

Hypothesis of Extraterrestrial Origins of Life on Earth and Its Anthropologically-Theological Implications: Rhawn Joseph's Case

Normunds Titans

Abstract

This paper is based on the insights of American brain scientist Rhawn Joseph, representing the “panspermia” theory of the origination of life on Earth. The ideas of this paper, admittedly, are imaginary, belonging if not to complete nonsense, then at least to “science fiction” rather than properly scientific inference. If the “seeds of life” are dispersed throughout the universe, elsewhere life might have evolved much further than on Earth. Creatures evolving billions of years longer than humans would immeasurably surpass our neuronal, intellectual and technological capabilities, appearing as gods to us. The “seeds of life” then might be implanted on Earth by highly-developed extraterrestrial beings – gods or God – who may have sown the DNA seeds on Earth from some dimension of the multiverse. Conversely, if humans have been genetically created in “the image of God”, and if the development continues, then perhaps humans have the genetic potential to be “gods”. Humans may continue to develop “in the likeness of God”, as more than 90% of the human genome is inactivated. Still, the question remains: How did life emerge, then developing from simpler organisms to humans and further on to higher beings and gods? Do gods have God?

Keywords: Rhawn Joseph, origin of life, organic soup, spontaneous generation, abiogenesis, seeds of life, panspermia, DNA

Introduction

In the beginning there was life.
(R. Joseph)

The complex issue regarding the origin of life on Earth can be reduced to a simple logic of two possibilities, supported by the respective camps of scientists, although neither camp possesses conclusive evidence, but one is much more prevalent. Either the earthly life has originated on Earth itself, say, by way of “spontaneous generation” from the so-called “organic soup”, which means abiogenesis, life originating from non-life, as the prevailing theory has it, or else the “seeds of life” have come to Earth from outside, as the modern variations of the ancient theories of “panspermia” have it, i.e. life here is of an extraterrestrial origin, the result of an astrobiological contamination that could have occurred as, for example, icy comets, meteorites or other cosmic debris from former life-bearing planets, safely encasing bacteria with DNA molecules, crushed into the Earth.¹ Both options can also be interpreted theologically. For example, the so-called “creation

¹ Among recent proponents of “panspermia” one can mention such eminent scientists as English astronomer and mathematician F. Hoyle with Sri Lankan/British astronomer Ch. Wickramasinghe, English molecular biologist, biophysicist, and neuroscientist F. Crick, British chemist L. Orgel and others.

science”, built on a theological basis, is compatible with the theories of the big bang and origination of life on Earth (I will not entertain this interpretation here), while it is also possible to surmise (as I will show below) that life has been deliberately implanted on Earth from outside by higher beings or, theologically speaking, by gods or God.

This paper is based and elaborated on a theoretical framework provided by the American scientist Rhawn Joseph, who in the 1970s and 1980s championed some ground-breaking discoveries in his basic specialisation, which is neuropsychology, brain science and neuroscience, and subsequently, to better understand the brain and consciousness, also expanded his scientific interests into their origins and development that involves research in astrobiology, microbiology, genetics, and other fields related to the emergence of life on Earth. Joseph, drawing upon a vast range of scientific references, represents the second option, namely, that the origins of life are much more ancient than the Earth and that it has come here from elsewhere.

The paper has two main parts. The first part deals with the theory of the origin of life in the universe and on Earth represented by Joseph. There are numerous aspects supporting this theory, and Joseph has written extensively on them. In the paper of this size, I can just mark out some of these aspects, particularly focusing on the difficulties for assuming that life has originated on Earth, and also briefly touching upon some aspects of the possible scenario as to how life arrived and developed on Earth, and how it originated in the universe before that.²

The second part of the paper, in turn, leaves the putative scientific evidences and inferences based on them and, following Joseph’s hints, embarks on making some imaginary conjectures from the theory outlined in the first part and on drawing some anthropologically-theological implications from them.

While Joseph’s conjectures beyond the limits of science proper into the realm of, I would say, science fiction appear fascinating to me, his attempts to find parallel confirmation of his theory in the ancient Hebrew, Sumerian and other mythologies are rather simplistic and lack adequate hermeneutics. In this area, the background of a natural scientist appears insufficient. Still yet, Joseph’s simplistic reading (even misinterpretation) of the ancient sources does not much compromise the imaginary, fictional implications that can be made from the theory of panspermia. Joseph’s use of dubious references to the Bible and other ancient texts appears quite superfluous to me, although they are also briefly touched upon in the paper – highlighting them as being interestingly tailored to fit Joseph’s theory of the origin and development of life on Earth.

² Concerning this part, I must give a disclaimer. My area of specialisation is philosophy of religion, not astrobiology, nor evolutionary biology, nor astrophysics, nor any other natural science. Therefore, I am not competent to evaluate the scientific validity of the evidence and claims as to the origin of life on Earth represented herein vis-à-vis the contrary views (e.g., panspermia versus spontaneous generation, infinite universe versus big bang, evolutionary metamorphosis versus random mutations, and the like). Although some arguments that Joseph relies on seem to me at least prima facie sound, it is understandable why the position of abiogenesis is prevailing. At the very least, the principle of “Occam’s razor” in this case may lead a researcher to assume that the earthly life has originated on Earth – until the existence of extraterrestrial life has been scientifically proven, which is far from having happened (cf. De Duve 2002: 93).

1. Extraterrestrial contamination theory of life on Earth

If Life were to suddenly appear on a desert island, we wouldn't claim it was randomly assembled in an organic soup or created by the hand of God; we'd conclude it washed to shore or fell from the sky. The Earth too is an island, orbiting in a sea of space, and living creatures and their DNA have been washing to shore and falling from the sky since our planet's creation.

(R. Joseph)

1.1. Spontaneous generation of life on Earth from the “organic soup”

The mainstream scientific theory, rooted in Darwinism, holds that life on Earth spontaneously originated and randomly evolved locally, from non-life in some “warm pond” of the so-called primordial “organic soup” of chemical compounds, struck by lightning bolts, exposed to massive doses of UV radiation and the like. A “single seed”, the first living molecule was thus miraculously formed and began to engage in further random associations, thus creating one simple life form – the universal common ancestor – that not only survived but was somehow provided with DNA or RNA, genetic instructions, cytoplasm, a cellular membrane, and the capacity to extract energy and reproduce itself by producing RNA- or DNA-based duplicates (Joseph 2000b: 28).

This theory, in Joseph's opinion, appears to presuppose some sort of supernatural conditions, which act on non-living matter to create life from non-life in a kind of magical way. Joseph thinks that such a view is as fantastic as, for example, discovering a computer on Jupiter and claiming it was randomly assembled in the Methane Sea (Joseph 2000b: 19; Joseph n.d.b).³ He suggests that the theories of abiogenesis in fact belong to religion or to a theology of miracles, which in this case is masquerading as science, substituting for “God” and the supernatural such terms as “nature”, “organic soup”, “natural selection”, “random chance” etc. and believing that they caused chemicals to randomly mix together, fashioning a living cell as a result. This “theology” is called “science” (Joseph n.d.a).

1.2. Considerations contrary to abiogenesis

Joseph has considered a great many of reasons for unlikelihood that life has begun in this way and on this planet. Here I will not present all of them and will just follow with some minimum elaboration Joseph's five-point classification (A, B, C, D and E below⁴) of the main reasons, all of which revolve around DNA (Joseph and Schild 2010a, 2010b). Notably, these factors render life originating on Earth questionable, but do not preclude life in its pre-coded rudimentary DNA forms from coming to Earth from elsewhere and then evolving along with the environmental modifications caused by these same life forms succeeding each other, up to women and men.

A) Complex life was present on Earth almost from the beginning, with evidence of biological activity dated to between 4.2 to 3.8 billion years ago.

³ With this metaphor Joseph echoes Fred Hoyle's notorious “junkyard tornado” argument, comparing the chance of cellular life arising from non-living matter to the chance that a tornado sweeping through a junkyard might assemble a Boeing 747 from the materials therein.

⁴ I shuffled Joseph's sequence.

There is evidence of microbial activity in Earth's oldest rocks dated from 3.8 to 4.2 bya, when the Earth was only some 300 million years old. This evidence includes high concentrations of carbon 12 and banded iron formations, consisting of alternating magnetite and quartz – presumably left by single-celled microbes that were already fractionating and secreting carbon and magnetite. In addition, microfossils resembling yeast cells and fungi have been discovered in 3.8 billion years old quartz. According to Joseph, this is not surprising, as archae and microbes known as extremophiles can survive the space journey and even flourish under the most extreme life-neutralizing conditions. These ancient rock formations from 3.8 bya also have high carbon contents of the protolith shale and high ratio of carbon isotopes in graphite from metamorphosed sediments, indicative of biological and even photosynthesizing activity. Additional evidence of such activity includes tiny grains of a phosphate mineral apatite, which contains calcium, as well as the residue of photosynthesis and oxygen secretion – high level of organic carbon (Joseph and Schild 2010b).

Despite the circumstance that there was insufficient time for random combinations to have created even proto-life, a complex life in the form of prokaryotes and eukaryotes has already colonized the young Earth since 3.8 bya, when all the necessary ingredient molecules for the abiogenetic manufacture of life still did not exist there. Moreover, these microbes were liberating and secreting free oxygen, carbon, calcium, and other essential ingredients which made it possible for multi-cellular eukaryotic life to subsequently evolve (Joseph 2009b; Joseph and Schild 2010b).

B) All the essential ingredients for creating life were missing on the new Earth, including and especially oxygen, sugar, and phosphorus.

The abovementioned organisms could not originally evolve from the ingredients available on Earth for a simple reason that the basic ingredients were missing. These creatures already possessed DNA, whose double helix consists of two strands of nucleotides, linked by weak electrostatic hydrogen bonds and laddered together via two sugar-phosphate backbones. The young Earth was lacking these ingredients, including sugar, phosphorus and free oxygen. It took over a billion years for free oxygen and phosphorus to begin accumulating, and both were produced biologically from the already existing life forms (Joseph 2009b; Joseph and Schild 2010b).

C) DNA and complex organic molecules would have been destroyed by the environment of the early Earth, and even proto-organisms would not have been able to survive.

Even if assuming that DNA started somehow miraculously to develop on Earth, it would have soon be destroyed, as the early Earth was continually bombarded by meteors, asteroids, comets, moon-sized and planet-sized objects, ice and remnants of the exploding parent star and its planetary system for about 700,000 years, until at least 3.8 bya, when life had already begun to take root on Earth. Although chemicals fell to Earth with this debris, they did not have a chance to form any pre-biotic compounds. The volatile conditions on the early Earth, coupled with the lack of sufficient atmosphere, extreme temperatures, including repeated melting of surface, insufficient water and continual exposure to gamma, cosmic and UV rays, would have prevented the formation of any complex organic, carbon-based molecules, or would

have destroyed them if they somehow managed to start developing (Joseph and Schild 2010b).

D) There is no evidence that life has been or can be produced from non-life on this planet.

All experiments to date have failed to produce life. Although there have been successful cases of producing a few complex organic compounds, no single-celled bacteria or DNA fragments have been created. Joseph states “a maxim” universal for all known earthly creatures, including single-celled organisms, bacteria and microbes, as they contain the information-bearing DNA molecules or genes: “Only life begets life” (Joseph, R. 2000b: 115; Joseph n.d.a). The nature and organisation of DNA molecules is such that the only source of DNA is DNA, and DNA could not have originated from the organic soup with the missing necessary ingredients. The same is the case with viruses, which must borrow the DNA of a non-viral cell in order to reproduce. The “organic alphabet soup”, as Joseph notes, thus actually was “a thin broth” missing three important letters: DNA (Joseph 2000b: 115).

E) Given the complexity of a single protein and a single macromolecule of DNA, statistically there was not enough time to create a complex self-replicating organism on this planet, not even a proto-organism.

I will dwell a little bit more on this factor. To recapitulate, the age of the Earth is estimated at 4.5 billion years. There is evidence of biological and microbial activity, bacteria and archae, in the oldest rocks on Earth already 4.2 billion years ago. The period of heavy bombardment of the still forming Earth by comets, asteroids, meteors etc. ended by 3.8 bya, and at that time this planet was already not just swirling with prokaryotic activity but also populated with single-celled eukaryotic organisms, accompanied by bacteria and archae. It is unlikely that such a complex life has spontaneously developed within 300 million years while the planet was still forming.

Consider the incredibly complex structure of a single strand of DNA molecule, containing all the information and blueprints for creating through complex chemical reactions all the proteins making up every unique component of every unique cell in the body. DNA is composed of hundreds of thousands of individual nucleotides which are ladderred together, forming base pairs alongside a backbone of complex sugars and phosphates. It is the arrangement of these nucleotides which contain the codes for creating every cellular component of every species which have ever existed on Earth. For a single cell to divide or grow requires DNA to unwind and to recreate itself, and to generate the proteins that make up the cell and its inner components. DNA also manufactures different types of RNA, which make a copy of the code and snips out the silent genes or introns. RNA transfers this information to yet another DNA-constructed protein, the ribosome, which translates these codes and creates the specified proteins. This complexity renders impossible, as Joseph maintains, the fantasy that these molecules were randomly assembled in an organic soup (Joseph n.d.a).

The most primitive single-celled microbes are comprised of more than 2,500 small molecules (including amino acids consisting of 10 to 50 atoms) as well as macro-molecules (proteins and nucleic acids), and polymeric molecules (which are comprised of hundreds to thousands of small molecules), all of which are precisely jigsawed together to form a single-celled organism. Each of the many thousands of molecules perform an incredible variety of chemical reactions with that cell's other

molecules and their protein (enzyme) products. How could chance combinations have created such complexity, a living mosaic, within 300 million years after the Earth began to form? Estimates of the time needed for these chance combinations to have produced life have ranged from 100 billion to over 1 trillion years and to completely improbable timespans.⁵

There is also a theory that life on Earth began with some proto-organism, consisting of a few hundred proteins, which later began to self-replicate and evolved into a microbe. However, Joseph finds no evidence that such a creature ever existed here, and if it had, it would never have been able to survive. Even the simplest of single-celled “organisms”, e.g. *Carsonella*, requires 160,000 base pairs of DNA and 182 separate genes in order to live and function. However, it cannot live independently and is parasitic on a living host (by comparison, the genome of *Mycoplasma genitalium*, the smallest free-living microbe, has over 580,000 base pairs of DNA and over 213 genes, 182 of which code for proteins).

If some proto-bacterium or proto-organism similar to *Carsonella* was created on this planet randomly and abiogenetically in an organic soup, then this soup had to randomly create, assemble, organise, and then spew out 182 genes, comprised of over 160,000 base pairs. This, to Joseph, is the equivalent of discovering already as many as 182 computers on Jupiter and claiming they were randomly assembled in the Methane Sea from elementary particles (Joseph and Schild 2010b). Moreover, the resulting creation could not have survived even with 182 genes, unless provided with a living host.

The statistical probability of fashioning one gene from random combinations of all its constituent elements is more than one chance in a hundred million trillion, which means that life could have been created in this way on this planet within a trillion years, perhaps even within 100 billion. However, given that this planet began to form 4.5 billion years ago, coupled with evidence of complex life in the oldest rocks on Earth dated about at least 4.2 billion years ago, it is impossible to conceive how random mixtures could have resulted in a proto-organism which subsequently became a complex microbe in less than 300 million years. And even if it were generated, further questions would arise, such as how did it metabolize energy or engage in membrane synthesis, storage and transfer of information etc.? In this case, the random chance events would also have had to create the necessary proteins (as well as a living host) for these proto-organisms to survive. Here Joseph refers to Hoyle, who calculated the probability of forming just a single protein consisting of a chain of 300 amino acids to $(1/20)^{300}$ or 1 chance in 2.04×10^{390} (Joseph and Schild 2010b). Moreover, a living cell contains more than a single protein. Although the smallest free-ranging microbes consist of at least 700 proteins, even if only 240 to 250 proteins were necessary to create the first replicon or proto-organism, the probability of forming these proteins would be starting from 1 in $10^{29,345}$, provided that all the ingredients were freely available and concentrated in the location of mixing, whereas the most crucial elements, such as oxygen, sugar, and phosphorus, were not freely available on the new Earth (Joseph and Schild 2010b).

⁵ There are scientists who think that the argument of insufficient time is based on purely subjective and arbitrary estimates and that such a period of time may be more than enough. De Duve, for example, claims that the chemistry of life could allow for it to have arisen even within millennia (De Duve 2002: 46).

1.3. Extraterrestrial origins of life on Earth

Throughout his writings on the subject of origination and development of life, Joseph has elaborated numerous facets of the theory he is adhering to on hundreds and thousands of pages, giving detailed references and arguments. Here I have a space just for brief general statements. In any case, given the arguments like those referred to above, it is not unlikely that life on Earth is of an extraterrestrial origin, being inherited from life, the ancestry of which leads to other, more ancient worlds.

Most scientists, including Darwinians, agree that modern-day life evolved from the first simplest creatures on Earth; however, opinions diverge as per their origin. The defenders of panspermia, as Joseph, hold that these relatively simple creatures (as far as even a single-celled organism can be deemed “simple”), having been adapted to survive the extreme environmental conditions of outer space, hypervelocity impacts, UV, cosmic and gamma rays, ionizing radiation etc. (Joseph and Schild 2010a), landed on Earth encased within the material of the aforementioned heavy cosmic bombardment during the first 700 million years after this planet was formed 4.5 bya, and started to thrive after the Earth started to cool down sufficiently. The mechanisms of panspermia and the dispersal of life could be diverse, including solar winds, bolide impact, comets, ejection of populated planets prior to supernova which are then captured by a newly forming solar system (a possible origin of the Earth), galactic collisions etc. (Joseph and Schild 2010a).⁶

The genetic endowment of all creatures ever living on Earth, to Joseph, was contained in the genomes of archae, bacteria, algae (cyanobacteria) and viruses having arrived on Earth from space in the above manner. These first earthlings contained the genes and genetic information for altering the environment, for the “evolution” of multi-cellular eukaryotes, and the metamorphosis of all subsequent species. This genetic inheritance included exons, introns, transposable elements, informational and operational genes, RNA, ribosomes, mitochondria, and the core genetic machinery for translating, expressing, and repeatedly duplicating genes and the entire genome. Once on Earth, prokaryotic genes were initially combined to fashion the first eukaryotes and/or were donated and transferred to unicellular eukaryotes and subsequently expressed in response to biologically-engineered environmental influences and in reaction to viral genes, often in bursts of explosive evolutionary change. Genes biologically alter the environment and secrete waste products, e.g., methane, oxygen, calcium carbonate, sulphate, ferrous iron, etc., which act on gene expression, generating bilateral bodies, eyes, and brains – features which were encoded into the genes inherited from ancestors whose genetic roots leads to other worlds. This inherited extraterrestrial genetic machinery coordinates gene duplication and expression, speciation, and evolutionary innovation, thereby giving rise to a genetically regulated progression, leading from simple to complex creatures, including woman and man (Joseph 2009b).

⁶ From Joseph’s interpretations of myths (see below), in turn, one can see that, concerning the origin of life on Earth, he is more disposed to the so-called “directed panspermia” – the hypothesis that life has been implanted on Earth deliberately by a more advanced extraterrestrial technological society. The term “directed panspermia” was originally introduced by Crick and Orgel back in 1973 (Crick and Orgel 1973). Morris also admits that getting bacteria across interstellar wastes is so problematic that it may be reasonable to suppose that if panspermia occurs at all, it can only be directed (Morris 2003: 26).

More recently Joseph, in collaboration with Schild (Joseph and Schild 2010b), have also developed a theory of where and how life might have first originated in the universe, proposing that all the constituent and necessary elements for creating life are produced during supernovas and then dispersed to nebular clouds, which act as cradles of life, where molecules are incubated over billions of years, having enough time for random assembly, and then accreted on newly-formed planets to thrive. The confluence of evidence from genetics, microbiology, astrobiology, and astrophysics, according to the authors, indicates that life in the Milky Way galaxy began over 10 billion years ago (Joseph and Schild 2010b).

2. Anthropologically-theological implications of the theory of extraterrestrial origins of life

*Can a lizard comprehend a man?
Can a man comprehend a god?
Who dares speak for God?
Perhaps... even the gods have gods....*
(R. Joseph)

Although Joseph himself is not a religious believer, he has been greatly interested in various religious phenomena and has written extensively on them from the perspectives of neuroscience (see Joseph 2000a; Joseph 2001; Joseph 2002/2003).⁷ In this paper, however, I will refer to some insinuations of anthropologically-theological significance found in Joseph's texts on issues related to the origin and development of life (Joseph 2000a: 267f, 273ff; Joseph 2000b: 355ff; Joseph 2002/2003: 18ff). As I mentioned at the beginning, these are just conjectures, belonging to science fiction rather than science. Joseph himself calls these musings "thought experiments" or "flights of fantasy".

2.1. Godlike humans and humanlike gods

The age of the Earth is estimated at about 4.5 billion of years. The age of the universe, in contrast, is unknown. Here I should also note that Joseph – after voluminous, painstaking comparison of pros and cons characteristic of him when exploring any scientifically controversial issue – opts for an infinite, self-recycling universe model instead of the big bang model, by the way, labeling the latter as yet another manifestation of "theology" (e.g., *creatio ex nihilo*) masquerading as science (Joseph 2000b; Joseph 2010). However, the theory of panspermia is not affected much, irrespective of the model of the universe chosen, except that in the infinite universe life could have opportunities to evolve for much longer periods. Still, the 13 or so billion years of the big bang model is also an ample time for the development of life. Likewise with the size of the big bang universe.

If the Earth has been contaminated with all kinds of life from outside, it means that similar genetic seeds have been dispersed on other worlds, unless we are the only survivors, which is unlikely when considering the vastness of the universe. It is more likely that genetic seeds that are similar to and also the ones that are rather different from those sown on Earth have been scattered on innumerable worlds and evolved like we have.

⁷ Among a bucket of other things, he has even written a few "life of Jesus" books on the basis of the gospels, which unfortunately are rather unprofessional, at least in respect of the gospel interpretation (see <http://brainmind.com/ContentsReligion.html>, accessed on 31 March 2012).

On the one hand, over a period of about 1 billion years, the evolution of life on Earth has led from multi-celled organisms to cartilaginous fish, to bony fish, amphibians, reptiles, repto-mammals, therapsids, mammals, primates, humans. Since at least 90% of the human DNA are still dormant or silent, tens of thousands of silent genes – almost 3 billion base pairs – are yet to be expressed, which means that there is a rich potential for further evolutionary metamorphosis on this planet (Joseph 2000b: 356).⁸ Perhaps the so-called “psychic” phenomena and extrasensory perception, presently manifesting in some women and men, are the leading-edge first rudimentary aspects of neurological and functional capabilities which have not yet fully emerged and whose full potentials are still locked in silent genes, like the “language genes” dormant in the genomes of mice, dogs and chimps (Joseph, R. 2002/2003: 22).

Joseph also acknowledges the reality of a spiritual realm similarly experienced by different people all around the planet due to the similarly structured limbic system, “the transmitter to God”, a kind of the seat of the “soul” or “God” within us (Joseph 2002/2003: 266; Joseph 2001). Presently the spiritual faculty is manifest in some and may well be continuing to evolve in the future. It may be, Joseph thinks, that what is experienced in these cases are fragments of an existing spiritual reality that is beyond our ability to fully comprehend. Otherwise, why would the brain evolve the capacity to experience something that does not exist? (Joseph, R. 2002/2003: 22)

On the other hand, given the evolution of life on this planet up to now and the genetic potential yet to be fulfilled – if similar DNA-based life forms exist elsewhere, then those in more ancient corners of the universe “may have evolved beyond modern humans billions of years before the Earth became a twinkle in God’s eye... tens of billions of years before the first upright human emerged from the mists of time” (Joseph 2000b: 356). If we just consider what might be the technological and scientific capabilities of a civilisation that has developed a million of years from the point we are now? Ten million years? A billion years? 10 billion years? Not to speak of an infinite universe...

Since increased complexity and progressive cerebral encephalisation is characteristic of the evolution of brain-based life on this planet, the same could be expected on other worlds. These ancient beings might have evolved new brain tissues, layers of grey matter and, e.g., 8, 10, 12, 20 or more layers of neocortex, gaining incredible neuronal, perceptual, intellectual, mental and limbic/spiritual capabilities, not only a “6th sense” but also, say, a 10th sense, thus completely eclipsing all aspects of current human cognition, perception, memory and intelligence. Moreover, these ancient beings may have long ago genetically engineered their own DNA (while we are just beginning to move in this direction, e.g., in the area of “designer babies”), purposely developing cerebral tissues that enable them to analyse, see relationships, comprehend and manipulate phenomena that we cannot even conceive, much less comprehend.

What the powers and creative capacities of such a being could be? From their perspective, the present human brain and mind would appear to be just a small step above that of a lizard, and conversely, the present human ability to comprehend the powers of an alien brain organised in this evolutionary advanced fashion might be

⁸ Cf. De Duve’s contemplation in a sub-chapter titled “Lucy’s reverie”, comparing a possible state of consciousness of the Australopithecus female some 3 million years ago with that of ours, who have three times larger brains. De Duve also envisages what would happen if the surface area of our cerebral cortex tripled once more (De Duve 2002: 225f).

similar to a lizard's ability to comprehend a present human being. Joseph cannot but admit that such advanced beings, indeed, might appear as "gods" to us, even if they originally were "merely human" (Joseph 2000b: 356f).

Considerations like these may have thought-provoking imaginary anthropologically-theological implications. Humans have a potential to be "gods", whereas "gods" turn out to be all-too human, although unbelievably highly developed. One thing is that the DNA-coded life forms here on Earth may have sprung up by way of panspermia, only being indirectly related to the developments of civilisations elsewhere; yet another thing is directed panspermia, i.e. that these "seeds of life" might be consciously implanted here on Earth by highly developed, much more advanced extraterrestrial beings (or being) – expressed in theological terms – by gods (or God). Imagine a fantasy that such a highly developed, superior being in some dimension of the multiverse, which is not comprehensible to humans at this stage of development, may have been "playing God" and sown the DNA seeds of life on our planet. If, in this way, humans are created in "the image of God" or "gods", from the genetic seed of such a higher being, and if the development goes on, then perhaps humans have the genetic potential to be "gods"? Humans have the potential to become increasingly spiritual and, hence, god-like. Moreover, humans may thus possess, as Joseph puts it, "the genetic capability to not only be like gods, but to transcend god and good and evil" (Joseph 2000a: 266).

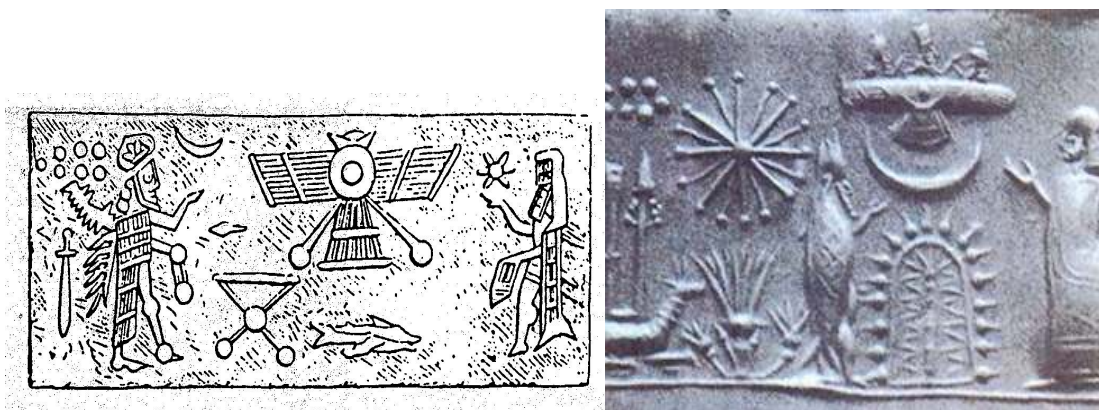
2.2. Tales of so alien, yet so human gods

It is startling to follow how Joseph finds confirmations of his surmises in ancient religious texts, though, to admit, his interpretations are rather amateurish, perceiving parts of those texts as literal accounts of the ancient people's experiences with the all-too human gods, who looked and behaved like humans and possessed human characteristics, including egotism, competition, jealousy, sexuality, irrational rages, tendencies to brag and to take credit for achievements not of their own – such as the creation of the universe, etc. etc. (Joseph 2000a: 275) Joseph's approach implies that this mythmaking is not an anthropomorphic projection of human traits on imaginary beings. Instead, it appears to be some sort of "positive theology", describing the gods as they are and conceiving humans as made in the likeness of these gods.

So, the ancient mythological texts are taken to contain descriptions of real higher, yet so human beings. In the Hebrew Bible, for example, Joseph finds a story of two gods (Joseph 2000a: 211) – the ancient, benevolent Creator God and the Lord God, a capricious alien latecomer from another world, who deceives, kills and murders the innocent and guilty alike – in their competition to win people over to their side. The Gnostics also believe in two gods, distinguishing between the vengeful, murderous god of the Jews and the hidden God of Jesus Christ.

Sumerian mythology is Joseph's favourite. To concede, the story does not seem to have much in common with Sumerian mythology and too much relies on its pseudo-scientific distortion by Zecharia Sitchin, but it is gripping in the context of Joseph's own grand narrative of the origin and development of life on Earth. According to this story (Joseph 2002/2003: 58ff), a pantheon of gods (the Annunaki, meaning "those who came from heaven"), human-like in form, but possessing extraordinary superhuman scientific and technological capabilities, took possession of the Earth to exploit its resources. They also claimed credit for creating the Earth, the

heavens and the stars. The Sumerians rejected these claims and instead revered a mysterious heavenly life force An. They considered the Annunaki for what they were – technologically advanced people, from planet Nibiruo – and they knew that these gods were in turn subject to laws and regulations enforced by yet other gods in different regions of the universe. Different gods through mutual agreements ruled over different regions of the universe and exploited worlds and life forms therein. The Earth was under the Annunakian rule. The Annunaki were space travellers, flying in spherical and winged spaceships, depicted by Sumerians, and, according to their calendar, they came to Earth about 500,000 years ago – when the first proto-Neanderthals emerged.



The chief of gods of the Earth was Enlil, who was arrogant, exploitive and brutal, his wife Ninhursag and half-brother scientist Enki. They were appointed here by other gods and were in charge of depleting Earth of its resources – a task which required workforce that the Annunaki did not have. Enki, the master scientist, carrying a staff in the form of a double helix of two entwined snakes (standing for DNA!), performed genetic experiments, first creating all kinds of transgenic animals for entertainment and then also mixed the genes of gods with those of the archaic humans in order to improve the latter, as they otherwise were so primitive that could not be used as workers. This mixture was impregnated into a female goddess Ninmah (“Eve”) and, consequently, the first modern human being came about. This new breed were superior, then god-like humans or half-gods, who could be instructed in culture, art, science, medicine, technology etc. They were used as workforce and also as overseers of land, livestock and the primitive humans.

Notably, Joseph associates this new human species with Cro-Magnons, who appeared on Earth so suddenly and were so different from Neanderthals, with whom they co-habited the Earth for quite a while until the latter died out. Cro-Magnons were very handsome, 6 foot tall and sported a brain that was one third larger than that of modern humans (Joseph 2002/2003: 66).

Conclusion: the whence of life

I would like to round off this paper in tune with the overall theme of the “What Is Life?” conference. Life may or may not have originated on Earth. There are scientists who believe that life on Earth is unique and present just here, at the same time conceding that life is a universal principle (Morris 2003: 32). There are scientists who would never make such far-fetched conclusions as Joseph but still are ready to admit that life may well be widespread throughout the universe – even if there is no

conclusive evidence and, therefore, what remains is to take life as having arisen on Earth, until proven otherwise (De Duve 2002: 93f; 279).

In any case, it seems that what is at stake here is not the issue as regards where life has originated. It may not really matter whether the first supposed entity that gave a jumpstart to all the other forms of life has originated in the “organic soup” on Earth or somewhere else in the universe. The most perplexing questions still remain, such as: How could life evolve into DNA, genetic information, the cell’s cytoplasm and membrane and the ability to generate energy to reproduce itself with identical DNA chains? How could the information contained in DNA chains arise from inorganic basic elements such as protons, neutrons, electrons etc.? How could the elements neutral with respect to information all of a sudden become the information-bearing nucleotides connected in the DNA double-helix and further reproducing themselves by RNA chains? Moreover, information is useless unless it is read. Who could read the information before the emergence of organic molecules? Both information and reading had to occur at least simultaneously. So, another question is: How could life develop to the moment when the information and its bearer and reader could have emerged simultaneously?

Questions like these call forth the fundamental principle of causality. The question remains: Where did the existing DNA material come from? Especially if we are ready to go along with Joseph’s proposed “law” that only life can beget life. The question of God is also invoked in this way, even if the gods of our planet, worshipped by multitudes of believers of various religions, following Joseph’s account, turned out not as absolute beings but as humans to-be. The question remains: How did the “seeds of life” emerge, then developing from simpler organisms to human-like beings and further on to higher beings and gods? Randomly from “organic soups” in nebular clouds? Or do gods have God? Joseph also poses the latter question. The expected answer should be No, at least for Joseph – who does not believe in “god” (Joseph n.d.b) – if not for the gods. However, I suppose, it does not matter much. Why so? Because there is life – irrespective of whether there is God or not. I conclude with words that Joseph writes on life:

Although it may seem mundane, it is noteworthy that... all living things not only possess DNA/RNA but life. Life is common to all life – what some might call the “soul” or the essence or “spirit of god”. I would argue that life cannot be created or destroyed, and that at the beginning of time and all being, there was life. In the beginning there was life. The universe itself is alive. Although this proposition may appear to bear the stamp of metaphysics, it is in fact based on quantum mechanics and the same theorem proposed by Einstein to account for the indestructibility of energy, i.e. $E=MC^2$. Energy can neither be created nor destroyed. Is not life a form of energy? Do not even the proponents of the “big bang” admit that in the beginning there must have been pure energy? What is this energy but life? Hence, at first there was life. In the beginning there was life – a pure energy that binds us all and which is synonymous with the “spirit of god” (Joseph 2000a: 287).

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⁹ The principal sources of this paper are Joseph's writings on the subject – the listed three books and several articles – and a couple of books by other scientists related to the origins of life that I managed to find in the library of the University of Latvia, considering its scarce resources. As to Joseph's articles, in this list I give the details of the printed articles, although I consulted the internet versions for this paper.

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A short CV of the author

Normunds Titans has a Ph.D. degree from the Lutheran School of Theology at Chicago. Presently he is a part-time associated professor at the Faculty of Theology, University of Latvia, Riga, where he teaches courses in philosophy of religion, philosophy, modern theology, ethics, etc. He is also the author of *Overcoming Metaphysics as a Problem in the History of Philosophy: Contribution of Friedrich Schleiermacher*, Edwin Mellen Press, 2006.