CAN AN ETERNAL LIFE START FROM THE MINIMAL FINE-TUNING FOR INTELLIGENCE?

Ward Blondé — PhD
(Ghent, Belgium)

E-mail: wardblonde@gmail.com

Since modern physicists made more and more advances in precisely measuring the fundamental constants in nature, cosmologists have been confronted with this problem: how do we declare that nature's constants are fine-tuned for the emergence of life? Many cosmologists assume nowadays that the big bang universe originates from a multiverse that consists of very many universes. Some of these must be fine-tuned for life. A fascinating question arises: Would there be any chance on a life after our death in this multiverse?

In this paper, I show two things about the multiverse. First, universes in the multiverse acquire an unlimited amount of additional fine-tuning for intelligent life over the course of many universe generations. Such additional fine-tuning may consist of travelling between universes and an afterlife on a distant planet. Second, evolutionary conservation in the evolution of universes in the multiverse provides a declaration why we observe a universe that roughly has the minimal fine-tuning to support intelligent life.

Keywords: afterlife, maximal multiverse hypothesis, cosmological natural selection, anthropic principle, theory of everything, Occam's razor, metaphysics, big bang, parallel universe, spacetime dimensionality

1. The maximal multiverse hypothesis

Non-existence is a property of languages, for which it can be defined as the set of things about which the language does not talk. Also an existence-related paradox is just a property of some language. Since the establishment of the incompleteness theorems by Gödel, we know that there is no ultimate language [Gödel, 1931]. All things that are not talked about by any language A, are talked about by a more complex language B. Therefore we should not assume that non-existence is a property that physical reality inherits from languages, the devices that we use to describe the observable part of reality. This point of view can be described as the maximal multiverse hypothesis, which assumes that every structure exists and is explained by some more complex structure. The hypothesis is a monism that equates logical and physical structures.

Multiverses have been proposed in a variety of forms, including cosmological, logical and mathematical ones [Greene, 2011]. Cosmologist Lawrence Krauss declares that the entire multiverse can be considered as the ultimate flavor of nothingness [Krauss, 2012]. An initial segment of the shortest computer program that computes all computer programs, was proposed by the computer scientist Jürgen Schmidhuber [Schmidhuber, 1997], causally isolated possible worlds by the philosopher David Lewis [Lewis, 1986] and an ensemble of all the mathematical objects with finite statistical weights by physicist Max Tegmark [Tegmark, 1998].

If everything exists, then also every conscious continuation exists for a being that lost its consciousness. This idea holds the promise of an eternal life in the multiverse.

But how can it be reconciled with the rigid physics that we observe, which appears rather hostile to life? An explanation for this paradox will be proposed in this paper.

It has to be acknowledged that the content of this paper will appear as very speculative to most scientists. In fact it is possible to distinguish three layers of speculative hypotheses. The first layer is the maximal multiverse hypothesis, from which an eternal life follows directly. This hypothesis is a purely logical matter that is related to the contradiction in 'There are things that do not exist' or 'Things exist, which do not exist'. I will defend the maximal multiverse hypothesis further in Sections 2 and 3. The second layer deals with the minimal assumptions that have to be made to give a view on how the transition to an afterlife might possibly happen in practice. Universe DNA, uterus conditions and 4D life are some examples of phenomena that are hypothesized in this layer. Their existence can be derived from the first layer, the maximal multiverse hypothesis, but it is much harder to prove their importance with respect to other unobservable phenomena. The third layer is beyond the scope of this paper. This layer is about the infinitely many additional fine-tunings in the maximal multiverse. Only infinitely many 'implausible' hypotheses, which seem to work absolutely against Occam's razor, can declare how the maximal multiverse reshapes itself until only one consciousness is selected as the most powerful in reproducing itself. An example of a hypothesis in the third layer is the skipping of a Darwinistic evolution by higher-dimensional life for speeding up the creation of an intelligent civilization. In order to retain some credibility, the third layer will be dealt with only minimally.

All in all, the assumptions have a remarkable explanatory power. Not only do they declare why there is something at all, or why there is sufficient fine-tuning for intelligence. They also declare why we observe exactly as much fine-tuning as we do today, and why we cannot observe an afterlife, uterus conditions and 4D life yet.

2. Other multiverse hypotheses

The proposals of Schmidhuber, Lewis and Tegmark are not, or not entirely, compatible with the maximal multiverse hypothesis. Though let us begin with considering the minimal multiverse hypothesis, which is assumed by many physicists through a misunderstood interpretation of Occam's razor [Forrest, 1982]. The minimal multiverse is large enough to declare our observation that the laws of physics are fine-tuned to support intelligent life through an observation selection bias [Bradley, 2009]. On the other hand it uses Occam's razor to shave away as many universes as possible. Occam's razor requires indeed the minimization of ontological things; however, it has two radically opposite interpretations. The ambiguity has been described as elegance versus parsimony, or qualitative versus quantitative parsimony [Cutcliffe and Harder, 2009]. (Quantitative) parsimony can be interpreted as the minimization of things that exist. Elegance and qualitative parsimony minimize the number of things that are needed to describe the universe, or the number of types of things that exist.

The maximal multiverse has only one type of thing, since it equates logical and physical things. Its description requires zero things, since it suffices to describe the things that do not exist. Therefore the maximal multiverse hypothesis is maximally elegant. Using quantitative parsimony instead, we derive the useless idea that planets in other galaxies do not exist and are at best replaced by a single cosmological value. Whereas the dual nature of Occam's razor may be useful to construct the debatable concept 'observability', only the qualitative parsimony, or elegance, is useful with regard to existence. Therefore Occam's razor favors maximal existence by shaving away all the descriptional elements, like ad-hoc laws and parameters. Instead of requiring an inexplicable creation from nothing, things simply exist, just like natural numbers simply exist.

A second multiverse model was proposed by Schmidhuber. He claims that the observable universe is an initial section of the computation of the shortest computer program that computes all computer programs. We would be part of the first initial section that is compatible with our existence. However, the shortest computer program that computes all computer programs, computes infinitely many initial sections that are compatible with our existence. Why would it have to be the first? A further argument could be proposed that it has to be the first because the computation runs in a world with resource limitations. But this implies that we are in fact computed by an initial section that computes the world with the resource limitations. This initial section is also compatible with our existence, but it is not the first with this property. A second problem is that there seem to be many worlds that are compatible with our existence, but that would be computed on a shorter initial section. Why does the surface of Mars have such a great resolution? The computer program that makes a check for the presence of life on a planet can compute us faster than the computation of the observable universe. This results in intelligent life that appears in an earlier initial section of the computation of the shortest computer program that computes all computer programs.

A logical argument by Lewis appears to be very similar to the maximal multiverse hypothesis: every possible world exists and the observable world is just the actual world. However, Lewis added to this hypothesis that the possible worlds are causally isolated. Consider any two causally isolated worlds A and B. If every possible world exists, then there exists a third world C that multiplies both A and B many times within a system that takes all the properties of A and B into account. This means that A and B have a bidirectional causal influence on each other. The existence of all the causally isolated possible worlds is therefore paradoxical. The observable world must be the causal output of all the possible worlds.

Tegmark proposed the Mathematical Universe Hypothesis (MUH): the universe (or multiverse) is the ensemble of all the possible mathematical objects. This ensemble has zero free parameters and is therefore — so far Tegmark agrees with me — favored by Occam's razor. With regard to the number of times the mathematical objects appear, they are all given an a priori equal statistical weight. Tegmark realizes that these a priori weights must be turned into unequal probabilities that sum up to 1, by taking a relation like 'is computed by' into account. For these computations he takes the Turing machine as standard in his Computable Universe Hypothesis (CUH). A Turing machine is a computer with infinite memory capacity, but which cannot, unlike a hypercomputer, complete an infinite number of steps in a finite time. This seems to put a limit on the complexity of the universe. Moreover, it does not become clear how probabilities can be assigned without making arbitrary choices. Uncertain probabilities, which are neither zero nor one, will disappear in the process of taking an always longer chain of computations in computations into account. The final result of this process is an outcome that is itself not Turing-computable (see Table 1) [Blondé, 2015].

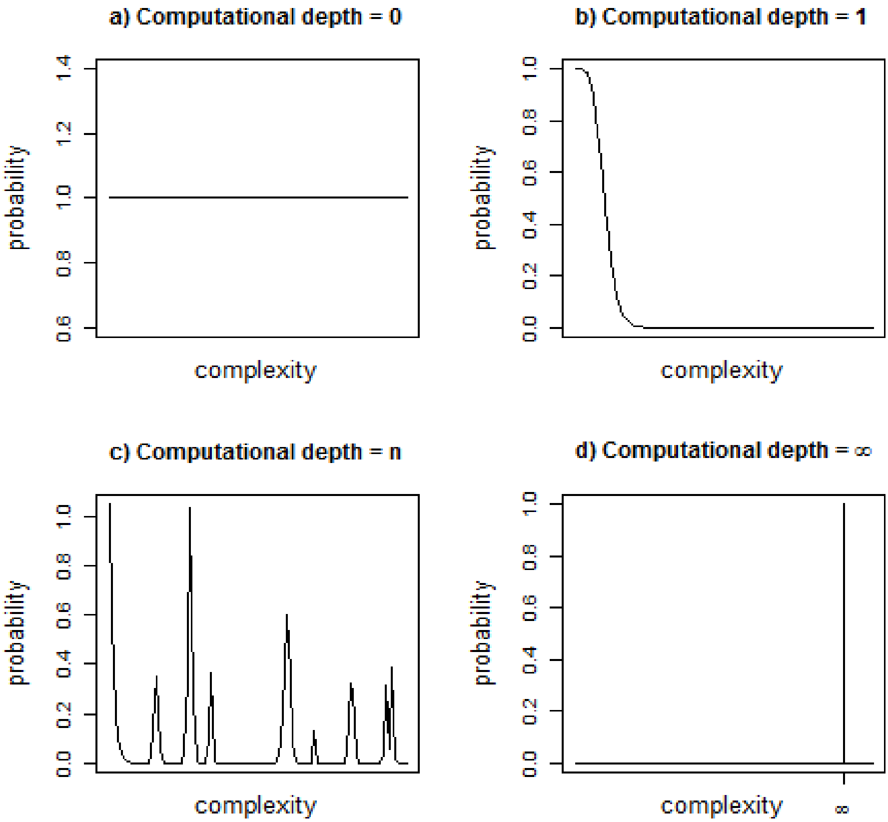

Table 1: The probability distribution of mathematical objects becomes infinitely sharp, favoring an infinitely complex world, once we consider the idea that they can be computed by programs, computed by programs that compute programs, and so on ad infinitum. Graph a) shows the a priori weights. Graph b) penalizes more complex computations through an exponentially or hyperexponentially decreasing function *f*. Graph c) shows that for every decreasing function *f*, there exist infinitely many computable functions that increase faster. Self-reproducing complexity can use these in their multiplication factors. Graph d) shows the infinitely sharp probability distribution at infinity. Penalizing complexity and obtaining uncertain probabilities have failed.

3. Required background theories

Adopting the maximal multiverse hypothesis implies that every universe that can be denoted in a language, described by a theory, or computed by a computer — a normal computer, a Turing machine, or a hypercomputer — can only be a little part of everything that exists. Such universes are therefore descriptionally finite and are reproduced infinitely many times within the maximal multiverse, competing with all other descriptionally finite things. The maximal multiverse cannot be computed or described through finite means and is infinitely complex.

A multiverse compatible with the maximal multiverse hypothesis consists of all the multisets with infinite multiplicities, for which theorems can be proven through transfinite induction [Blondé, 2015]. The multiplicity of a thing indicates how many times it occurs in the maximal multiverse. The distribution of multiplicities must be such that it remains invariant after any arbitrary number of self-reproductions of things (or universes) in the maximal multiverse. Otherwise we can identify a thing that is not part of the maximal multiverse. For every set S of things, it follows that the thing H with the highest multiplicity occurs at least infinitely many times more often than all the other things in S together. In this way, we arrive at the infinitely sharp probability distribution in Table 1 d). Within the whole maximal multiverse, H must be your consciousness. Somewhat perplexing, your consciousness is the definite and unique outcome of the most complex of all hypercomputations.

Given that self-reproducing universes exist, we can infer that the laws of Darwinistic evolution determine the multiplicities of universes in the multiverse [Darwin, 1859]. Since there is no limit on the number of times that a universe can reproduce, non-reproducing universes are outnumbered with factor infinity. For this reason we must assume that our big bang universe can reproduce itself, including its particles, its fundamental constants and its laws of physics. This idea, called cosmological natural selection, was first proposed by cosmologist Lee Smolin, who believes that black holes cause new big bangs [Smolin, 1997]. Smolin's reproducing universes have been called 'fecund universes'.

The theory of cosmological natural selection has been elaborated into cosmological artificial selection by a number of authors [Harrison, 1995; Crane, 2010; Vidal, 2010; Stewart, 2010; Vaas, 2012]. Whereas Crane suggests that new universes may be an accidental by-product of certain engineering actions, Harrison, Vidal, Stewart and Vaas believe in an intentional reproduction by intelligent, technologically advanced life. Cosmological selection, natural or artificial, provides us with the prospect of a collective afterlife in a child-universe, where similar civilizations as our own will prosper.

The maximal multiverse hypothesis can amend cosmological selection proposals by assuming the existence of unknown 'uterus' conditions, outside the known spacetime (see Figure 1). These uterus conditions reckon with resource limitations in the dimensionally larger world in which our spacetime is located. For comparison, if every egg cell would be fertilized and grow, there would be too many children to raise for the parents. If our spacetime ever started reproducing via black holes, or in any other way, then some primordial uterus conditions must have preexisted in this dimensionally larger universe (see Figure 2). These primordial uterus conditions have their parallel in the prebiotic soup of molecules in which life on Earth may have originated [Bada, 2004].

Given that universes are the result of evolution, we will need to understand what it means that the core mechanisms to organize and reproduce our big bang universe are evolutionarily conserved [Hughes et al., 2012]. Core biological entities, like RNA molecules, and early developing entities, like fertilized egg cells, operate in conditions that are similar to evolutionarily early conditions, like fluid water rich in biomolecules. Similarly, core actors, like the scientists that might one day recreate our big bang universe, and early developing actors, which might be us today, would find themselves operating in the earliest physics that enabled intelligence-assisted reproduction of universes. This point will be developed meticulously in this paper.

Figure 1: The formation of a new big bang. In the center of a black hole, an elementary volume of space can be brought in uterus conditions that enable a big bang with similar properties as the parent universe. This draws a parallel with biological egg cells, which also start to grow exponentially when they are fertilized. One spatial dimension was taken away for visualization.

Apart from a collective afterlife in a child-universe, this paper also provides scientific arguments for a personal afterlife. This has been proposed by others as well. One proposal is the simulation argument of Nick Bostrom [Bostrom, 2003], who argues that we might very well be computer simulations that are run by technologically more advanced human beings. If such human beings can simulate our lives so precisely, then they must also be able to run an afterlife. Bostrom proposes a finite stack of simulations in simulations, but offers no declaration for the highest world in the stack. This world would not be simulated by any higher world.

Concluding this section about required background theories, we can say that modern physicists typically assume that the universe is essentially hostile to life. Some authors have shown escape routes, leading to the possibility of a collective or even a personal afterlife. The theory presented in this paper explains why the universe appears to be hostile to life, without really being so. The key to the answer lays in an infinite version of what is known in biology as evolutionary conservation.

4. Fine-tuning in the maximal multiverse

I will investigate the fine-tuning for intelligence (or a high complexity) of universes in relation to their number of spatial dimensions. Some geometrical terms will be defined here for this purpose. Universes are n-dimensional (hyper)spaces in which subuniverses and configured entities can be located. Configured entities consist of many entities in a specific geometrical position. Examples of configured entities are molecules and organisms. Two complexity-related terms have opposite relations to the number of spatial dimensions: findability — the speed with which a certain type of interaction partner can be found — and configurability — the number of possible bonds between entities, like chemical bonds. Complexity emerges fast and easily in regions where both findability and configurability are high. On the other hand, configurability increases with more spatial dimensions, while findability decreases. With these definitions, we can introduce five assumptions about fine-tuning for complexity in universes in the maximal multiverse. The scientific field from which they are derived, is given between brackets:

– **Indefinite parthood (logic)**: A universe can itself be considered as a form of complexity. Therefore the emergence of a fine-tuned universe A has to be the result of fine-tuning that is present in a universe B that has more spatial dimensions and that has A as part. In logical terms: for every logical entity, there exist infinitely many (hyper)computers that compute the logical entity. The maximal multiverse is fine-tuned for the emergence of all possible complexity in all possible universes. A graphical representation of universes related through an indefinite parthood can be found in Figure 2.

– **Fastest dimensionality (geometry)**: Given the opposite relations of findability and configurability with the number of spatial dimensions, it is assumed that 3 spatial dimensions are most optimal for the fastest development of fine-tuning for intelligent life [Tegmark, 1997]. Higher dimensions are slower and slower, because configured entities require more and more steps to form and need more and more time to find their interaction partners.

– **Fecundity (biology)**: Only universes that are fine-tuned to reproduce themselves will survive through cosmological natural selection. Therefore universes need to have universe DNA in some form, which encodes their laws of physics, which can be copied to the next generation and which can modify over many generations. The quantum mechanical structure of the spacetime of our big bang universe might be considered as a part of such universe DNA. Other parts must be unobservable for us.

– **Resource limitations (biology)**: The reproduction of a universe A within a universe B is hampered by resource limitations within B.

– **Degeneration (biology)**: Complexity that is not used, directly nor indirectly, to enhance the fecundity of its universe, will disappear through random mutations of its universe DNA.

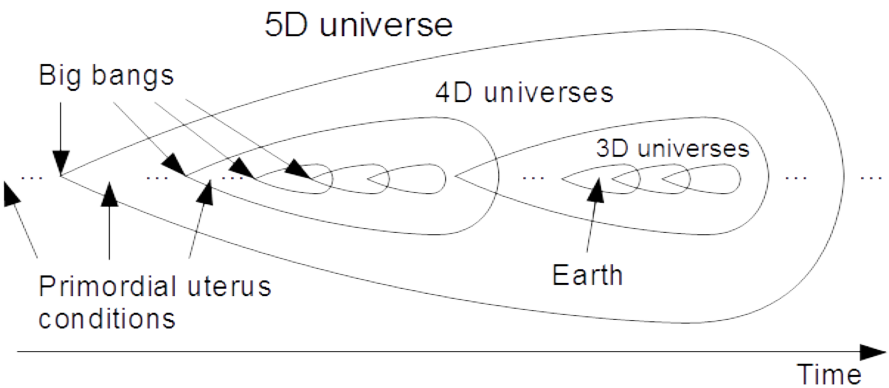

Figure 2: A possible visualization of the maximal multiverse as a fractal that has no beginning in time, will never end, and has infinitely many spatial dimensions.

The optimal speed for creating intelligence in three spatial dimensions is an assumption for which it is very difficult to compute the plausibility. Therefore, it is also derived from the observation that we live in a 3D universe. Let us analyze what this assumption means. Consider a reference universe with n spatial dimensions, with $n > 3$. Assume that this reference universe is fine-tuned for life, so that the laws of physics vary from region to region and so that all sorts of subuniverses and configurable entities emerge within this reference universe. The optimality of 3 spatial dimensions implies that the first self-reproducing, intelligent entities will appear inside subuniverses with 3 spatial dimensions.

The creation of intelligent 3D entities requires a number of random, evolutionary steps. First of all, a 3D universe has to form within the reference universe. According to the model in Figure 2, this might happen via the formation of dimensionally intermediate universes. The first self-reproducing entities within a 3D universe will probably be specific pools of molecules, like primitive carbon molecules [Robertson and Joyce, 2012]. But before that, gravity and 0D elements like stars had to form to increase the density — and hence the findability — of the most basic components of these molecules. 2D entities had to emerge, like cell membranes that prevent the pool from disintegrating and planetary surfaces that increase the density of the molecular clouds formed by stars. Some more random fine-tuning was necessary to create stable 1D entities like RNA and DNA, which contain information with which the optimal composition of the pool of carbon molecules can be regulated. In this situation intelligent, technological life can emerge that can accidently increase the fecundity of its 3D universe through its actions.

What these actions would be and how they would harvest resources in the reference universe more efficiently, is yet unknown. We might think of the creation of a particle accelerator or the manipulation of the environment of a black hole, or even both together. It can be any action that has a beneficial effect on the primordial uterus conditions in the reference universe. Even a mere signal, unobservable for the 3D life, that starts a chain reaction of equally unobservable events, can be enough. Whatever they are, it follows from the assumptions of resource limitations and degeneration that they are very rare and that we exist for the purpose of fulfilling them efficiently. This is where cosmological natural selection gradually starts to turn into cosmological artificial selection.

5. Minimal and additional fine-tuning

Let us call the laws of physics and the fine-tuning that are necessary to produce intelligent, technological 3D life that increases its universe fecundity, the minimal laws of physics and the minimal fine-tuning for intelligent life. The difference in fine-tuning between a lifeless, self-reproducing 3D universe and the minimal fine-tuning for life must have been bridged by random mutations in the universe DNA of the 3D universe. These mutations are not necessarily rewarded in the meantime, since the formation of a self-reproducing RNA molecule might not improve the fecundity of the 3D universe. This is what intelligent design researchers have been calling irreducible complexity [Behe, 2009]. However, it is much less a problem in the evolution of a primitive 3D universe, since the amount of information needed to encode our elegant physics is much smaller than the amount of information needed to encode the development of a biological organism. For example, the fine-tuning of gravitational contraction versus vacuum space expansion requires only about 120 decimal places [Carroll, 2001], as compared to millions or billions of decimal places to encode the genome of a biological organism [Pennisi, 2001]. Therefore the leaps over irreducible complexity can be much greater. Moreover, we can assume that the reference universe is fine-tuned for the emergence of primitive 3D universes during an enormous timescale. This leaves enough time to make the leap towards the minimal physics.

The laws of physics and the fine-tuning that emerge after the establishment of the minimal 3D laws of physics will be called additional laws of physics and additional fine-tuning. Such additional laws can sustain intelligent 3D life and thereby create even more fecundity of the 3D universe. I will give three examples of additional fine-tuning:

– **Universe fertilization** can take place when early, bacterial life-forms travel between 3D universes via temporary or permanent wormholes [Flamm, 1916]. This can initiate a Darwinistic evolution when the bacteria arrive at a suitable planet [Raulin-Cerceau et al., 1998].

– **Travelling and communication between universes** involves the possibility of wormholes that are sufficiently controllable to enable intelligent beings to travel within or between 3D universes (see Figure 3). Such travels can establish a parent-child contact between universes, which can be very beneficial for the fecundity of the child universe.

– **Higher-dimensional life** has almost unlimited possibilities to sustain lower-dimensional life. 4D organisms can use the already existing 3D universes as a resource. Once they have become dependent on 3D complexity, they will increase the fecundity of 3D universes for their own benefit. They can graft on 3D organisms and incorporate them as organs of a 4D body. After that they can repair the 3D organisms, create backups and provide superintelligent guidance. On the planetary scale they can do geo-engineering, overcome irreducibly complex steps in a Darwinistic evolution, or even skip uninteresting parts of an evolution altogether.

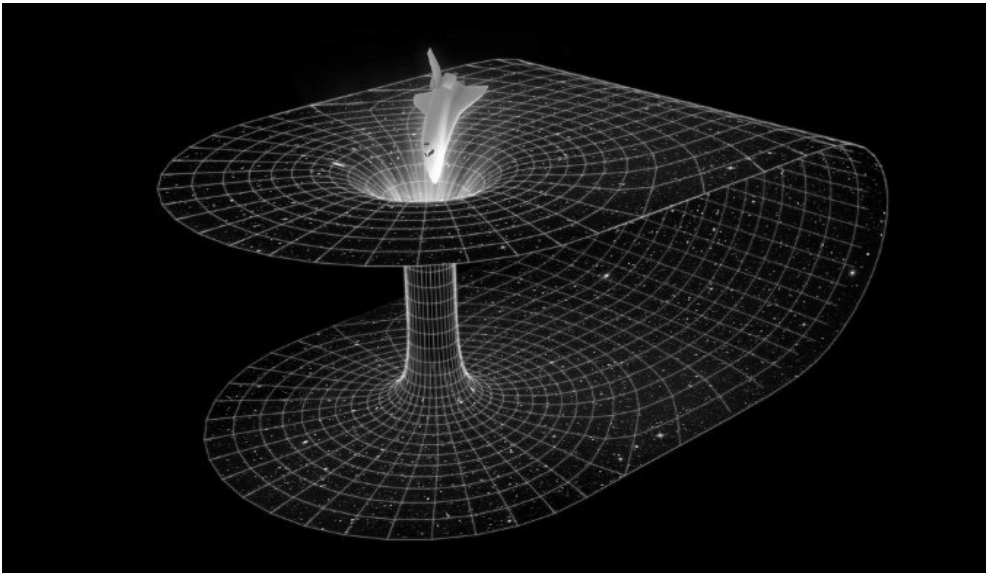

Figure 3: A wormhole. Wormholes can connect distant places in the multiverse, including even different universes, originating from different big bangs.

It must be clear at this point that the existence of additional fine-tuning is not verified by any experimental evidence. The question arises how our apparently minimally fine-tuned 3D universe can ever compete with universes that have lots of additional fine-tuning? Is our universe evolutionarily early in all the infinitely many dimensionally larger universes of which we are a part? We should at least expect to observe interactions with higher-dimensional beings or alien parents who could explain us the true nature of the universe and who could help us to create a new big bang. Yet, we do not make such observations.

6. Hiding additional fine-tuning for science

The declaration for the absence of observations of additional fine-tuning can be found in the concept of evolutionary conservation. Actually the whole evolution of science and religion of a 3D intelligent civilization might be evolutionarily conserved. If 3D organisms from an ancestral universe or 4D organisms would show their existence too early to us, the gradual progress of science would suddenly make a leap. This would prohibit a predictable reproduction of our big bang universe. Even though we, humans, have hands, brains and chirurgical tools, we do not start to raise our embryos before they have grown for nine months in a uterus according to an evolutionarily conserved plan. If universes are like biological organisms that reproduce with the help of intelligent life, then the same reasoning holds for the development of science in a civilization.

Let us, for the sake of this argument, consider a concrete example of evolutionary conservation in the intelligence-assisted reproduction of an early, minimally fine-tuned 3D big bang universe. A 3D big bang universe is early within its dimensionally larger 4D universe if no 4D life has evolved yet. It follows from the assumption about the fastest dimensionality that 4D complexity enters the scene much later than the development of the minimal fine-tuning in 3D subuniverses of the 4D universe. If this was not the case, then scientifically observable 4D phenomena that can materialize, delete, deviate or signal 3D particles, would certainly be evolutionarily conserved in the cellular machinery of most species on Earth.

Imagine that the theory of cosmological natural selection became a religious doctrine in the early 3D civilizations. The adherents of this religion believed it was the task of intelligent life to support the reproduction of their 3D universe as much as possible. The religion typically became successful and spread through the galaxy, thereby effectively increasing the fecundity of the early 3D universes. Without the presence of any higher-dimensional intelligence, this reproduction plan remained intact for many 3D universe generations.

Long after the development of the minimal fine-tuning for intelligent life within such early 3D subuniverses, the 4th dimension finally started to develop basic structures that could self-reproduce, like self-reproducing pools of 4D molecules and 4D bacteria. This was followed by a 4D Cambrian explosion of new life forms [Valentine et al., 1999]. Many, if not all of these will have been dependent on the 3D complexity that had already evolved, as a surface to graft upon. Only by grafting on 3D complexity, they could increase findability sufficiently to interact with each other. Similarly, we are dependent on the 2D surface of a planet to interact with other 3D entities.

In order not to disturb the religiously guided reproduction plan of the 3D universes on which they were dependent, the 4D life forms could not intervene in the 3D worlds. Whenever they did intervene, different religions developed, which either created less fecundity for the 3D subuniverse, or even too much fecundity. An unplanned excess of fecundity can be compared to a cancer that disrupts the superreligiously engineered complexity within the 4D universe. Because 3D scientists have powerful methods to investigate the world, 4D life had to be very strict in its non-intervention. Simple 4D organisms could stick to not intervening at all. A more advanced way of not intervening is by becoming more intelligent than 3D scientists and outsmarting them with statistics. Instead of changing the development of religions by intervening openly, 4D life can at most guide their development secretly — below the radar of science — to increase their precision.

7. The development of an afterlife

The 4D organisms that mastered the rules of non-intervention could grow to very large and complex life that remained entirely invisible for science in the 3D worlds. Some 4D life will have specialized in preferred 3D structures, organisms and eco-systems upon which they could graft. And this is where afterlives enter the scene, at least for animals in regions of the multiverse that are never visited by intelligent life. The 4D life could multiply itself by copying its preferred 3D graft organism many times on a suitable planet. In fact 4D organisms can create a continuously evolving 4D sculpture of a 3D body, thereby preserving each 3D organ in its most healthy state. From this sculpture they can take a 3D picture at any time. In this way, 4D life uses 3D subuniverses to multiply itself, without destroying the roots of the multiplication of these subuniverses, which is still dependent on an evolutionarily conserved development plan of intelligent 3D civilizations, their sciences and their religious beliefs.

Does this reasoning imply that intelligent beings are the only 3D organisms that are not granted an afterlife with the help of 4D organisms? In fact this is not the case. The only thing the 4D intelligence has to take care of, is that the afterlives of intelligent beings remain hidden, in particular for scientific observations. By adequately organizing intelligent 3D civilizations in space and time, the copied civilizations will not disturb the development plan of the original civilizations. In this way, the 4D universes create their own, highly complex order, which has to remain unobservable for those 3D beings that are responsible for the reproduction of their 3D subuniverse.

The discovery of a human afterlife within a 4D universe makes it even more plausible that the development of science and religion in our 3D civilization is evolutionarily conserved. Surely the complex order in the 4D universe, like the distribution of people over afterlife planets, is strongly affected by the beliefs, the technology and the democratic values of these people. Therefore the development plan of our civilization simply cannot be changed anymore. We must conclude that the multiverse keeps its secrets and its conserved plans to warrant its own finely balanced reproduction. The discontinuous nature of the number of spatial dimensions has resulted in a permanent gap between the observation of the minimally fine-tuned physics and that of the physics that enable an afterlife.

8. Recapitulation

The idea that everything exists seems to run counter to the fact that we observe the minimal fine-tuning. Would we not rather be born in a universe with several millions of spatial dimension, as an organism with an enormous brain, with billions of sensory organs, and which looks down on all the slowly growing organisms with a lower complexity? Or either as the 3D child of a 3D parent on one of many afterlife planets? At least, within any high-dimensional universe that contains an uninformed, evolutionarily conserved civilization like ours, we must be entirely outnumbered by the many afterlife planets. Can it statistically be declared that we would grow up in a core civilization that has the task to reproduce our big bang universe — including a vast number of associated afterlife universes? If the presented theory is carefully compared to biology, it turns out that we must be in a sort of egg-cell within an egg-cell, and so on for infinitely many layers. This seems to be a very improbable position.

Here we must think again at the properties of infinite multiplicities. Your consciousness exists infinitely many times more often than that of all the other people in the maximal multiverse together. This means that for every universe that is full of conscious people, there are infinitely many more in which your consciousness is the only one. Your chosenness is an artificial selection that must have everything to do with the capacity of our civilization to play a central role in the further reproduction of universes in the multiverse. It indicates that the rules for selecting the ideal life, fit for the most augmented reproduction, have been evolutionarily conserved, even before more complex beings in the multiverse got the chance to select themselves. A similar effect declares why holy books and prophets originate from a certain period in the evolution of mankind: as the books and the prophets were more and more glorified, later books and people were not up to the comparison with them any longer.

Another way to look at this statistical paradox is to realize that it is logically impossible to be born as an omniscient being. It takes time to grow and learn. Since uncertain probabilities are not compatible with the maximal multiverse hypothesis, a unique anchor-point is required from where the consciousness with the highest multiplicity must start to learn. This anchor-point is evolutionarily conserved and has therefore gradually grown towards an infinitely special position within the whole multiverse. For this reason, we started developing in a rigorously maintained image of a minimal physics, at the turning point from natural to artificial selection and poorly informed about life, the universe and everything.

We can conclude that our observation of the minimal fine-tuning for intelligence is certainly not contradictory to an eternal life.

References

Bada, Jeffrey L. “How life began on Earth: a status report”. Earth and Planetary Science Letters 226(1), 2004. 1–15.

Behe, Michael J. “Irreducible complexity: Obstacle to Darwinian evolution”. Philosophy of Biology: An Anthology 32, 2009. 427.

Blondé, Ward. “An Evolutionary Argument for a Self-Explanatory, Benevolent Metaphysics”. Symposion 2(2), 2015. 143–166

Bostrom, Nick. “Are we living in a computer simulation?” The Philosophical Quarterly 53(211), 2003. 243–255.

Bradley, Darren. “Multiple universes and observation selection effects”. American Philosophical Quarterly, 2009. 61–72.

Carroll, Sean M. “The cosmological constant”. Living Reviews in Relativity 4(1), 41. 2001.

Crane, Louis. “Possible implications of the quantum theory of gravity: An introduction to the meduso-anthropic principle”. Foundations of Science 15(4), 2010. 369–373.

Cutcliffe, John R. and Harder, Henry G. "The perpetual search for parsimony: Enhancing the epistemological and practical utility of qualitative research findings". International journal of nursing studies 46(10), 2009. 1401–1410.
Darwin, Charles. "The Origin of Species by Means of Natural Selection: or, the Preservation of Favored Races in the Struggle for Life". N.Y.: AL Burt (2009), 1859.
Flamm, Ludwig. "Comments on Einstein's theory of gravity". Physikalische Zeitschrift 17, 448. 1916.
Forrest, Peter. "Occam's razor and possible worlds". The monist 65(4), 1982. 456–464.
Gödel, Kurt. "Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme I". Monatshefte für mathematik und physik 38(1), 1931. 173–198.
Greene, Brian. The Hidden Reality: Parallel Universes and the Deep Laws of the Cosmos. N.Y.: Vintage, 2011.
Harrison, Edward R. "The natural selection of universes containing intelligent life". Quarterly Journal of the Royal Astronomical Society 36, 193. 1995.
Hughes, Jennifer F.; Skaletsky, Helen; Brown, Laura G.; Pyntikova, Tatyana; Graves, Tina; Fulton, Robert S.; Dugan, Shannon; Ding, Yan; Buhay, Christian J.; Kremitzki, Colin et al. "Strict evolutionary conservation followed rapid gene loss on human and rhesus Y chromosomes". Nature 483(7387), 2012. 82–86.
Krauss, Lawrence M. A Universe from Nothing. N.Y.: Simon and Schuster, 2012.
Lewis, David K. On the Plurality of Worlds, Volume 322. Oxford: Blackwell, 1986.
Pennisi, Elizabeth. "The human genome". Science 291(5507), 2001. 1177.
Raulin-Cerceau, Florence; Maurel, Marie-Christine and Schneider, Jean. "From panspermia to bioastronomy, the evolution of the hypothesis of universal life". Origins of Life and Evolution of the Biosphere 28(4-6), 1998. 597–612.
Robertson, Michael P. and Joyce, Gerald F. "The origins of the RNA world". Cold Spring Harbor perspectives in biology 4(5), 2012. a003608.
Schmidhuber, Jürgen. "A computer scientist's view of life, the universe, and everything". In Foundations of Computer Science, pp. 201–208. Springer, 1997.
Smolin, Lee. The Life of the Cosmos. Oxford University Press, 1997.
Stewart, John E. "The meaning of life in a developing universe". Foundations of Science 15(4), 2010. 395–409.
Tegmark, Max. "On the dimensionality of spacetime". Classical and Quantum Gravity 14(4), L69. 1997.
Tegmark, Max. "Is 'the theory of everything' merely the ultimate ensemble theory?" Annals of Physics 270(1), 1998. 1–51.
Vaas, Rüdiger. "Cosmological Artificial Selection: Creation out of something?" Foundations of Science 17(1), 2012. 25–28.
Valentine, James W.; Jablonski, David; Erwin, Douglas H. "Fossils, molecules and embryos: new perspectives on the Cambrian explosion". Development 126(5), 1999. 851–859.
Vidal, Clément. "Computational and biological analogies for understanding fine-tuned parameters in physics". Foundations of Science 15(4), 2010. 375–393.