased the population densities, from less than one hunter-gatherer per square mile to 20 or more agriculturalists (Guzmán and Weisdorf, 2011). This was a revolutionary change in the history of modern homo sapiens. Until then, all innovations were directed to occupy more diverse ecological niches, founded on the conservative average hunter gatherer clan size, varying from 60 to 140 individuals. If we compare this to the primates, the average baboon troop consists of about 40-100 individuals, but troops up to 200 also exist. An average chimpanzee troop also consists of around 40-100 individuals. In the semi-open savanna, the baboons have their habitat and the chimpanzees avoid those environments due to lack of dense enough tree safety.

The Australopithecus, our apelike predecessor, lived in the East and South African forest patches, in group sizes similar to the chimpanzees from 4 million years BP. Homo hunter gatherer groups for two million years lived in groups or clans that were in between 60 and 120. This implies that basic group size and environmental resource pressure was relatively stable for millions of years, until the end of the Upper Paleolithic.

And then it exploded, went into a mode of exponential growth. According to Weisdorf:

the number of humans on the planet 300,000 years ago is estimated to be a total of one million. At the time of the Neolithic Revolution, some 10,000 years ago, there was an estimated 5 million people. At the time of the Roman Empire, roughly 8,000 years later, there were 133 million people worldwide. This implies that the population grew 70 times more rapidly during those 8 millennia than the previous 300,000 years. If we include the 2 millennia taking us to the present day, the average annual growth rate over the past 10,000 years has been more than 123 times that prior to the Neolithic Revolution. (Weisdorf, 2015)

The twenty fold increase of population density of early agrarians compared to hunter gatherers directly indicates the revolution that took place at the genetic boost creative window at the Age of Leo at the end of the Upper Paleolithic and the beginning of the Neolithic. Interestingly, the two regions that were still unoccupied by homo sapiens at the end of the Upper Paleolithic, the arctic zone in the North and the Polynesian Islands far into the Pacific Ocean, which includes New Zeeland, both became occupied after the 'Natuf' or Mesolithic genetic boost creative window.

According to archaeological and linguistic evidence, the Austronesian expansion most likely started about 5.5 kya in Taiwan and continued through the Philippines and other parts of Island Southeast Asia, reaching the Bismarck Archipelago of northern Island Melanesia about 3.4 kya. Here the typical elements of the Lapita cultural complex and the proto-Oceanic language developed and entered Remote Oceania about 3.2 kya, with a rapid spread eastward, leading to the initial occupation of all of Polynesia by about 1 kya. (Wollstein et al., 2010)

The appearance of people associated with the Lapita culture in the South Pacific around 3,000 years ago marked the beginning of the last major human dispersal to unpopulated lands. [...] The first humans to reach Remote Oceania – a term we use to refer to the region unoccupied before approximately 3,000 bp beyond the main Solomon Islands and, in this case, excluding Micronesia – were associated with the Lapita culture, which existed between 3,450-3,250 and 2,700-2,500 bp. These people spread into Remote Oceania using the first boats capable of long-distance sea travel and introduced new domesticated animals and plants, and their successors reached the most isolated islands of the eastern and southern Pacific by 1,000 -700 bp. (Skoglund et al., 2017)

What is not mentioned here is the capacity to navigate, which is as big a barrier as boat technology.

During this window the Proto-Inuit adapted to life in the Arctic zone's, originally in the northern zones of Siberia and from there expanded into the entire arctic region some 5.000 years BP (Slatkin and Racimo, 2016). The Polynesians acquired the navigation skills and the mindset needed for colonization of Polynesia. This indicates that the genetic boost creative window is a global phenomenon, but that the specific contents created by the boosts happen in response to the local context,
whereby context has to understood as a mixture of cultural and natural factors. One single genetic boost creative window might lead to subtle differences in specific very conservative 'mindsets' created during those boosts.

The Polynesian expansion into the Pacific also an poses intriguing question: why didn't they 'discover' Australia? They populated every island in the Pacific, from as small as ... to as big as New Zealand, but they overlooked this huge continent? The genetic information indicates that Australia was colonized only twice during the last 55.000 years, first by the ancestors of the Aboriginals and then by the Europeans a few hundred years ago. Why where there no incursions in between, not even by the ancestors of the Maori? The questions not asked by Paleoanthropologists, about why things didn't happen, are even more intriguing than the questions asked.

Once the 'Natuf' shift of mindset towards agriculture and sedimentary life was realized, improvements on that basis proved incredibly successful. There are subtle indicators that this shift of mindset was definitely connected to a distinctive genetic boost. After the agrarian permanent village lifestyle was established in the Fertile Crescent of the Middle East, it took three to four thousand years for this innovative lifestyle to establish itself in Europe. In the words of researcher Pinhasi:

It is worth noting how slow the rate is on the ground (that is, in terms of a human generation). Although there is a tendency to imagine the spread racing across the map of Europe, it actually took more than 3,000 y (or $100 \text{ human genera$ $tions}$) for the Neolithic transition to reach north-west Europe (Pinhasi et al., 2005).

This innovation spread into Europe genetically, the agriculturalist people moved into Europe (Pinhasi et al., 2005). But they moved in very slow, which indicated that they had to adapt their lifestyle and the farming techniques to the winter climate of Europe. In Europe, they genetically mixed with the Upper Paleolithic Cave-Art people. Pinhasi noted that

many genetic studies tend to support the idea of demic diffusion at some level, but there is still a lack of consensus with regard to the percentage of the contribution of early Near Eastern farmers to the European gene pool (Pinhasi et al., 2005). Eventually, a culture of farming developed in the winter climate zone of Europe. I have the impression that the subtle genetic boosted mindset for a lifestyle in a winter climate mixed with the subtle genetic boosted mindset for an agricultural lifestyle. According to DNA studies, the genetic input of the Fertile Cressent gene pool into Upper Paleolithic gene pool is in between 20% and 60% (Pinhasi et al., 2005). An indicator for this kind of gene mixing process is the fact that once this genetic mixing was accomplished, further innovations from the Middle East followed the cultural dissemination path into Europe. These additional agricultural innovations from then on spread by exchange of ideas and not solely by exchange of genes anymore. As (Pinhasi et al., 2005) explained when comparing genetic or demic (from demos=people) spread with cultural dispersal.

In fact, the slowness of the overall spread and its essentially linear character, as shown by the present analysis, may offer one of the best lines of argument for demic diffusion. Cultural diffusion can, and probably should, go faster. An excellent example is pottery, which appeared after the aceramic Neolithic and spread more rapidly than early farming. (Pinhasi et al., 2005)

To summarize: until the end of the Neolithic, modern homo sapiens innovated in the rhythm of the Great Year. Each major innovation started with a genetic boost creative window around the Age of Leo. The content of the genetic boost innovation was related to local pressures and desires. This was followed by a period of improvement and consolidation of this new technology that peaked at the Age of Aquarius. Modern homo sapiens then remained in a conservative mode for approximately 10.000 years, until the new creative window around the next Age of Leo.

A genetic creative window of 6 to 8 thousand years is followed by approximately twenty thousand years of first expansionist and then by conservative consolidation of the acquired mindset and lifestyle. If we would have continued this pace after the Neolithic revolution, the innovation towards use of metals and living in large cities should have waited for the next Age of Leo, 14.000 years into our future. From the perspective of the innovative rhythm of the Great Year, humanity has become quite manic, which seems an appropriate description for a society in a permanent mode of exponential growth. In todays society, politicians, planners and economists tend to panic if the economy and human activities do not grow every year with two percent to seven percent, implying exponential growth with a doubling time of ten to thirty years. Our 'normality' is unsustainable for another hundred years, let alone for the next thousand years to peak scientific consciousness or for the ten thousand years to the start of the next genetic boost creative window.

But modern (wo)man urgently needs the next genetic boost creative window in order to match our genetic makeup with our live-style again. Unfortunately, we have to wait for the upcoming Age of Leo for this really urgent period of genetic maintenance based upon body-soul immanence. My diagnosis is that we urgently need a genetic fix, effecting us socially and psychologically, and the astrological prediction is that this fix won't begin for another ten thousand years.

The fact that humanity managed the move from villages to cities to mega-cities in a single Great Year is simply amazing, mind-blowing. The modern mind is stunned by the conservatism of paleolithic culture and astonished by the observation that technical styles and/or artistic preferences of craftsmen remained the same over tens of thousands of years. We live in an exponential era ourselves, a time where everything grows and changes in an exponential rhythm. In a decade's time, many things in our world can change drastically. How can we imagine a world where cave art remained essentially the same for 20.000 years? A world in which the Great Year of 26.000 solar cycles dictated the speed of change, on artistic as well as technological levels? We should realize that genetically, we have a mindset and lifestyle adapted to the rhythm of the Great Year. The modern lifestyle is the out of the ordinary. An experiment without precedent. Humanity has become a run out of control organism, literally scorching the surface of the earth, transforming the entire biosphere, thus initiating the Anthropocene.

In this context I would turn around the question magnificently formulated by Renfrew: Why did it all take so long? If the sapient phase of human evolution was accomplished some 60,000 years ago, why did it take a further 50,000 years for these sapient humans to get their act together and transform the world? That is the sapient paradox (Renfrew, 2008). I propose to turn it around and ask the intriguing question: How on earth did it go so fast?' How did we realize all of this in less than half a Great Year? How did humanity get into this exponential mode and thus run out of control? And then there is the more urgent challenge: How do we get back into the innovative rhythm of the Great Year? How do we get back from exponential to sustainable growth and then into a steady pace again in order to manage to survive the second half of our Great Year? How can we, as humanity, survive our present agri-industrial explosion until the next Age of Leo, where women might infuse a genetic fix? Will Anthropos survive the Anthropocene, our present Great Year, and arrive at the next genetic boost creative window where women might find a transhuman fix and initiate the Transanthropocene during the Great Year from 14.000 to 40.000 years in the future?

Chapter 5

Gendered Darwinism

Neodarwinism is firmly rooted in the male biased gender perception of classical philosophy, from Aristotle to Kant and beyond, the humanist tradition. The theologies rooted in the still existing God Religions of the Fertile Crescent and its periphery, Judaism, Christianity and Islam, share this biased gender conception with philosophy. It uses dualisms as active-passive, mind-body, 'res cogitan' - 'res extensa', master-slave, to structure the male-female social and psychological organization. Neodarwinist's idea of life as a product of 'random mutations' and 'natural selection' follows an identical gendered dualism.

'Random mutations' are workings in and of matter and act without any intelligence, but are nevertheless hypothesized to create the genetic code of every (new) species. It is the prototype of mindless matter at work. In classical dualism, this is the feminine role. In contrast to this, 'natural selection' basically is the pastoral warrior's smart way to act. In the literature of for example sociobiology or evolutionary psychology, 'natural selection' at work is all about strategies carried out in order to be the fittest and sexually the most reproductive. Those living beings who acquired an interesting 'random mutation', but live and act without a keen strategy, die out and the others survive in a winner takes all narrative. This 'survival of the fittest' narrative is as if intelligently designed for maximum male identification. In the words of feminist philosopher Grozs:

In shorthand, Darwin's is a theory of 'winners and losers', of the dominating and those who have succumbed to domination or extinction, a theory that, on the face of it, seems to provide a perfect justification for the relations of phallocentric and racial domination that constituted Eurocentric, patriarchal culture in his time as much as in ours. (Grosz, 1999)

The model of 'random mutations' and 'natural selection' follows the passive-active dualism, which inherently and unconsciously projects it on the female-male gender roles. But due to the biochemical and biophysical nature of 'random mutations', no women on earth can identify with this 'feminine' part of Neodarwinism. And 'survival of the fittest' clearly is a male narrative, unsuited for the traditional female role. In my view, this puts the following observation of Grosz regarding the attitude of feminists towards Darwin in perspective:

It seems remarkable that feminists have been so reluctant to explore the theoretical structure and details of one of the most influential and profound theoretical figures of the modern era, Charles Darwin. For the last two decades or more, there has been an increasingly widening circle of male texts that have enthralled and preoccupied the work of many feminist theorists: Hegel, Nietzsche, Spinoza, Heidegger, Derrida, Lacan and Deleuze are just some of the more recent and philosophically oriented additions to this ever-expanding pantheon. This makes the virtual ignorance and neglect of Darwin's work even more stark and noticeable. It is not clear why Darwin – whose enduring impact on knowledge and politics is at least as strong as that of Hegel, Marx or Freud – has been left out of feminist readings. (Grosz, 1999)

In my opinion, this is because even the traditional feminine role has been written out of the passive part of the dualism of Neodarwinism. Attempts to repair or criticize Neodarwinism from a feminist perspective do exist, see (Vandermassen, 2005). Such attempts remain within the 'random mutations' and 'natural selection' premises and they all leave the 'random mutations' part untouched, see for example the already quoted Grosz. And according to Grosz, *it is significant that the bulk of feminist literature on Darwinism is devoted to a discussion, usu*ally a critique, of Darwin's account of sexual selection (Grosz, 1999), with sexual selection as a (sub-)branch of 'natural selection'. What feminist then do for example is add sexual partner selection narratives from the female's perspective to the reproductive aspect of 'natural selection'. This is a useful addition to the Neodarwinist narrative. Natural selection may be originally designed for and by male scientists, on itself it is a phenomenon in nature in which both sexes are involved beyond humanist active-passive dualism schemes. But what is lacking is a critique of 'random mutations' part of the Neodarwinist scheme. Astrological Darwinism is just that, a critical rejection of 'random mutations' *as being the sole creative input on the genetics level* of Neodarwinism, replacing it by hypothesis of the 'chosen mutation' as being the creative part on the genetics level of Astrological Darwinism.

'Chosen mutations', is one of the two central principles of Astrological Darwinism, natural selection being the other. 'Chosen mutations' is a highly gendered concept, on multiple levels. First of all, the combination of 'chosen mutations' and 'natural selection' of Astrological Darwinism can also be projected upon the feminine-masculine gender pattern. The 'chosen mutation' part of Astrological Darwinism is connected to the fertility tradition of the Cult of the Goddess Figurines. It can also be interpreted as a Pro-Choice Darwinism, where the women decide over their own body and that of their offspring, but now even on a genetic level; no man gets involved other than for sex and hunter gatherer clan safety. The 'chosen mutations' part can also be imagined in the line of the midwife-witch-magica tradition. The midwife-magica, as the feminine form of the figure of the shaman, had, as a gatherer for two million years, piled up an impressive know how and practice of herbs and natural medicines. She helped women of the clan with births and abortions and other health issues. Due to these abortions, she was labeled a witch and prosecuted when men took control over female fertility in the last millennia.

As part of a duality, 'chosen mutations' is the feminine biased part of the two, with 'natural selection' as the masculine biased part. As the 'natural selections' part of Astrological Darwinism integrates or copies Neodarwinism, all feminist critique relevant for Neodarwinism's 'natural selection' narratives will be directly applicable to Astrological Darwinism. Together with the feminine biased 'chosen mutations' part as all about fertility, Astrological Darwinism is rather traditional from the gender perspective, see for example Fig.23. Thus, Astrological Darwinism isn't a 'pro'-feminist narrative, but it is a highly gendered paradigm suitable for feminist critique and deconstruction. But it doesn't fit the classical dualisms of passive versus active, body and mind, proposing an embodied neo-vitalism instead and from that perspective, Astrological Darwinism it is Posthumanist.

The practice of 'chosen mutations' fuses nature and consciousness, embodies the 'élan vital' around the Age of Leo. It's creative agency is not based upon dualism and transcendence but on unity and immanence. The active agent is the enchanted female, or a matrilinear chain of enchanted women through several millennia. In the Age of Leo, the 'life water' or 'élan vital' infuses the material body and the material mind , rendering matter opac and objective scientific analysis impossible. The female role according to the 'chosen mutations' paradigm is nothing less than choosing and designing humanities future on the genetic, heredity level around the Age of Leo, realizing astrological or magical transhumanism. These periods of genetic boosts creative windows, with women as the active agents, are the true initiators of whole new developments in human evolution, realizing the only effective form of transhumanism, in the sense of going beyond the already genetically inscribed.

Matrilinear chain of enchanted women made symbolism possible in an environment without symbols. They initiated use of boat technology in a time where fish could only be caught from on shore. Their creativity resulted in magnificent cave art, the appearance of the first rock drawings and statue carvings. The magicas gave us the agricultural and permanent village dwelling mindset. Women gave humanity language, philosophy and science. From humanities creative perspective, the Age of Leo is a women's era. The Age of Leo relates to the Age of Aquarius as trans-human relates to trans-techno. Technology will never be able to create transhumans, only individually embodied 'élan vital' can, feminine 'élan vital'. Our phase in the present cycle is one of exponential transtechnology, mainly masculine and transcendentally driven.

But the male bias of our times seems an overreaction, an abnormality in human evolution. During the Age of Aquarius in the Upper Paleolithic, the cult of the Goddess figurines continued with a staggering conservatism. The hunter gatherer lifestyle and economy simply could not afford to suppress women in the way the pastoral and city economies have become accustomed to. The men couldn't survive without the gatherer's food collection skills. Given humanities conservatism throughout its history spanning many Great Years, the suppression of women according to the pattern of the master-slave dualism is probably a side-effect of the Post-Neolithic revolution. It cannot be older than a few millennia and therefore must be a post genetic boost event. A phenotype based practice without roots in our genotype. It may even be a distortion as part of the manic and overpopulation phase humanity got itself into these last millennia. Disenchantment as a natural process of the Cycle of Life turned into disembodiment and ended in a distorted dispossession of women. Disenchantment degenerated into enslavement.

Apart from our present era's manic gender dualism, a certain cyclic variation of gender throughout the Great Year can be expected. This moderate cyclic gender progression can be illustrated by projecting (gendered) meaning onto the images of the Dendera Zodiac disk. Just before Leo, the sign of Virgin is depicted as a woman offering a fresh bouquet of flowers. See Fig. 24, left. Then, in Leo, the woman is pregnant as part of the genetic boost Pro-Choice creativity. Five signs further, in our age of Pisces, the double sign depicts the same woman, but now in a bubble 'below the lower fish, with the flowers, indicating her magical powers, in decay, disenchanted, disembodied. The upper fish has an Egyptian eye in his bubble, the symbol of science and division calculus (West, 1978, p. 71).

The same woman that was the one and only center of her Age of Virgin, the same one that gave a pregnant direction to humanity in the Age of Leo, this young woman's magic is now in decay and subdued to science and the dividing power of the eye. Culturally, this is roughly what happened in the last 12.000 years. In the region of the Fertile Crescent, the Upper Paleolithic Cult of the home-based Goddess figurines developed into a Temple Cult of the Goddess, which temples were then taken over by the Cults of the God, which in turn has been overruled by science, kind of. The Age of Leo can be characterized as Peak Magic and the Age of Aquarius as Peak Science, see Fig. 25.

Astrological Darwinism is gendered Darwinism on multiple levels. It portraits Neodarwinism as an all-male perspective. But Astrological Darwinism is not just about deconstruction of the Neodarwinist gender-biased approach, it analysis Neodarwinism also as being part of the Cycle of Life, as one of the possible incorporation of the Eye in the sign of Pisces. The eye as contrasting the former virgin with the decaying flowers in Pisces, symbol of the gain of male objectivity and the loss of the genetic boost female capacity, the feminine magic. To put the development from Leo to Pisces in just few words, the Cult of the Goddess has been replaced by the Cult of Science, with the Religions of the God as the intermediate practice. A development from magica to priestess to priest to professor. The Cult of the Goddess Figurines had its roots in the immanence of the soul, its embodiment, and its practice in the genetic boost creative window. The Cult of Science has its roots in the transcendence of the soul, its disembodiment, and its practice in its useful technical applications. The Religions of the God are a mere transformation from the Age of Leo to the Age of Aquarius, one possible cultural expression of the natural motion away from the 'magic' of the Goddess/Beyng towards 'objectivity' of Science/Being, from magical action towards rational thinking.

When the Cult of the Goddess was repressed by the organizers of the Religions of the God and their predecessors, female priestesses were put out of work in favor of an all male priesthood. Part of this repression and replacement was about control over female fertility. In Western Europe, this repression took place during the witch hunts at the end of the Medieval and the beginning of the Renaissance, when midwives, as presumed witches, were replaced by male doctors, men of medicine, educated at the newly established universities. In the beginning, the knowledge of these men was in no way better, and usually worse, than the medical wisdom of the ancient tradition of the midwives. But this replacement wasn't about expertise regarding childbirth and the patients health, it was about control over female fertility. Men took over control, for the first time in the almost two hundred thousand years of the evolution of modern homo sapiens.

Science itself is not gendered, however. The eye in the sign of Pisces isn't a male eye, its a symbolized human eye, male as well as female. But in its history as competing with and partially replacing the Cults of the God, in which women were already put on the sideline, science started as a male dominated activity. It is only in the last fifty years that this is being repaired in the West, in such a way that within a generation the study of medicine in general and female fertility in special, will again be a female dominated activity in the near future. But the expansionist drive of homo sapiens in the Age of Aquarius part of the Great Years is a masculine dominated, survival of the fittest activity. The taking control of female fertility was part of the present Great Year expansionist competition, an unicum in the evolution of humanity. As such it is probably part of the manic phase humanity got into since the Neolithicum Revolution, caused by the unpredictable and unprecedented success that has occurred since the last genetic boost creative window. A success that seems on a path towards its own downfall, because due to its immense achievements it is starting the Anthropocene.

Astrological Darwinism predicts a cyclic move from 'magic' centering around the female perspective in the Age of Leo towards 'science' as more of a male thing or development in the Age of Aquarius, and then forward again towards the new era of 'magic'. The 'mechanism' behind this periodical cultural shift is the soul as 'élan vital' or 'Beyng' going from immanent/active to transcendent/forgotten and back. The 'mechanism' itself is gender neutral, prior to gender, but its manifestation in human life isn't. In biology, giving birth is a female perogative and the therefore more dispensible, less valuable male has the primary role of defence/offence relative to preditors/prey. Astrological Darwinism, being part of biology, remains highly gendered Darwinism.

Gendered Darwinism also implies a gendered Posthumanism and a gendered New Age revival in the form of Third Wave New Age Philosophy. The first wave of New Age thinking has its roots in the Theosophic movement around nineteen hundred, somewhere from 1870 to 1910. The second wave of New Age thinking was triggered by the hippie movement from the 1960's and slowly faded during the 1990's. Magical Darwinism can be located at the beginning of the Third Wave of New Age thinking. The Third Wave New Age Philosophy first and foremost reconnects to science again, while retaining full recognition of its magical roots. Atlantis, Lemuria and Mu, those mythical origins of humanities culture and wisdom were First Wave New Age products that in their core originated in scientific hypothesis and theory. But were science moved on, New Age got stuck in its 'eternal truths' and its 'archaic archives' with as a result that the Second Wave New Age became disconnected from science. The Third Wave New Age Philosophy is reconnecting New Age to science again.

In Third Wave New Age Philosophy, Atlantis, Lemuria and Mu aren't needed because science provides us with enough explanation of human origins. The writings of different cultures around the world all evolved from the early symbols of the pre Upper Paleolithic Africans, the predispersal tribes in the core region of homo sapiens sapiens. See Fig. 26. These early writings can be compared to the use of symbols in cave art. The style of the earliest cave art symbols, many dating back 25.000 years, resembles the style of many symbols used in Proto-Cuniform writing. A period of 20.000 years in between both, including an Age of Leo, gives enough time for development from isolated symbols towards collections of symbols with additional meaning related to the connection of placing them together in a box. Ancient Aliens from outer space aren't needed as an hypothesis, and neither is an Atlantis, Lemuria or Mu. The earliest cave art symbols are found in the America's as well, and would be at the basis of the writings of the Mesoamerican cultures of the Oltec and Maya.

Third Wave New Age philosophy traces humanity back to the preexpansion, core region in Africa, some 100.000 years BP (Slatkin and Racimo, 2016). There is no need for an Atlantis, a Lemuria or Mu in order to explain the similarities between the first civilizations. The alteration of feminine magic and masculine expansion explains more than enough. All the mysterious revolutions of the distant past can be understood as feminine active genetic ingenuity during windows of Magical Darwinism, of genetic boosts creative windows, around the successive Ages of Leo. Of course, most New Age thinkers and Transhumanism SF writers prefer the Ancient Space Alien hypothesis above the 'women did it', on their own initiative and based on their intrinsic capacities, hypothesis.

The pyramids, as formidable stone monuments as they are, could only be constructed after women cultivated the basic crops from local wild varieties and thus laid the foundation for surplus collection of food, leading to the realization of large scale food storage. Olmec, Maya and Aztec pyramids may look similar to Egyptian pyramids, the staple foods eaten by the workers and thereby making those constructions possible, weren't similar at all. Nor did those staple foods originate from a common earlier Golden Civilization, as an Atlantis, or from some Ancient Aliens from outer space. Women were gatherers at least since the appearance of Homo Erectus some million years ago and all grandiose early civilizations of the Neolithic were made possible by their plant breeding skills applied to local plants as maize, potatoes, wheat and rice.

DNA evidence traces those staple foods back to local varieties. There was no staple food connection between the early Neolithic civilizations of Eurasia on the one hand and the America's on the other hand. The

pyramids and all other impressive stone monuments were designed by architects and build by workers who were fed by those local staple foods. The square and the triangle of pyramide geometry were already part of the early symbolism of pre-expansion homo sapiens sapiens in Africa. The first evidence of sculptures in rock date back at least 30.000 years. Instead of Atlantians, Lemurians or Ancient Aliens, the independent and creative activities of women can explain the 'unexplainable' of the sudden rise of civilizations in the Early Neolithic. But magic was involved, feminine magic, realizing Trans-Neanderthal modern (wo)man. That same magic will return when the Cycle of Life once again moves from Aquarius towards Leo, making Magical Transhumanism possible 14.000 years into our future. In that part of the Cycle of Life, after Peak Science, the disenchantment of the last 7.000 years will be reversed into re-enchantment.

Chapter 6

Developing a Grand Narrative

Using the symbol of the eye of horus as representing Peak Science at the Age of Aquarius and the symbol of the pregnant woman shooting the arrow from her womb into the future as representing Peak Magic at the Age of Leo, the succession of Great Years can be presented in a symbolic timeline. In Fig. 27, the Upper Paleolithic Great Year and the Neolithic Revolution are represented in such a way. A specific barrier is the challenge for the genetic boost creative window around Peak Magic and the Age of Leo, a creative window of roughly six to eight thousand years with three to four thousand years before and after the peak. The feminine genetic boost creates new capacities and mindsets, with which the barrier might be overcome around Peak Science, around the Age of Aquarius.

The expansion that results from overcoming an existing barrier creates its own specific new problems, resulting in the subsequent discovery of, confrontation with, a new barrier. Several examples can be given. Learning how to fish with polished pointed spears in the swallow shorelines of lakes, rivers and beaches lead to the development of barbed points and harpoons. Many fish were still capable to escape into deep waters, where the fisher(wo)men couldn't follow. This confrontation with the deep water barrier and the food treasures in it lead to the boat Great Year and the crossing of the Wallace Line. To venture into deep water with self made boats involves both a technological boost and a change of mind set needed to overcome the innate fear of the deep waters.

Another example is the migration out of Africa and into Eurasia. This lead to the confrontation with the winterzone barrier, which caused a near 50 thousand years arrest of the northern expansion of modern (wo)man. The genetic boost creative window around the Age of Leo of 38 yk BP somehow coincided with mating with the remaining Neanderthal populations, thus picking up and integrating the genes needed for this northern climate. The mindset to share genes with the Neanderthal instead of just replacing them in a hunter-warrior style seems key to the further northern expansion. In principle, this could have already occurred around 100 - 90 ky BP in the Levant area and then already should have resulted into an early expansion into the winterzone, but it didn't for another 50 ky.

Every new expansion resulted in the discovery of a new barrier. Halted that way after Peak Science, stagnation set in but at the same time re-enchantment began. Re-enchantment towards the next Peak Magic then re-opened the next genetic boost creative window, during which a new barrier might be confronted on the genetic level of feminine magic instead of on the static technological level of instrumental know-how. At the end of the Upper Paleolithic, the main barrier for humanities development was that of low food density. Low food density implied that large land areas were needed to sustain the average clan size of about 150 people. The move from gathering to agriculture solved that problem and lead to the development of cities, which then triggered the Industrial Revolution.

The Cycle of Life, perceivable positively as Great Years and negatively as 'sapient paradoxes', follows this pattern of present barrier genetic level innovation - expansion - new barrier - genetic level innovation - and so forth. In Fig. 28, an integrated timeline of Astrological Darwinism, with all the Great Years of the relevant past and future is given. The timeline is focused on Ages of Leo and the accompanying Peak Magic with its genetic boost creative windows. The Eye of Horus represents Peak Science at the Age of Aquarius.

Because of the recurrent genetic boosts, two preconceptions leading to the 'sapient paradox' seem solved. The basic preconception leading to the 'sapient paradox is the concept of 'creative random mutations' as the only force that can drive genetic variability and thus genetic innovations. Because of this Neodarwinist axiom, creative genetic innovation can only be very slow and very steady. Discontinuous leaps, and then also cyclic, doesn't fit into the paradigm of Neodarwinism. From this results the preconception that modern (wo)man was fully anatomically ready for at least sixty thousand years. In the paradigm of Astrological Darwinism, modern (wo)man still (produced) underwent two subtle genetic boosts since (s)he entered Australia, leading to the winterzone expansion and to the agrarian revolution, amongst others.

Because Neodarwinism only focuses on Peak Science moments, its paradigmatic constraints leads to an unresolvable cyclic recurring of the 'sapient paradox' in todays paleoanthropology. The Neodarwinist hypothesis of slow and steady pace 'random mutations' as the only possible creative input on the genetic level will never be able to solve those 'sapient paradoxes', the paradigm they cling to produces them. Neodarwinism will never be able to accept the magic of 'choosen mutations' as a part of its scientific repertoire. For Neodarwinist dis-enchantment can only be a one way progressive road towards perfection. The dynamics of the cycle of progressive dis-enchantment and as progressive re-enchantment seems scientifically on-acceptable as long as dis-enchantment is considered as the only thing in town. The perspective that re-enchantment, as the return of 'élan vital'/Beyng/Artemis/Aletheia/phusis, could exist and be progressive and not retrogressive, is absent in todays Peak Science driven Grand Narratives.

In subsequent volumes, of the Astrological Posthumanism Series, I will address: the issue of 'creative choosen mutation' versus 'creative random mutations' on the level of quantum biology and quantum gravity biology (also introducing Quantum Gravity Astrology); the issue of dis-enchantment and re-enchantment on the philosophical level of Bergson's 'élan vital' and Heidegger's Beyng, thus interpreting the Cycle of Life as the Cycle of Beyng; the issue of renewing New Age thinking, beyond the Blavatski/Steiner, the Lost Continents and the Ancient Aliens mindsets; the issue of techno-cyber-geneticTranshumanism versus Magical Darwinism.

For this first introductory volume, the issue of the 'sapient paradox', insofar as it is related to the insufficiency of Neodarwinism, will do. Scientists and philosophers are trying to find solutions for this paradox. I quote Renfrew in an earlier version of his formulation of this paradox, including the solution he proposes: It would seem then that the arrival of our species over much of the surface of the globe did not produce any very remarkable consequences for several tens of millennia. This then is the paradox. If human societies of the early Upper Palaeolithic period had this new capacity for innovation and creativity which notionally accompanies our species, why do we not hear more about them? [...] The true human revolution came only much later than the emergence of the species, with the development of a way of life which permitted a much greater engagement between the human animal and the world in which we live. Human culture became more substantive, more material. We came to use the world in new ways, and became involved in new ways. The trigger for this new embodiment, this new materialization, may have been sedentism. (Renfrew, 2001)

So sedentism produced the Neolithic Revolution and the subsequent agriindustrial developments. But sedentism will not do to explain the Upper Palaeolithic Revolution, the sudden appearance of cave art, neither the Boat Revolution that allowed the colonization of Australia. And in the Fertile Crescent, sedentism based on gathering of wild wheat predated active farming by at least 10.000 years (Snir et al., 2015). The systematic gathering, storing and processing of wild wheat made sedentism possible. After Peak Leo, the combination of systematic gathering and sedentism evolved towards farming, which in turn increased population density and village size. But it took ten thousand years of both to make the step towards farming, at least in the Fertile Crescent region. Regarding the solution to the 'sapient paradox', Renfrew claimed that:

[...] while food production is a concomitant of much sedentary life, it is not so much food production as sedentism on a stable and enduring basis which is the revolutionary component of the 'Neolithic Revolution'. (Renfrew, 2001)

But why then didn't sedentism based upon systematic gathering immediately result in the Neolithic Revolution around 23 ky BP, if, according to Renfrew, sedentism was the trigger? What is the difference between sedentism based upon systematic gathering and sedentism based upon farming? In the end, Renfrew returns to 'mind' as the distinctive feature separating civilized humanity from archaic humanity.

And I would go so far as to claim that the development of such notions as measurement (and of units of measure) and as equivalence in an exchange transaction are important components of 'mind', seen as something which develops with the human story rather than emerging full-grown with the formation of our species. (Renfrew, 2001)

Distinctively human thus means being an rational animal, in the Aristotelian sense. In the Cycle of Life, the notion of measurement and division can be symbolized by the Eye of Horus, as the Egyptian symbol containing the binary fractures of $\frac{1}{2}$, $\frac{1}{4}$, up to to $\frac{1}{32}$. As such, in Astrological Darwinism dualistic 'mind' in the sense of measurement and division as opposed to and working on a material world isn't distinctively human. The development of 'mind' after the Neolithic Revolution doesn't solve any of the 'sapient paradoxes'.

In Astrological Darwinism, 'magic' can be viewed as the opposite of 'mind', but also as beyond the 'mind-matter' dichotomy Renfrew refers to. Astrological Darwinism's Peak Magic is interpreted as the fusion of 'mind-matter' through the working of the 'élan vital' or Beyng, through the re-enchantment of the 'mind-matter' pair by the going immanent again of the 'élan vital' or Beyng. 'Choosen mutations' as magical actions are willful actions of feminine genetic creativity during the Ages of Leo, fusing mind and matter through individuated droplets of Beyng and creating the next local and diverse evolutionary leap of humanity.

To look at 'mind', seen as something which develops with the human story is looking at one half of the human story, at one half of the Grand Narrative developed in this book. The other half is 'magic', seen as something which also develops with the human story. The Cycle of Life, the Great Year of the Zodiac, moves from Peak Science at the Age of Aquarius to Peak Magic at the Age of Leo and then again to the next Peak Science at the following Age of Aquarius. Dis-enchantment will inevitably be followed by re-enchantment, both as progressive developments forward into the future.

At present, two new future barriers are looming, that of sustainability and that of deep space. Both revolve around the limitation of living on a single spherical planet, the Earth. Expanding into the galaxy is one of the possible challenges. Making the high density of humans on this planet sustainable/durable is another possible challenge. Repairing male hubris might be added to the two, but that should automatically be achieved during re-enchantment. For last hundred thousand years of homo sapiens sapiens, subsequent expansion and stagnation have been his normal cyclic mode. Sometimes population collapse happened, but never permanent. Today, we may only hope that stagnation of the human population will be enough to resolve the sustainability issues regarding the limited resources of our planet. The danger of a substantial collapse of the human population from seven billion back to less than a billion is a real threat.

Science Fiction narratives connecting humanity to deep space, either as our roots or as a possible future, show us how newly discovered barriers at or after Peak Science and the Age of Aquarius work on humans. In the past, deep water had the same meaning as deep space today. The promise of undreamed of resources and possible far away lands. In subsequent Great Years, all the deep water barriers on earth have been overcome. First on lakes and rivers and on the shorelines of the oceans. Then we were able to follow migrating birds by island hopping on distances of many tens of miles. Finally the Melanesians succeeded to explore the deep waters of the Pacific and to colonize every habitable island in it. The Europeans then repeated that achievement with a five thousand year difference, on a higher technological level and therefore less impressive and less durable.

If we consider the rhythm of the Great Years, it would be hubris to think that the deep space barrier can be overcome SF-like in a few hundred years. The genetic and technological barriers are just too immense. The deep water barrier, from the start of fishing on shorelines to navigating the Pacific, took a hundred thousand years, thus four Great Years, to overcome. In my opinion, it would be wise to focus on sustainability on this planet using present day capacities and to leave the deep space dream to feminine magic to figure out in future Ages of Leo.

Appendices

Figures



Figure 1: The motion of the spring equinox as guiding the Cycle of Life. It is the holistic locking onto the precession of the equinoxes of the "élan vital" or life water of the soul. The Age of Leo coincides with the immanence maximum, the peak of the Goddess Principle. The Age of Aquarius is the peak of transcendence, producing the temporary exclusive reign of the Neodarwinist principles. The spring equinox, indicated by the big dot inbetween Pisces and Aquarius, is now moving into the Age of Aquarius.



Figure 2: The entrance of the temple at Denderah at the beginning of the nineteenth century. (Commission des sciences et arts d'Egypte, 1817, Planche 7).



Figure 3: The Zodiac of Dendera, as part of the ceiling when it was still in the temple in Egypt. Drawing by Jollois and Villiers in (Commission des sciences et arts d'Egypte, 1817, Planche 21). Click here to back to text.



Figure 4: The Zodiac of Dendera, incomplete new drawing for this book. I first encountered this zodiac in (West, 1978), then in (Schwaller de Lubicz, 1961, p. 178). This version is drawn using various sources, as for example the drawing of Jollois and Villiers in (Commission des sciences et arts d'Egypte, 1817, Planche 21), (Jomard, 1822a,b) and (Jollois and de Villiers du Terrage, 1817). The style was mainly determined through the use of vector drawing software.



Figure 5: Details from the Zodiac of Dendera. Trapped souls at peak dualism in the Age of Aquarius and a pregnant female shooting an arrow from her womb into the future at peak immanence in the Age of Leo. The two key moments in Astrological Darwinism, also the triggers of the paradigm. In (Jollois and de Villiers du Terrage, 1817) the figures in the bubble are interpreted as sacrifices to Hapi, the god of the Nile, in order to bring back its fertile flooding. Historically, Jollios is probably correct and this reflects the fact that the Zodiac triggered my imagination without necessarily incorporating it. I actively project my own Grand Narrative Hypothesis onto the Zodiac's images.

Click here to back to text.



Figure 6: The arrow is directed by the pregnant woman at the symbol of 'human seeds beginning to sprout', right under the sign of Aries. Next to it, the infant Horus on a papyrus.



Figure 7: Timeline inspired by Constance Tippett's 'Timeline of the Goddess'. The scale of the timeline is in thousands of years, the negative years are before present (BP). Tippett's poster ordering webpage link. Not visible in this timeline, the last 3.000 years, the cult of the goddess figurines has been increasingly suppressed and the connected control of feminine fertility taken over by men. Parallel to this suppression, the feminine expression has been replaced by masculine objectification of the female figure, under the banner of the Platonic category of the Beautiful. On the scale of the Great Years, this suppression of feminine self-expression will, hopefully, prove to be a temporary aberration. (Add Cybele at Catal Huluk and Madrid?)



Figure 8: The cycle of the Great Year projected upon the timeline of the Goddess, inspired by Constance Tippett's poster. At peak immanence, imaging the goddess/female creative fertility is at its lowest. Perhaps because living it supersedes imagining, around the peak of the Age of Leo. When feminine magic fades and disenchantment rolls in, imagining the goddess/female fertility peaks. At least, when not actively suppressed by males as it is has been for at least 2.000 years now. Relevant for my hypothesis is the observation that the Upper Paleolithic cult(ure) of the female figurines coincides with one Great Year. In the Neolithic Great Year, a new cult(ure) evolves, simultaneously continuing and transforming the old cult(ure).



Figure 9: Four Great Years from 220 to 116 ky BP (1 ky BP = 1000 years Before Present). A map depicting the core center of modern homo sapiens sapiens, from which we dispersed over the world from 116 ky BP onwards, integrating some and replacing other existing branches of the homo species, in Africa and Eurasia. During this time, Archaic Homo Sapiens was present in most of Africa and discontinuously also in the Levant. Also on the map are the main barriers blocking future expansion. The tropical and subtropical land-zones are the natural habitat for homo sapiens sapiens; barriers are the winterzone, the Wallace Line and the Pacific. The only reason the Bering Strait is a barrier for entering the America's is because it is that far north, nearing the formidable arctic zone barrier. As a sea barrier, the Bering Strait is far less impressive than the Wallace Line and it even turns into a land corridor during the peaks of the ice ages, making it a continuous extension of the Eurasian biotope called Beringia (Hoffecker et al., 2016). The Neanderthals never entered the America's, indicating that they never wandered that far north during the hundreds of thousands of years they lived on the immense Eurasian plains. Modern humans probably were not present in Northern Asia before 50,000 years ago, and other forms of Homo, including Neandertals and Denisovans, do not appear to have occupied any places above latitude 60 degrees N (Hoffecker et al., 2016). The Denisovans, an Eastern offshoot of the Neanderthal, didn't cross the Wallace Line, indicating that they never had advanced boat technology.



Figure 10: The Great Year from 116 to 90 ky BP, peak at 103 ky BP. A map depicting the first expansion of modern homo sapiens sapiens, into Southern Africa. around 110.000 years ago, while partially merging with existing archaic homo sapiens in that region. This is the first Great Year with clear archeological evidence of systematic fishing. Around the peak of this Great Year, the use of barbed points, bone tools and incised notational pieces are being used (Mcbrearty and Brooks, 2000).



Figure 11: The Great Year from 90 to 64 ky BP, peak at 77 ky BP. A map depicting the second expansion of modern homo sapiens sapiens, into Northern Africa and the Levant. Notice how the winterzone climate barrier keeps them out of Neanderthal territory. Eventually, the Sahara became the (non-strict) dividing zone between two sub-branches of homo sapiens sapiens, indicating that sub-Sahara migratory exchange had a substantial higher intensity and frequency than cross-Sahara migratory exchange, both being inside the Africa-Levant region. Around the peak if this Great Year, ostrich egg water bottle decorative symbolism flourished, along with decorative beads and microlith precision tools(Mcbrearty and Brooks, 2000).



Figure 12: The Great Year from 64 to 38 ky BP, peak at 51 ky BP. A map depicting the third expansion of modern homo sapiens sapiens, into Australia along the southern arc route (Balme et al., 2009). The Out of Africa coastal boat expansion started around peak Leo, the Wallace Line was crossed around peak Aquarius. So not long after peak magic, a new capacity appears around 64.000 years ago and some 13.000 years later around peak science around 51.000 years ago this new capacity achieves its greatest feat. Notice that modern (wo)man reached Australia more than 10.000 years before establishing himself in Europe, although he already was in the Magreb and the Levant all that time. So modern (wo)man managed to cross the Wallace Line, around 53.000 years BP but the Strait of Gibraltar was too difficult to cross for another 10.000 years? The only explanation for this is understanding of the winterzone as a real barrier for (sub)tropical modern (wo)man. During the re-enchantment phase of this Great Year, from 45 ky BP onward, towards the new Age of Leo around 38 ky BP, mixing with the Neanderthals already took place (Hublin, 2015), thus preparing the next Great Year. The new technologies that allowed modern (wo)man to colonize Australia also got distributed over all over Africa and the Middle East. In the second part of this Great Year, modern (wo)man also slowly seeped into the (sub)tropical southern parts of East Asia.



Figure 13: The Great Year from 38 to 12 ky BP, peak at 25 ky BP. A map depicting the fourth expansion of modern homo sapiens sapiens, into the winterzone and the America's. The winterzone was entered around 42.000 years ago, around peak Leo. The north of Siberia was settled around 25.000 years ago, around peak Aquarius, and not long thereafter the Bering Strait barrier was crossed, somewhere between 25.000 BP and 20.000 BP (Bourgeon et al., 2017). It seems that settling that far north was the real barrier for entering the America's. Once modern (wo)man managed to survive permanently in that northern zone, going east and west on the same latitude wasn't that difficult. From there on, the Bering Strait wasn't a big thing, especially at a time where sea levels were so low that it probably was a dry steppe extension of Siberia, called Beringia (Tamm et al., 2007). Genetic data, which now are available in large quantities, indicate that Native Americans are derived from a relatively large and diverse subset of the modern humans who colonized northern Eurasia before the LGM (Hoffecker et al., 2016). Once on the other side of the Bering Strait, going south meant going into area's that were the more hospitable for modern (wo)man the more south he went. Because of this the expansion from the Bering Strait into the Americas could have progressed very rapidly.



Figure 14: The Great Year from 12 ky BP to 14 ky AP, peak at 1 ky AP. A map depicting the fifth expansion of modern homo sapiens sapiens, into the Pacific and the Arctic zone. But, most importantly, establishing agriculture and thus crossing the hunter gatherer population density barrier. It seems that besides boat technology and navigation skills, agriculture was a key issue for settling the pacific islands, because most of them were too small for a thriving hunder and gatherer existence. The other intriguing issue is the fact that the Melanesians discovered New Zealand, but didn't rediscover Australia. The only reasonable explanation for that is that they did discover it, but couldn't colonize it because the Australian aboriginals kept them out. That then indicates that the Australian aboriginals were advanced and organized enough to keep the small numbers of Melanesians explorers out, but that they weren't advanced enough to venture into the pacific for themselves and discover New Zealand themselves. It seems quite impossible to be able to discover every habitable land between New Zealand and Eastern Island and at the same time not being able to discover Australia. As for agriculture, not long after peak magic in the Age of Leo, 12.000 years BP, the move towards agriculture is made interdependently at four different places in the world. At present, we are about to enter the Age of Aquarius, thus around peak science and the maximum expansion of the agri-industrial technology.



Figure 15: DNA evidence that modern humans first made it into the northern zones in Eurasia and only then managed to enter the America's through the Bering Sea or the Beringia steppe. This map shows the Siberian connection. Similar evidence exists for the Solutrean connection through the Atlantic Ocean: first expansion into northern zones of Europe and then into the America's, using the glacial ice shelves as a sort of a coastal route(Bradley and Stanford, 2004). A Beringia landbridge can't be the issue because of the Australian crossing using boats and a coastal route 25.000-35.000 years before. Source: Wikipedia; Para América, basado en Bortoloni 2003, Zegura 2004, Bolnick 2006 y Malhi 2008. Also (Pavlov et al., 2001; Tamm et al., 2007; Fu et al., 2014; Hoffecker et al., 2016; Bourgeon et al., 2017). The real problem of entering the America's below Beringia was the land ice barrier around the last glacial maximum of 21 ky BP. For this, boats and using the coastal route might have been instrumental.


Figure 16: DNA evidence for the Solutrean connection through the Atlantic Ocean 20.000 BP, when the sea ice shelves reached as far south as Ireland and connected the continent. The same pattern can be recognized: first the expansion into northern zones of Europe and then going west on the same latitude into the America's (Bradley and Stanford, 2004). When compared to the previous map, it should be clear that the Siberian occupation of the America's predated the Solutrean wave. The Solutran wave problably can be compared to the Viking migration: short-lived, and limited in scale and reach, as compared to the extremely successful earlier Siberian migration. Source: Wikipedia.



Figure 17: A map depicting likely centers where the late Pleiosteen to earliest Holoceen domestication of at least one plant took place. Sources of major diffusions of domesticates are indicated by arrows. Maize, potatoes, wheat and rice are Late Pleistocene to early Holocene transition domestications from 12,000 – 8,200 B.P. (Before Present). DNA research connects these plants to local wild varieties. Note that there is no Atlantian common origin on the domesticated plant level nor is there any pre-Columbian agricultural exchange between Inca/Maya and Egyptian centers. Those plants were worth more than any gold or astrological knowledge and no migrating agricultural people would leave them behind. Research indicates that these staple foods all were domesticated from local wild varieties. Probably by women, because they were the gatherers. The men hunted. The DNA history of those plants is strong evidence of independent female ingenuity and against Atlantian common origins. Source: (Larson et al., 2014)

Click here to back to text of first reference to this map. Click here to back to text of second reference to this map.



Figure 18: From 12 ky BP to 14 ky AP, peak at 1 ky AP: the four key Neolithic plants that were the earliest to be domesticated: potato, maize, wheat and rice. Click here to back to text.



Figure 19: From 38 to 12 ky BP, peak at 25 ky BP: cave art mammuth from Europe, indicating the winterzone crossing and the continuing development of artistic expression.



Figure 20: From 64 to 38 ky BP, peak at 51 ky BP: Bradshaw boat cave art from Australia as a symbol of the Wallace Line crossing Great Year. Inspiration for this drawing: The Lost World of the Bradshaws



Figure 21: From 90 to 64 ky BP, peak at 77 ky BP: harpoons from the Upper Paleolithic, indicating systematic fishing on larger fish. Inspiration for this drawing: Nature. The first barbed points and other boon tools appeared around 100 ky BP.

Click here to back to text.



Figure 22: Limited set of symbols of the Upper Paleolithic are found all across the globe, a strong indication that symbolism is a pre-dispersal capacity. The first systematically produced symbolic decoration appeared on ostrich egg water bottle decorations around 77 ky BP. Cave art symbolism peaked at 25 ky BP, so after the decisive isolatory dispersal of humanity over the planet. But those cave art symbols appear all over the world, after dispersal, so must have been a predispersal capacity. Inspiration for this drawing: (von Petzinger, 2005, p. 149)



Figure 23: The female figurines around the sign of Leo in the Zodiac of Dendera.



Figure 24: The female, from Virgin and Leo to Pisces in the Zodiac of Dendera.



Figure 25: The two extremes, as Yin and Yang, of the Great Year of Astrological Darwinism.



Figure 26: Tablet from Uruk IV, 5200 BP. Proto-Cuneiform writing tablet from Mesopotamia. Los Angeles Country Museum of Art, California USA. This was the earliest form of writing. Click here to back to text.



Figure 27: An integrated timeline of Astrological Darwinism, representing the Upper Paleolithic or Cave Art / Winterzone Great Year, followed by the first half of the Neolithic Revolution or Agri-Industrial Great Year. A specific barrier is the challenge for the genetic boost creative window around Peak Magic and the Age of Leo.



Figure 28: A new Grand Narrative in a single figure. An integrated timeline of Astrological Darwinism with all the Great Years of the relevant past and future, with a focus on Ages of Leo and the accompanying Peak Magic with its genetic boost creative windows. Neodarwinism only focuses on Peak Science moments, leading to cyclic recurring of the 'sapient paradox' in todays paleoan-The Cycle of Life perspective is that re-enchantment thropology. as the return of 'élan vital'/Bevng/Artemis/Aletheia/phusis is as progressive as dis-enchantment is during the forgetting of 'élan vital'/Beyng/Artemis/Aletheia/phusis. Both processes are progressive one's, only during a different phase in every Great Year. Simply put: the Third Wave - New Age response to those 'sapient paradoxes' is that the cyclic return of feminine magic every Great Year solves those paradoxes.

Bibliography

- Balme, J. et al. (2009). Symbolic behaviour and the peopling of the southern arc route to australia. *Quaternary International 202*(1), 59– 68. Great Arc of Human Dispersal.
- Bar-Yosef, O. (2007). The archaeological framework of the upper paleolithic revolution. *Current Biology* 214, 3–18.
- Benazzi, S., V. Slon, S. Talamo, F. Negrino, M. Peresani, S. E. Bailey, S. Sawyer, D. Panetta, G. Vicino, E. Starnini, M. A. Mannino, P. A. Salvadori, M. Meyer, S. Päbo, and J.-J. Hublin (2015). The makers of the protoaurignacian and implications for neandertal extinction. *Science* 348(6236), 793–796.
- Bergson, H. (1907). L'Evolution Créatrice. Genève: Edition Albert Skira. Translation: Mitchell, A., 1911, Creative Evolution, New York, H. Holt and Company; Edition 1944, New York, Random House.
- Bohm, D. (1952). A suggested interpretation of the quantum theory in terms of "hidden" variables i and ii. *Phys. Rev.* 85(2), 166–179 and 180–193.
- Bohr, N. (1958). *Atomic Physics and human Knowledge*. New York: John Wiley and Sons.
- Bourgeon, L., A. Burke, and T. Higham (2017). Earliest human presence in north america dated to the last glacial maximum: New radiocarbon dates from bluefish caves, canada. *PLoS ONE* 12(1), e0169486.
- Bradley, B. and D. Stanford (2004). The north atlantic ice-edge corridor: a possible palaeolithic route to the new world. *World Archaeology 36*, 459–478.

- Commission des sciences et arts d'Egypte (1817). Description de l'Égypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française. Antiquitès, Planches, Tombe Quatrième. Paris: L'Imprimerie Royale.
- Davies, P. C. W. (2004). Does quantum mechanics play a non-trivial role in life? *Biosystems* 78, 69–79.
- Fu, Q. et al. (2014). Genome sequence of a 45,000-year-old modern human from western siberia. Nature 514, 445–450.
- Grosz, E. (1999). Darwin and feminism: Preliminary investigations for a possible alliance. *Australian Feminist Studies* 14, 31–45.
- Guzmán, R. A. and J. L. Weisdorf (2011). The neolithic revolution from a price-theoretic perspective. *Journal of Development Economics 96*, 209–219.
- Hoffecker, J. F. et al. (2016). Beringia and the global dispersal of modern humans. Evolutionary Anthropology: Issues, News, and Reviews 25(2), 64–78.
- Hublin, J.-J. (2015). The modern human colonization of western eurasia: when and where? *Quaternary Science Reviews 118*, 194–210.
- Jollois, J. and R. E. de Villiers du Terrage (1817). Recherches Sur Les Bas-reliefs Astronomiques Des Égyptiens, Et Parallèle de Ces Basreliefs Avec Les Différens Monumens Astronomiques de L'antiquité. Paris: Imprimerie Royale. Figures in: Tableau synoptique des constellation semblables dans les differens planisphères.
- Jomard, M. (1822a). Examen d'une opinion nouvelle sur le zodiaque circulaire de Dendera. Paris: Imprimerie Abel Lanoë. Extrait de la Revue Encyclopédique, tombe 15, cahier 45, 1822.
- Jomard, M. (1822b). Examen d'une opinion nouvelle sur le zodiaque circulaire de dendera. *Revue Encyclopédique 15*(45), 432–451. Sketch of the Zodiac on page 432.
- Larson, G., D. R. Piperno, R. G. Allaby, M. D. Purugganan, L. Andersson, M. Arroyo-Kalin, L. Barton, C. Climer Vigueira, T. Denham, K. Dobney, A. N. Doust, P. Gepts, M. T. P. Gilbert, K. J. Gremillion,

L. Lucas, L. Lukens, F. B. Marshall, K. M. Olsen, J. C. Pires, P. J. Richerson, R. Rubio de Casas, O. I. Sanjur, M. G. Thomas, and D. Q. Fuller (2014). Current perspectives and the future of domestication studies,. *PNAS 111*, 6139–6146.

- Marrati, P. (2010). The natural cyborg: the stakes of bergson's philosophy of evolution. *The Southern Journal of Philosophy* 48, 3–17. Spindel Supplement.
- Mcbrearty, S. and A. S. Brooks (2000). The revolution that wasn't: a new interpretation of the origin of modern human behavior. *Journal of Human Evolution* 39(5), 453 563.
- Mellars, P. (2006). Archeology and the dispersal of modern humans in europe: Deconstructing the "aurignacian". *Evolutionary Anthropol*ogy 15, 167–182.
- Munro, N. D. (2004). Zooarchaeological measures of hunting pressure and occupation intensity in the natufian. *Current Anthropology* 45, S5–S33. Supplement.
- Nigst, P. R., P. Haesaerts, F. Damblon, C. Frank-Fellner, C. Mallol, B. Viola, M. Götzinger, L. Niven, G. Trnka, and J.-J. Hublin (2014). Early modern human settlement of europe north of the alps occurred 43,500 years ago in a cold steppe-type environment. *PNAS* 111, 14394– 14399.
- Pavlov, P., J. I. Svendsen, and S. Indrelid (2001). Human presence in the european arctic nearly 40,000 years ago. *Nature* 413, 64–67.
- Pinhasi, R., J. Fort, and A. J. Ammerman (2005). Tracing the origin and spread of agriculture in europe. *PLoS Biol* 3(12), 2220–2228.
- Rasmus, N. et al. (2017). Tracing the peopling of the world through genomics. *Nature 541*(7626), 302–310.
- Renfrew, C. (2001). Commodification and institution in group-oriented and individualizing societies. *Proceedings of the Britisch Academy 110*, 93–117.

- Renfrew, C. (2008). Neuroscience, evolution and the sapient paradox: the factuality of value and of the sacred. *Phil. Trans. R. Soc. B* 363, 2041–2047.
- Schwaller de Lubicz, R. A. (1961). Sacred Science. The king of pharaonic theocracy. New York: Inner Traditions Int. Ltd.
- Skoglund, P. et al. (2017). Genomic insights into the peopling of the southwest pacific. Nature 538(7626), 510–513.
- Slatkin, M. and F. Racimo (2016). Ancient dna and human history. *PNAS* 113, 6380–6387.
- Snir, A., D. Nadel, I. Groman-Yaroslavski, Y. Melamed, M. Sternberg, and O. Bar-Yosef (2015). The origin of cultivation and proto-weeds, long before neolithic farming. *PLoS ONE* 10(7), e0131422.
- Sterelny, K. (2011). From hominins to humans: how sapiens became behaviourally modern. *Phil. Trans. R. Soc. B* 366, 809–822.
- Tamm, E. et al. (2007). Beringian standstill and spread of native american founders. *PLoS ONE 2*, e829.
- Vandermassen, G. (2005). Darwin voor dames. Over feminisme en evolutietheorie. Amsterdam: Uitgeverij Nieuwezijds.
- von Petzinger, G. (2005). Making the Abstract Concrete: The Place of Geometric Signs in French Upper Paleolithic Parietal Art. Victoria B.C.: University of Victoria. BA thesis.
- Weber, M. (2008). Science as vocation. In J. Dreijmanis (Ed.), Max Weber's Complete Writings On Academic and Political Vocations, pp. 25–52. New York: Algora Publishing. Translation of 'Wissenschaft als beruf' by Wells, G. C.
- Weisdorf, J. L. (2015). From foraging to farming: Explaining the neolithic revolution. *Journal of Economic Survey* 19, 561–568.
- West, J. A. (1978). Serpent in the Sky: The High Wisdom of Ancient Egypt. New York: Harper & Row.
- Wittgenstein, L. (1921). Logisch-philosophische abhandlung. Annalen der Naturphilosophi 14(3/4), 185–262.

Wollstein, A. et al. (2010). Demographic history of oceania inferred from genome-wide data. *Current Biology* 20(22), 1983–1992.