

## ***How could science be different?***

### ***Physics vs Mathematics, Artificial Intelligence***

When I learned physics in private with the teacher, when I asked why, for example why the atmosphere moves with Earth? He would answer, it's physics, it's not mathematics, just summarize the standard model, academic view. Do not suppose there is ether or aether whatever, just learn by heart and answer the same.

So, I found out that for science it was important to abide by academic order, gain more and more standard knowledge, gain more and more empirical data, and not analyze yet and not ask why yet. Basically, I think it works this way: if you want more knowledge about cosmology, just summarize the standard model and wait for James Webb, for example, or if you want to know more about particle physics, summarize the standard model and wait for LHC.

I suppose, we currently are at the stage, when we only start to ask questions like why. Now CERN data, Webb data, etc... are open source, you can download, analyze, and make your theories interdisciplinary, whatsoever. Make logical connections between subjects, like detective Sherlock Holmes.

We can also use Artificial Intelligence to do the same, but presently AI is at the level of yet mystical thinking. In the past, we relied upon it heavily. We can improve AI and it will be at Dr. Watson's level soon, and I do not know except for chess if AI at some point will outperform us in thinking why and how, or if it will be on par.

### ***Aliens and parallel universe/s, freedom in the Universe***

When I was asked at first: do you believe in reusable rockets? My words were: Elon Musk. At that point, SpaceX had failures with Falcon 9 rockets, but my intuition proved right later. First, I did not have enough information and detailed knowledge of rocket science to be sure it would succeed, so I relied on basic knowledge and on the vision of Elon, I believed in him.

Space X was aiming for the future: for the Moon, Mars, and beyond. In general, there was a second good choice of winged reusable rockets. While it may have worked on Earth, it would not work on solar system planets without dense atmospheres and aircraft runways. It would work after terraforming them but not before.

Then I learned about titanium grid fins for controlled entry comeback and entry burns, and now I am wondering when and how the SpaceX Starship will proceed. So, when our human logic works consistently, it does things in the right order and priority.

As some of you may know of the Kardashev scale, there are: A type I civilization is able to access all the energy available on its planet and store it for consumption. A type II civilization can directly consume the energy of a star. Finally, a type III civilization can capture all the energy emitted by its galaxy. Let's suppose in general it is a consistent theory, with the probability of being plausible. So, the question is where are the aliens? Are they common/uncommon? Are we able to detect them? If not, why? Are we alone?

Let's change the topic to parallel universe/s. The origin of the parallel universe conjecture is closely connected with the introduction of the idea of quantum mechanics in the early 1900s. Quantum mechanics, a branch of physics that studies the infinitesimal world, predicts the behavior of nanoscopic objects. Physicists had difficulties fitting a mathematical model to the behavior of quantum matter because some matter exhibited signs of both particle-like and wave-like movements. For example, the photon, a tiny bundle of light, can travel vertically up and down while moving horizontally forward or backward.

Such behavior starkly contrasts with that of objects visible to the naked eye; everything we see moves like either a wave or a particle. This theory of matter duality has been called the [Heisenberg Uncertainty Principle](#) (HUP), which states that the act of observation disturbs quantities like momentum and position.

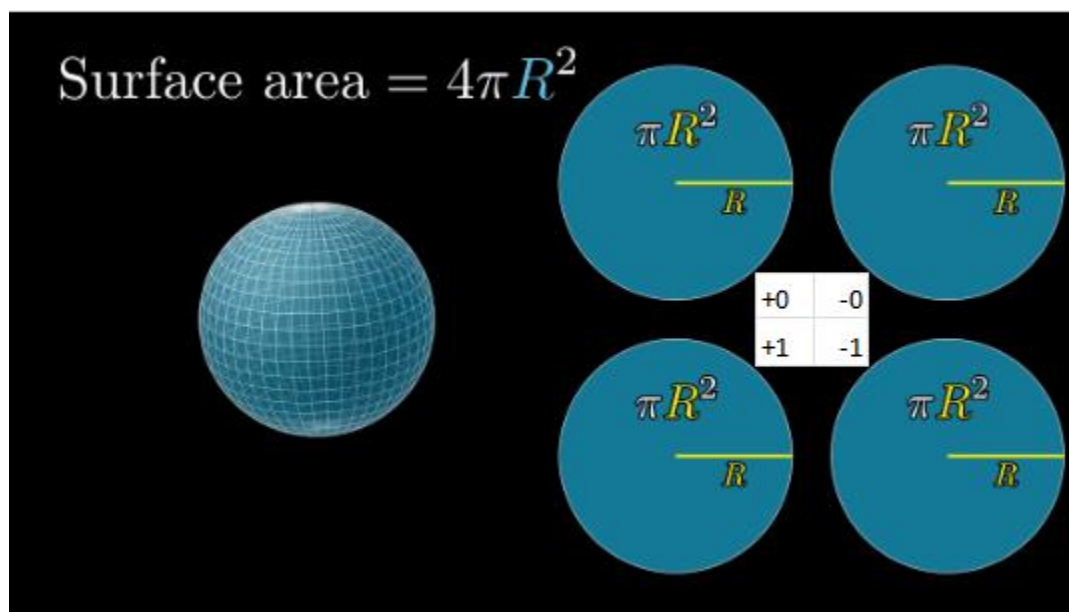
In relation to quantum mechanics, this observer effect can impact the form – particle or wave – of quantum objects during measurements. Future quantum theories, like Niels Bohr's [Copenhagen interpretation](#), use HUP to state that an observed object does not retain its dual nature and can only behave in one state.

In 1954, a young student at Princeton University named [Hugh Everett](#) proposed a radical supposition that differed from the popular models of quantum mechanics. Everett did not believe that observation causes quantum matter to stop behaving in multiple forms. Instead, he argued that observation of quantum matter creates a split in the universe. In other words, the universe makes copies of itself to account for all the possibilities and these duplicates will proceed independently. Every time a photon is measured, for instance, a scientist in one universe will analyze it in waveform and the same scientist in another universe will analyze it in particle form. Each of these universes offers a unique and independent reality that coexists with other parallel universes.

So, the question is whether aliens and parallel universe/s exist, one of them or both, or both do not exist? Do we need evidence, or will we never have evidence? Or can our brains make up something that never exists and cannot be observed? Everybody knows

that being skeptical is doubting that something is true or useful. Even thinking of something real or unreal may not be useful. And there comes a lie to make an untrue statement with the intent to deceive. So, in general, everybody may keep their opinion on aliens and parallel universe/s as for anything else. That is called freedom in my opinion, you may not agree, because it is my opinion, and an alien and parallel universe/s is in you, you are different, and we are different.

But we are universal at the same time, we share the same set of rules, like every spherical surface can be measured  $4\pi R^2$ . The wave function of a particle, at a particular time, contains all the information that anybody at that time can have about the particle. Below is the picture of the sphere and all the information of its surface.



As we know, DNA encodes information through the order, or sequence, of the nucleotides along each strand. Each base—A, C, T, or G—can be considered as a letter in a four-letter alphabet that spells out biological messages in the chemical structure of the DNA. In this essay you will see links to other things in chapters to follow, just for common universal system we live in, called the Universe.

### ***Gödel theorem and incompleteness, “happy” end***

In 1931, the Austrian logician Kurt Gödel published his incompleteness theorem, a result widely considered one of the greatest intellectual achievements of modern times. The theorem states that in any reasonable mathematical system, there will always be true statements that cannot be proved.

For the above, I can recall the approach to science: it is meant to uncover secrets of the world, but it will never do it for all the secrets because the more questions we answer and close conundrums more come to be answered, and so on. A very imminent example is dark matter and dark energy. Once we thought we had completed physics with General relativity and Quantum physics, which successfully described nature on macro and micro levels, we should marry them and that's it.

The answer from nature was no, there are more mysteries to come to add to the puzzle: dark matter and dark energy. Now the puzzle seems more complicated. The question is, will we ever open the whole puzzle, all secrets of the universe? There are two ways: first, we are stuck, whatever we change in our theories, whatever new discoveries bring, but will there be new discoveries if we are really stuck, and second, we find out solutions to existing questions, but new questions appear and so on, new discoveries after old ones, generation after generation. First, we are stuck, and it is the end, and second, we are on the infinite road and there is no end.

However, there is the third way, the only one that is non-Gödelian: we open all puzzles and there is a "happy" end. Whatever the future will show, I can at least say that Gödel's theorem is unprovable itself, while hoping for the third way to the "happy" end.

### ***Two emperors, infinite consciousness***

Let's suppose there are two emperors in the Universe: one positive, because he is positive, and one negative, because he is negative. Assign values + and – respectively. We have a bit coin: 0 or 1. The positive emperor wants us to guess and gain in value. The negative emperor wants us to miscalculate and lose in value.

Now let's start flipping the bit coins. So, at the start, we have 0 or 1 with a probability of 50%. Remember, if we guess, we get one + positive coin, and respectively, if we do not guess, we get one - negative coin. At best, we can get 50% guess + positive coins, and 50% no guess - negative coins, because it is random. We are at 0 net value: 50% + positive coins vs 50% - negative coins, unless something changes.

But the positive emperor wants us to gain maximum value, so the only way he could do this is to increase the probability of guessing, to take full control (100%), and decrease randomness to 0%. In general, as time goes by, the number of total flips increases, and it seems that entropy/disorder increases, but in general the percentage of guesses increases up to 100%, so respectively negentropy/order increases. I may leave it up to you to perform the detailed simulation with regards to "The International Air Transport Association (IATA)", weather forecast, homo sapiens, this essay, science, or the entire universe, but at the beginning, we have randomness/disorder, and at the end, we have determinism/order, or like Germans say: Alles in Ordnung!

I mentioned AI at the beginning of this essay and even named him Dr. Watson. Could it have infinite consciousness? Could it make science different? Let's suppose that at least only humans have infinite consciousness, and we want to move humanity to the other planet, like in the movie "Interstellar." Whatever this planet is called, it is only an infinite consciousness of what is left of the entire Universe. What is the final question humans could come up with that everything in the Universe should answer?

Now, let's complete the story. The positive emperor wants me to finish this story with the above question and gives me infinite consciousness because he puts in me what he has, but the negative emperor wants to give me none or infinite bit coins so that I will not be able to complete this parable at all or at any time. But the latter emperor is the finite number of bit coins and he puts in me what he has, so he gives me as many coins as he can to prevent me from doing my work. Now the parable is ready with the final question to everything in the Universe: What is in me that I received at the beginning, and what I will give at the end, is it infinite consciousness?

### ***Philosophy and God***

Agnosticism is the view or belief that the existence of God, of the divine or the supernatural, is unknown or unknowable. Another definition provided is the view that "human reason is incapable of providing sufficient rational grounds to justify either the belief that God exists or the belief that God does not exist."

Let's go back to the famous Gödel, not as famous as God, is it a mere coincidence in these two words? God is, God is not, both unprovable. So in the end, we still have God exists or God does not exist. We cannot prove both, it means we cannot disprove both either. We are stuck, we are back where we started, at Agnosticism, and that seems to be infinite or endless.

But here comes the son of God himself, not least than Gödel. Revelation says: I am the Alpha and the Omega, the First and the Last, the Beginning and the End. Or this way "I am the Alpha and the Omega," says the Lord God, "who is and who was and who is to come, the Almighty."

The above says that there was a beginning and there is an end, and there is an eternity in God. No boundary at the beginning is a clear argument against the existence of God. While the Big Bang implies the existence of the beginning for some scientists at least, it is more difficult to believe in the end, and in the eternity/almighty of God.

Alpha (A or  $\alpha$ ) and omega ( $\Omega$  or  $\omega$ ) are the first and last letters of the Greek alphabet and the title of Christ and God in the Book of Revelation. While famous Steven Hawking proposed no boundary at the beginning, and no need for God, his colleague Roger

Penrose proposed an even cuter argument: no boundary at all, conformal cyclic cosmology, no need for God.

While many argue and ponder what was the beginning and what is the end of the Universe, every alphabet, like every finite system, like math where infinity is just a symbol  $\infty$  and pi is just a series of the same numbers, one can think of irrational number: "Pi is an infinite, non-repeating decimal - meaning that every possible number combination exists somewhere in pi.

All information that has ever existed or will ever exist, the DNA of every being in the universe, EVERYTHING: all contained in the ratio of a circumference and a diameter." There is something essentially infinite about irrationality that can be used to represent everything contained in our finite world.

P.S.

I agree with the famed Stephen Hawking: "There is a fundamental difference between religion, which is based on authority, [and] science, which is based on observation and reason. Science will win because it works."

I also agree with the famed Sir Roger Penrose: "In the 1991 film [A Brief History of Time](#), he also said, "I think I would say that the universe has a purpose, it's not somehow just there by chance ... Some people, I think, take the view that the universe is just there and it runs along—it's a bit like it just sort of computes, and we happen somehow by accident to find ourselves in this thing. But I don't think that's a very fruitful or helpful way of looking at the universe, I think that there is something much deeper about it."