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COSMOLOGY AND MYTHOLOGY
A CASE STUDY[†]

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Abstract

Cosmology has always constituted the core of developed mythological systems. Many mythological concepts form the archetypal layers of human mind. Even modern Cosmology retains, albeit in hidden form, mythological constructs. One of the most deeply entrenched in the mind of *Homo sapiens* is the archetype of serpent. It appears in almost all mythological traditions, from the Biblical one, Greek myths of creation, to the modern cosmological models. We analyse the background of this human fascination with the serpent-like creatures. We argue that it is the extreme topological peculiarity of the linearized living beings that distinguish them from all other animal creatures. We compare the modern cosmological constructs, like the cosmic strings, with the ancient ideas of the most primitive cosmic structures, conceived as an αρχε of the pre-Socratic Greece. A number of modern physical models relevant to the issue will be discussed, too.

Keywords: Cosmology, mythology, archetype, serpent, religion

1. Prologue

Between prehistoric *homo sapiens* and the historical society, with the latter commencing with the appearance of written records and thus of names, a great shift of paradigm of the way of thinking and communicating individual thoughts took place. This paradigm shift was so radical that one might call it paradigm revolution, in the similar sense as Kuhn defined it for scientifica revolutions [1]. Primitive abstract thoughts disguised mostly in allegorical forms, as we still find it in early pre-Socratic Greeks [2] and Vedic India [3], were transformed gradually into sets of individual (internally) coherent philosophical systems, which themselves obeyed more or less a common quasi-scientific paradigm. The Cosmology, or better to say cosmogony, played the most prominent role in these teachings we see from those historical figures in

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pre-classical, archaic Greece, like Pherecydes of Cyros and even more Hesiod, who is at the same time the last of mythologists and the first of (epic) scientists.

That mythological images of the origin of the world are deeply rooted in human minds is witnessed by direct inspections into all major religious and philosophical achievements of main civilizations, including the present global world culture. Whether this influence on the contemporary man's mind is realised at the conscious or subconscious (*via* Jung's archetypes [4], for instance) levels and what are varieties in the ways of expressing this influence is an important question, but here we shall leave our considerations of this kind. We start from an obvious fact that all established religions, that is their canonised teachings, begin with the creation of the world. This includes all so-called revealed religions, *y compris* Judeo-Christian (e.g. [5]). As noted by many scholars, the biblical creation story [6] conceals two rather distinct mythological pictures of God's creation act. It is only due to respect to the establishment values of the living religions that these mythological layers of their most fundamental doctrines concerning the world origin are not prominent subjects of research and/or publicity. Some of those mythological features stretch right to the modern era and may be revealed in a number of modern philosophical systems and even in the contemporary cosmological paradigms. We shall follow one of these lines of thoughts, as an illustrative example of a general idea that at the most fundamental level Cosmology contains many primordial ideas of our 'primitive ancestors'. For that, we make an excursion to the ancient world and its mythological folklore.

2. Mythology and the serpent archetype

2.1. Greek mythology

We turn to the beautiful Pelasgian *creation myth*, as R. Graves called it in his classic work [7]. At the very beginning we read: "*In the beginning, Eurynome, the Goddess of All Things, rose naked from Chaos, but found nothing substantial for her feet to rest upon, and therefore divided the sea from the sky, dancing lonely upon its waves. She danced towards the south, and the wind set in motion behind her seemed something new apart with to begin a work of creation. Whirling about, she caught hold of this north wind, rubbed it between her hands, and behold! The great serpent Ophion. ...*"

The story resembles much the biblical version, what is not surprising considering that Pelasgians came to Hellada from Palestine, much before Hellenic tribes reached their later homeland [7, p. 28]. They evidently brought along mythological pictures which were rooted into a common heritage of Near-east peoples, and are surely of very old pre-historical origin. Now, one may pose many questions concerning the structure and meaning of the narrative just quoted. We indicate some of them. First, is it really a story of creation, and if it is, creation of what? The author(s) conspicuously avoid the central problem of all creation pictures, which is the origin of creators themselves. This is the

problem which bares all epistemological (even gnoseological) weight of every serious treatise on the birth of the Universe and presents still insurmountable difficulties, even at the very logical level, to modern philosophers and theologians alike. The ancient authors did the same thing as do the present thinkers alike – they pulled in an *ad hoc* Demiurg. In this narrative by Pelasgians, this is Eurynome, *Goddess ex machina*, better to say *ex Chaos* (Θεοζ απο Χαοζ, as Greeks would say). But what the 'creation' refers to? The material world? Yes, but not quite. However, before we look more closely to this part of the narrative, let us pay more attention to the very term 'creation'. If the creation concerns 'material', the very notion of 'creating' rests on the 'created entity' – 'matter' In other words, 'creation' and 'matter' appear synonymous – 'creation' means 'matter'. Formally (or logically) creation implies here division – one entity divides into two – immaterial (whatever it means) and material. This approach appears common to almost all pictures of 'creation', and in fact signifies something else than it was probably meant originally by the (anonymous) authors – it creates 'creation'. Thus, the whole procedure closes into itself, as it should to, for one has a rational approach to things that are not a proper object of a rational discourse at all.

In the Pelasgian narrative, however, things are not simple, in addition. First, besides the Goddess we encounter also Chaos, which is a sort of *materia ex machina*. To Pelasgian people, as to almost all subsequent systems of Hellenic thinkers, creation meant, in fact, 'making order, that is – creation of Cosmos, as opposed to Chaos. But does it imply that Chaos was essentially of material nature? Since we read that Eurynome divides Sky from Sea, i.e. water, what meaning one should ascribe to the 'Sky'? Surely, division must imply, at this primordial level of sorting things out, separation of qualitatively distinct entities. As the water is material thing, does it imply that by the Sky Heavens is meant? Something 'ethereal', not material, or of a kind of 'spiritual nature'? If so, the whole treatment implies an iterative procedure. Formally, one has the following approach: Goddess, an undefined entity (postulate), then (nt necessarily in temporal meaning) Chaos (another postulate), then sky (possibly immaterial entity) and water 9definitely material thing).

But water is not yet Cosmos, for it is amorphous, shapeless quantity and the sky is even less defined (or structured). And here we come to the most decisive point in the whole (evolutive) series of events – creation of the serpent. But it does not appear simple either. In fact, another phenomenon precedes – the appearance of the wind behind the Goddess. This is already an order in Chaos, but still not a created thing – creature with permanent features. It is an orderly motion, macroscopic movement, as opposed to disorderly motion, implied by chaos (in modern terms). Then the Goddess 'takes things in her hands' and creates Ophion, rubbing the wind between her hands (possible allusion to women's making bread). So wind appears as an active and Eurynome as an intelligent principle, we meet later in a somewhat disguised form as Aristotle's ευτελεχια and νουζ of Anaxagoras [2, p. 362], respectively. Now, we go back to Ophion, after this brief digression.

Why serpent? This creation played a prominent role in almost all religious systems, in particular their narratives on world creation. As already Graves emphasizes [7, p. 28] serpent was a prominent Demiurg in Hebrew and Egyptian mythologies. It played a prominent role in other mythological folklores, notably Indian [8] and Chinese [9], not to mention Central-American tradition (e.g. [5]). What is so fascinating in this kind of animal that caught imagination of early men all over the world? There are many features of these creatures that made them at the same time fearful and objects of adorations in majority of societies and civilizations. (Herpetophobia appears the most ancient and most profound phobia deeply entrenched in human subconsciousness). We shall restrict ourselves here to just a few of them, which appear most relecvant to the object of this work.

The most fundamental difference between serpents and the rest of animal world, including reptiles, is the lack of limbs. This lack makes them one-dimensional creatures, imbedded into two (three) dimensional surrounding world. They belong, in a sense, to a different space, more precisely to a subspace of our physical world. What makes them difficult to cope with, both for 'geometrical' and 'kinematical' reasons. Further, the lack of limbs has resulted in a very peculiar way of moving, which appears a fascinating undulatory, wavelike motion (some desert snakes move by rotating their helicoidal configuration), which produces net translational drift. It is interesting to note here, that the modern concept of microscopic world, as described by Quantum mechanics, with the peculiar construct of wave-corpuscle duality at the most fundamental level of the world structure appears best epitomized by snake's wavy motion. This motion has a profound hypnotizing effect on great majority of other animals, including human. In fact, the more intelligent (evolutionary advanced) animal is, the more fearful the snakes look to them. Combined with eventual poisoned teeth, which venomous snakes possess, this creatures turn into epitome of danger and even evil, what endowed them with the very prominent role in the Book of Genesis, indeed [6]. The reason for making them objects of veneration is an interesting consequence of the structure of human mind *(les extremes se touchent*), but this goes beyond the scope of this work. We mention here that attempts to produce even more fearful creatures by adding wings to snakes, as the concept of dragon illustrates, reveal the essential misunderstanding of the uniqueness of snake-like forms. Dragons appear grotesque rather than formidable creatures, as the Chinese traditional folklore testifies, for instance. It is not that snakes excel the other creatures in any particular sense, they appear simply radically different.

The elongated, linear shape of serpents exemplifies linear, unidirectional flow of time. In its "closed form" with tail in the mouth (or curled up), a serpent epitomizes eternity, as *Ananta* in Indian mythology [10]. Further, their linearity makes them most suitable for an *ansatz* of a primitive form, building blocks for more spacious, three-dimensional, voluminous physical world. Another choice, by the way, favorite among mythological cosmogonies is the (cosmic) egg, which may be conceived as one-dimensional (point) seed (or as three-

dimensional cosmic prototype). All these primordial structures are used as entities of lower-dimensional world and were regarded as more primitive forms in an essential sense. But while cosmic eggs may be regarded as natural choice, serpents used to carry an additional 'charge' as to become of primordial importance [7, p. 27].

In the early, archaic phase of Greek philosophy, serpent was represented as *Oceanos*, the river which encircles the World. Oceans still surround the firmament, but are experienced as the two-dimensional structure, rather than one-dimensional one. However, the elongated form of serpent allows for the concept of perfection, which is achieved by closing the creature on herself. Many mythological traditions represent serpent as forming a circle, swallowing her own tail. This concept of 'perfection' will turn out very suitable for conceiving the eternity of the universe, as we shall see later on.

2.2. Judeo-Christian mythology

In Eden snake was designated as the most cunning of all animals. However, according to the biblical story one may rather consider the snake smart creature, who explained to the human couple the rationale behind Jehovah's forbidding eating from the tree of life. In fact, the latter designation appears false, since it turned out to be the tree of knowledge instead. Thus, it was the snake who opened the gate of science to humans. That the latter was considered to be the curse of human race was not accidental, regarding the perennial tension between rational and irrational, real and fictive, laic and clerical, which was to accompany the evolution of mankind.

This allegorical anecdote will turn out a great inspiration to many later heresies, in particular the Gnostics and their re-interpretation of the ideological base of the Old Testament. According to Manicheans, good God sent Christ (or an angel) in the form of a serpent, to 'open the eyes' of Adam and Eve, and thus save them from the Demiurg, who allegedly made them out of 'evil matter'. This interpretation of the biblical myth was followed by many esoteric societies, who did not hesitate to adopt the serpent as an incarnation of Christ, as one may see from Figure 1.

That the snakes have been venerated by many religious sects, within Christianity or otherwise, supports the general believe that snakes, venomous or not, are creatures apart. One North-American sect forces new adepts to confront venomous snakes as an act of initiation, with frequently fatal end. In this instance snake appears an incarnation of evil, satanic, what would seem contra-intuitive to the general 'belief in good'. However, this ritual may be considered as an act of 'healing of herpetophobia', overcoming the evil by eliminating the fear deeply rooted in all living creatures, human or others, when confronted with 'creatures from another world'. It is the rationale for a festival, annually held in Italy, when (nonvenomous) snakes are collected and carried in procession, before letting them go back to their natural environment.

Figure 1. The crucified serpent, according to alchemists.

Fear and veneration often go together, as Giordano Bruno put it in his *Principium coincidetia opositorum*. After all, all religions rely on fear, which they induce in their followers, as the John's Apocalypse demonstrates eloquently. Fear goes often hand in hand with aggressiveness, as the case with venomous snakes shows. Just because they feel (and are) vulnerable, snakes bite any potential enemy, including humans. The snake in Eden was evidently conceived as venomous, contrary to some artistic presentations, including that by Michelangelo. The curse spelled on her as the future eternal enemy of mankind was a clear case of *vaticinum ex eventu* (as many other 'prophecies' in Bible appear, especially those in New Testament). It is this interplay between the dangerous and vulnerable that has ascribed an ambiguous character (and role) to serpents in general.

In the Christian iconography we meet the serpent with two heads, so-called *amphisbaena,* each head representing Christ and Satan. It is, again, a concept of perfection, completeness, merging good and evil. But this concept of *coincidentia opositorum* has been present in almost all traditions, European and non-European alike. That famous anecdote of the venomous snake drinking milk at Asclepion near Pergamon is but one of many instances. The poisoned milk as a medical drug appears a paradigm of the famous saying that what hurts it heals. Thus, snake has become an inseparable companion of Esculape, as numerous effigies in pharmacies testify. The modern medicine does nothing but imitate the ancient, when snakes are concerned. The anti-poison serums are

produced solely from the very venom extracted from the corresponding snakes. Hence, if one experiences causalities done by snakes as an eternal battle between human and herpetic races, it is the syndrome of snakes biting themselves, which underlies the phenomenon.

When Moses forges the serpent from bronze, in order to heal Israelites in desert from bites of the real snakes, he repeats the same belief that that it is only by very snakes one can beat them. What is tantamount to stating that one deals with *primordial phenomenon,* in Mircea Eliade's sense [11].

2.3. Other mythological traditions

Serpents play prominent role in many religious traditions, but we shall restrict ourselves to those instances relevant to our cosmological considerations. In Chinese tradition, *yin* and *yang* symbols represented by *Fo-hi* and *Niu-Koua*, symbolize the double astral polarization and are usually represented with bodies of serpent. That such fundamental principle are embodied in serpents corroborates too the notion of the primordiality of the latter. In Indian tradition, *nagas* appear both allies and enemies of humans, as the circumstances demand. Fakirs' playing with cobras, beside commercial use, is an allegorical representation of an interplay of good and evil. (As the famous ritual of 'kissing cobra' is, too).

North-American Indians used to construct moulds in the serpentine shape. It was, surely their tradition of dealing with serpents that has inspired those sects of European origin, mentioned above, to deal with venomous snakes as incarnation of evil to be overcome. Central-American god *Quecalcoatl,* a combination of bird and serpent, was conceived as perfect master, ruling the air and soil. Interestingly, apart from mongooses and hedgehogs, birds appear the only real enemy of snakes, many of feathered species feeding on them.

3. The physics of snake-like beings

As emphasized above the most fundamental difference between serpents and the rest of animal world, is the lack of limbs. It should be noted, however, that this structural simplicity does not make snakes 'primitive creatures', in the evolutionary sense. In fact they have undergone a retrograde evolution, loosing their primordial limbs, as their skeleton reveals. Moreover, they possess many evolutionary significant advantages, together with some other reptiles, over the worm-blood animals, including mammals. Besides, their elongated, linear form has enabled them to access almost any environment niche, from the soil surface, underground space, plants, water, air, sand, etc.

Besides the wavy motion, snakes move in a number of other manners, including translatory one, like snails, as the case with big serpents, like python is. While jumping from tree to tree, as some snakes at Borneo do, they 'fly' like translating wave, as a kind of macroscopic de Broglie`s 'matter wave', the fundamental construct of the Wave mechanics. The same kind of kinematics is

displayed while swimming in water. Some serpents, like boa constrictor, kill their prey by winding around them like a helicoids, and then strangle the victim before swallowing it. Helical shape appears the fundamental secondary structure of the DNA, the basic hereditary organ of living creatures. Moreover, while mating some snakes wind around each other, forming double helix, the macroscopic image of the DNA indeed. The elongated, linear shape of serpents exemplifies linear, unidirectional flow of time. In its 'closed form' with tail in the mouth (or curled up), a serpent epitomizes eternity, as *Ananta* in Indian mythology [10, p. 379]. But the fullest use of serpent as effigy for time flow appears in its relationship with the very god of time, *Aeon*, as illustrated in Figure 2.

Figure 2. Aeon, god of time.

The coiled serpent in the form of a helicoid incarnates the nonlinear time development. It is linear along its body (primary structure), but at the same it is cyclic, with coils repeating at each higher levels (secondary structure). This motive appears very popular in naive philosophy of history, in terms of spiral (sic) development. Things change, but repeat too. One might propose a number of interpretations concerning the artist's choice of the serpent's head location, but it is of miner importance to us here. (It conforms to the Egyptian pharaohs' pattern anyway). That the god appears with wings, a clear sign of its 'angelic nature', and at the same time enveloped with the most base creature, as we have seen, illustrates well the maxim that the opposites merge, that the good and evil are always going together, pleasant and fearful joined into a unique entity.

Within the classical Greek Pantheon serpent was closely connected with Zeus. As Plutarch reports in his *Biographies* [12], Zeus mated with Alexandre's mother, Olympia (the name is not insignificant, in this context), from which coupling Alexandre was born. Pretensions on divine origin were popular even in recent times, as was the case with Florentine Medicos, whose dynasty founder was *Cosmus*, i.e. Cosmos, (not insignificant coincidence, again), who claimed Jupiter as their ancestor (even Galileo took part in this game) [13]) - another example of 'continuation of politics by mythological means'.

Snakes appear creatures 'from another world', not only by their peculiar shape, but regarding other physiological and anatomical features. Whereas other animals communicate with the external world by receiving signals at the optical range of light, snakes usually are endowed with sensory organs which make use of the infrared electromagnetic region. Hence, they can sense warm-blooded pray in the complete darkness, what makes them a formidable enemy of the mammals etc. Besides, they make use of their tongues for detecting potential victims, a quite unusual, counterintuitive sensory device.

If their physical appearance makes snakes out of the ordinary physical space, their way of consuming the catch appears even more counterintuitive. They swallow their pray, instead of eating it, without chewing as other animals. What is even more amazing, it holds both for dead or still alive pray. By the very appearance one would bet that anaconda would not be capable of swallowing a deer, but she is. Snakes, and especially big serpents, possess amazingly flexible jaws, which enlarge the entrance of the body by an order of magnitude. This enables snakes to swallow animals many times larger, more precisely, heavier than themselves. What makes them the most efficient killers in the animal world. The point is that the potential pray does not realize that the snake is a dangerous animal, for it can not imagine in which way it could make use of itself. The fact that a python can live on a swallowed pig or like for months demonstrates how much of efficacy nature has invested in these 'other-world creatures'. That the serpents dissolve the swallowed animal completely makes them the most economical animals in the world of living creatures.

Their peculiar shape and even more way of attacking and killing the prey and other animals generally makes snakes even more apart from the rest of the animal kingdom. They can move fast, but generally are very slow, while searching for victims. There is no way to recognize if they are ready, or even willing to attack, before it is too late. Their attack takes a small part of second, particularly in the venomous snake's case. The victim even does not realize what happens, before is dead or swallowed alive. Using the language of physics, their encounter with a prey follows the Dirac's *delta function* kinematics, with the speed of movements changing for several orders of magnitude.

But the most amazing thing is an encounter of a snake, in particular serpent, with other animals of pray, like leopard. Even if the latter is aware of the danger it is facing, it does not know what to do. The curious thing is that an ordinary animal of pray can easily avoid the conflict, which usually is fatal for

it. Why they feel obliged to attack the 'pray' and finish as pray themselves, is another mystery of the animal world. Anyway, if they decide to attack that peculiar creature, they have no strategy for doing that. Animals feel that it is the head (more precisely the neck) of the creature which should be the first target, but this is just a point on the elongated snake's body. This confusion makes the attacker even easier pray to serpents, for instance. Though leopard's attack is fast, it is no match for the serpents lightening blow. It bites leopard's neck and then coils round its body, constricting the grip until the victim ceases to breath. It is this slow dying of the victim which makes the whole procedure so horrifying. Since the animal is probably still unaware of its role of the food, its horror is amplified by the sense of senseless death, of a death without reason. It is death as a fate, something like essential killing.

It is this essential strangeness of snakes that ensured them the special place in human mythology, including the Book of Genesis. It was the first (and the last) animal that talked to human and thus was elevated to the rang of creature 'on equal footing'. But even more interesting is the role of snake in various esoteric teachings and *societes initiatic,* where the snake of the Eden takes over the role of benefactor, instead of an incarnation of evil (conceived as disobedience to Lord). This twist in theological interpretation of the Bible appears particularly prominent with Gnostics, like Marcion. It illustrates well the logic of opposites, which plays essential part in all religious systems. As in the realm of physical world, where the roles of particle and antiparticle is interchangeable, and thus world and antiworld acquire relative meaning only, so the notion of evil and good are meaningful within the interrelation only. Hence, snake as an epitome of human archenemy can be incorporated into another, equally consistent division of the world of living creatures, including *homo sapiens*. Indeed, there are cases where snakes are accepted by human as peculiar but harmless creatures, even protectors of human race. This is the case with the most prominent of all snakes, cobra. But before we pass to cobra, we mention another instance of human-snake partnership. That in medicine.

It is a common picture in pharmacy to depict the *Asclepius* (Asklepios), god-protector of medicine, with stick and a snake winding around it (see Figure 3). This emblem of medical profession owes its role to the tradition from the Asclepion medical centre near Pergamon (today Bergama) in Turkey. According to the tradition two snakes were found drinking milk from a vessel left as an offer to the God. It happened that a diseased person drank the milk by mistake and was immediately cured. Hence the poison of venomous snakes acquired the role of medical assistants. Of course, we know that snakes do drink milk (some of them directly from cows, for instance), but it has nothing to do with their venom. (The latter is known not to be harmless if digested). The rationale behind this belief is the old dictum that the spear which makes the wound cures the best the same. In fact the same rationale is applied in producing anti–venom serum, from snakes' venom, as the modern medicine does it routinely.

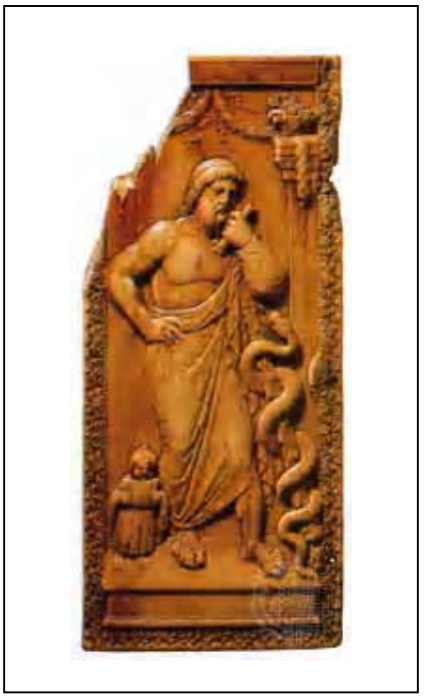

Figure 3. Asclepius, god of healing.

Cobra plays a particular role in many religions and societies in general. Why? First of all because it is not a proper snake. Though it is very venomous and responsible for a great deal of about 40.000 deaths among human (out of million bites) per year, it possesses some extraordinary distinctions from the rest of its species. First, though it shares with the latter the common topological feature: linear shape imbedded into two-dimensional (even three-dimensional) physical space, it deviates frequently from this picture. When moving through a high grass, it lifts the front part of the body so as to control the immediate environment. But since the sensory organs are so placed on its head that the latter must be in horizontal position, cobra must bend its neck. By doing this it must change it shape at the location and broaden the neck. Thus, it deviates from the strict linear shape, which makes the snakes so different from all other creatures. Moreover, by lifting the front part of the body, cobra must spread the rear part over the soil so as to ensure its stability. Hence, it acquires a three-dimensional 'secondary structure' as biologists would term it. It becomes, consequently, less peculiar than the other snakes and more acceptable to the humans. As many occasions verify.

Cobra is a sacred Buddhist animal, for it shadowed Buddha's head when he was sleeping in the sun. Egyptian pharaohs are often depicted with cobra's head over their head, as a protector of the ruler. The appearance of spectacles pattern over the upper part of the broadened neck makes cobra even more familiar to humans, at least in the modern era of spectacles usage. Anyway, by

moving, at least occasionally, from the strict linear shape, cobra has lost some of the most fearful aspects of snakes as such. This proves the best the thesis that it is this topological feature which makes snakes incarnation of the most fundamental structure of the world. We shall see, in the following, that the cosmology has exploited very much this peculiarity from the realm of animal world.

4. The standard cosmological model

Modern Cosmology (or rather cosmologies) since appearance of General Relativity claims to be a genuine scientific enterprise, mainly on the grounds that it is based on mathematical grounds. Yet, many of their features are hardly more than conjectures and it was this hypothetical aspect of the established cosmological models that led Alfven [14] cast serious doubts on the scientific foundations of Big Bang model (see also [15]): *"Le Big Bang est un mythe, peut-etre um merveilleux mythe, qui merite un place d'honneur dans un zoo qui contiendrait deja le mythe indien de l'univers cyclique, l' oeuf cosmic chinois, le myth biblique de la creation en six jours, le mythe cosmologique de Ptolemee et bien d'autres;..."* ("Big Bang is a myth, perhaps a wonderful myth, which deserves a honourable place in the zoo which already contains Indian myth of the cyclic Universe, the Chinese cosmic Egg, biblical myth of the Creation in six days, the cosmological myth of Ptolemy and many others;…")

Since these line were written (1976) many features of the leading cosmological models have changed (hopefully improved), but the essential paradigm of all of them is still present - pretension that human mind can fathom the most fundamental question of the existence of our universe - its origin. But Alfven's objections were mainly of methodological character, accusing cosmologists of pushing their models, or predictions, too far back in time (and similarly, in space). Our primary concern here is the structural and content parallelism between modern cosmology and ancient mythological solutions. Certainly the most conspicuous advance in modern Cosmology is the appearance of the inflatory paradigm (see, e.g. [16]). It consists of mainly three phases of the Universe evolution:

(i) explosion of the initial singularity - (Hot) Big Bang,
(ii) inflatory expansion and
(iii) 'normal' expansion, which we witness today.

Which stage of these 'evolution' may be regarded as the 'birth' (not to say creation) of the Universe? It is, of course, matter of definition, but to us the (hypothetical) existence of the very singularity fulfills all prerequisites for the point of birth. As for the cosmos creation, it seems natural that the boundary between inflatory and standard phase should be considered as the stage giving birth to the present state of Universe - i.e. the Cosmos. According to standard inflatory scheme, direction of the spontaneous symmetry breaking need not be the same over the cosmic space and if it did happen, then there might be so-called topological defects between adjacent: monopoles, strings and domain

walls. They have not yet been observed, but are subjects of intensive theoretical calculations. Monopoles appear unlikely to be discovered, while domain walls seem to have left traces of their evidence in the observed froth-like structure of galactic distribution [17-18]. But the most interesting entity is surely is the cosmic string, gigantic linear structure, whose rupture may have been the principal (if not the only) mechanism of forming galaxies and super-galaxies (galactic clusters) [19]. Mechanisms suggested for this formation differ, of course, from that assumed by the author(s) of Pelasgian myth, but it is remarkable that both sets of authors are pertaining to the same geometrical structure, albeit in different 'incarnations'. It appears the more remarkable to notice that the most advance theory of elementary particles, real building blocks of the physical world, string theory, makes use of the same pattern, although on the other end of the dimensional scale [16, p. 311]. Two distinct forms of these strings are possible: (i) open and (ii) closed strings. (We note in passing that if classical elementary particles, like electrons, are conceived as elongated structures, they are able to overcome potential barrier, in analogy with quantum mechanical tunneling effect.) The theory is far from complete, but it is considered as the most promising candidate for the searched Grand Unified Theory, which would eventually include the ever elusive gravitational interaction. Moreover, in the most recent advances of the theory, strings appear to be the most fundamental physical construct, from which other quantities can be derived, including the most elusive physical (and philosophical) entity - time. The latter should be compared with Hesiod's solution in his *Theogony,* where time was not a primitive construct (as incarnated by Chronos). Thus, strings both in their cosmic variant and as elementary particles might turn out to be ultimate solutions of the cosmic riddle. Eurynome, by rubbing the chaotic matter in her hands, might have done right thing.

In fact, the concept of cyclic Cosmos was prominent not only in Indian tradition, but in some pre-Socratic philosophers, like Empedocles, too. The image of a serpent biting her tail and devouring herself continuously appears as ideal for representing an eternal repetition of becoming and perishing of Cosmos, as the emblematic picture of *Ouroboros,* in both Greek and Egyptian tradition, testifies. As we saw with the myth of Eurinome, serpent was conceived by ancient Greeks as linked with Chaos, the primordial state of Universe, from which the Cosmos arises.

5. Linear structures

We have already emphasized the priority of linear configurations over other dimensions, when talking about building blocks of our material world. The time is essentially linear and any process of acquiring and processing information in real time is linear itself. It is, therefore, no surprise that the base of life on Earth, the macromolecule of DNA (and chromosomes which contain it) is one-dimensional. Whether this basic configuration is closed or open (secondary structure) appears of less importance. It is well known that he

German chemist, Kekule, was inspired by the picture of Ouroboros when conceiving his ring molecule of benzene. Serpents move in an undulatory manner, except when move over hot sand, but while mating the partners wind around each other to form the double helix. Whether this was an ansatz to Crick and Watson for conceiving their secondary structure of linear sequences which carry the genetic information and thus hide the secret of life, is of less practical importance, but bears considerable conceptual significance.

We have seen above how the linear structure enters the cosmological phenomena, both observational and theoretical. Here we turn our attention to most recent developments in other fields which support the idea of the primacy of linearity over other configurations. Two notable examples are the classical electrodynamics and the loop quantum gravity [20]. In both cases it is the circulation of relevant physical vectors along the loops which provide measurable quantities. At the same time this circulations provides the means to quantize the observables and hence to yield the rationale to the permanent and distinct structuring of the physical micro-world, underlying the observable meso- and macro-worlds. These new insights into the essence of the material world follow, in fact, the same pattern which has inspired Louis de Broglie in quantizing Bohr's orbits in the single-electron atoms, which reduces to closing undulatory movement of orbiting electrons onto itself. In a sense, this model is a combination of snake-like motion and Ouroboros paradigm. This picture is, of course, an analogy, not obligatory ansatz of real inspiration, but even as such corroborates the thesis of the prevalence of linearity over the more extended geometrical entities.

6. Epilogue

Mythological pictures and cosmological models frequent human speculative efforts to fathom the most profound problem (better to say question) of our existence - the question of our ultimate origin. Their solutions vary both within their own domains and in mutual comparison. Yet, one might find underlying patterns common to many of these and ask himself if there is deeper significance of these similarities than mere superficial resemblance. By picking up two prominent features from both spheres, intuitive (mythological) and rational (cosmological) we have tried to reconcile both approaches, in the sense that they might be regarded as two different outputs of the same underlying rationale. In particular, the anthropomorphic pictures of primitive cosmogonies should not perplex us, for they appear in modern texts too, albeit in disguised form [21]. On the other hand, the problem of initial conditions, present in modern cosmogonic models [22] may be traced back to the ad hoc status of Demiurg, to which early men had to resort. Further, the very role (and meaning) of the concept of Creation is far from clear in modern thinking on the history of our Cosmos (e.g. [23, 24]). If one concludes from an analysis of this kind that mythology is less fancy-story like and modern Cosmology not quite scientific enterprise, as is usually thought of, we would consider our efforts paid off.

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