

Quest for God

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Part 1.

In order to determine whether or not God exists, we will try to evaluate the probability that life occurred as a consequence of a random process. This evaluation assumes that there are only 2 ways for life to appear:

1. The first way life could appear is from a random process.
2. The second way life could appear is from a sort of creation (that is to say God exists).

We will try now to evaluate the probability that life occurred from a random process.

In order to do that, we will make the following assumptions:

1. The total number of processes that can take place in the universe is so large that it can be considered to be infinite (it is not infinite, but the probability will be computed by the usage of limits, so this assumption is correct because the total number of processes tends to reach infinity).

That can be put mathematically in the following form:

$z \rightarrow \infty$, where z is defined as the total number of processes that can occur in the universe.

2. There is only a small number of processes (compared to the infinity of the total number of processes) that can generate life.

That is to say $a = \{1, 2, \dots\}$, but a can't be conceived as $a = z * b, b \in [0, 1]$, because in this case, $a \rightarrow \infty$ (we know that for example $\lim_{n \rightarrow \infty} 0.5 * n = \infty$).

In other words, the number of processes that can generate life has to be finite.

3. Because the universe incorporates the notion of time, we can define the idea of trials. That is to say, even though the number of processes that could generate life is very small (goes to 0 if we computed as a limit), we have a lot of attempts to try to get life.

We will define m , the total number of attempts, as $m \rightarrow \infty$.

If we define the problem as such, we can interpret it in the following way:

We have a dice with an infinite amount of faces ($z \rightarrow \infty$) and we throw it an infinite amount of times ($m \rightarrow \infty$). What is the probability of obtaining at least one of the finite amount of faces a ? (We must make the observation that m and z are independent of each other)

If we formulate the problem like this, then this problem can be interpreted as a binomial probability. In this case, the formula for the calculation of the probability will be:

$$\sum_{k=1}^{\infty} \lim_{m \rightarrow \infty} \binom{m}{1} * \lim_{z \rightarrow \infty} \left(\frac{a}{z}\right)^k * \left(1 - \frac{a}{z}\right)^{m-k}, \text{ where } \binom{m}{1} = \frac{m!}{(m-1)!*1!} \Leftrightarrow m$$

We re-write the formula as follows:

$$\sum_{k=1}^{\infty} \lim_{m \rightarrow \infty} \binom{m}{1} * \lim_{z \rightarrow \infty} \left(\frac{a}{z}\right)^k * \left(1 - \frac{a}{z}\right)^{m-k} = \sum_{k=1}^{\infty} \lim_{m \rightarrow \infty} m * \lim_{z \rightarrow \infty} \left(\frac{a}{z}\right)^k * \left(1 - \frac{a}{z}\right)^{m-k}$$

Since z is independent of m and k , we can compute the term $\lim_{z \rightarrow \infty} \left(\frac{a}{z}\right)^k * \left(1 - \frac{a}{z}\right)^{m-k}$ directly in the following way:

$$\lim_{z \rightarrow \infty} \left(\frac{a}{z}\right)^k * \left(1 - \frac{a}{z}\right)^{m-k} = 0.$$

The term $\lim_{m \rightarrow \infty} m = \infty$.

Now, if we compute the entire limit we will have $\infty * 0$. But, in this case, the 0 and the ∞ do not come from the same limit (one comes from the condition that $m \rightarrow \infty$ and the other one comes from the condition that $z \rightarrow \infty$). In this case, the evaluation of the product depends on the term that has to be calculated first.

Since this was defined as a binomial probability, we must evaluate the term that comes from $z \rightarrow \infty$ first. So, in this case, we will get the 0 first, that is to say that the overall summation equals to 0.

$$\sum_{k=1}^{\infty} \lim_{m \rightarrow \infty} \binom{m}{1} * \lim_{z \rightarrow \infty} \left(\frac{a}{z}\right)^k * \left(1 - \frac{a}{z}\right)^{m-k} = 0$$

This being the case, we can conclude that the probability of life occurring from a random events is 0. Since this probability is 0, the only other solution to the question regarding the origin of life has to be that life occurred from a non-random event, which is to say that life must be a rule of the universe (in the same sense that gravity is a rule of the universe).

The idea that life is a rule of the universe can also be interpreted (although not necessarily) that there is some sort of a “God” that created life in the universe.

Discussion:

1. It has been stipulated that a , the total number of processes that can generate life can not be infinite. If a were to be considered infinite, then the problem would cease to exist, because in that case it would not be possible to consider the process as a random process.

2. The formulation that $z \rightarrow \infty$ is correct, because the total number of events that happen in the universe is always adding up. An event can be conceived as following:

- 2 atoms colliding.
- a meteor colliding with another meteor.
- a star exploding.
- anything that can be conceptualized as requiring time to occur.

In this case the question is: if two different carbon atoms collide, is it fair to say that those two events are two different processes or should they be conceptualized as a single process? The answer to this question is the following: no matter how you conceptualize them the approximation of infinity is still correct, because even if 2 collisions are considered the same, you can always have collisions of multiple atoms. If you add up all the possible combinations of this type of processes, the total number still tends to infinity.

3. The number of trials can be conceptualized as following: we take the total number of time since the beginning of the universe and we divide it to the number to each time scale at which a process can occur. Then, we add all of the numbers we have obtained and that is the total number of trials. (This is indeed a very big number, and because the universe keeps evolving, that number goes to infinity).

3. Is z (number of processes) and m (number of trials) independent so we can formulate the problem as a binomial probability?

The answer to this question must be yes, otherwise a process could not be defined. All probabilities are predicated on the notion of trials. Trials cannot be conceived in the absence of a sequence of events. A sequence of events cannot be conceived in the absence of time. So, if m and z as we defined them here are not independent, then no probability can ever be conceived.

For this reason, one must consider m and z independent.

Final discussion.

The fact that life is a law of the universe does not logically mean that there is a God.

But, the definition of God does not involve the notion of a creator in a sense of a parent. God has always been conceptualized as something transcendental that is beyond our understanding. A law of the universe has the same characteristics, it has to be transcendental by nature. Otherwise, the law itself can be interpreted further on as a limited case of a more general law, and in the end, the ultimate law must be transcendental. From this perspective, the problem of God can be reduced to a problem of language. This is indeed a matter of personal choice and no further logical arguments can be made.

On the other hand, we must notice a practical aspect of the problem. If you are allowed to redefine the notion of God thru the notion of law, then why can't you redefine the notion of God thru any other word and state that the word you are using is equivalent to that particular word simply by adding more elements to that word. That is to say, if you can choose to call God "a law", then how can you state that you cannot call the word "law" in any other way, like a flat worm with ice cream on top? This is a scientific principle, the principle that states that a new formulation of the world requires that new formulation to incorporate all the previous definitions that have been verified as true and prove that those definitions were just particular cases of the new, a more global definition.

It is unclear to me how the definition of God as "a law" adds something new to the previous formulation.

Once this principle has been violated, the entire ramifications of the principle can be violated. In this case, all post-modernist claims are correct, and reality can not exist in other way than in a socially constructed way. This is because the principle of not redefining reality without incorporating the old ideas into the new ones no longer applies. So, for that practical reason, the usage of the word God instead of "a law" must be preferred, otherwise all knowledge becomes completely relative.

From a mathematical perspective we can translate the principle mentioned above in the following way:

If one reformulates a scientific law, without adding anything new to it and without proving that that particular law that one reformulates is just a sub-case of the new and more broad law, that one basically states that $p \neq p$.

Is it possible to conceive such a statement as $p \neq p$?

The answer to this is yes (even though it is not logically correct), if we mix up 2 different ways of interpreting reality.

The first way of interpreting it must be that $p = \infty$ in the sense of a limit, that is to say p goes to infinity.

But, if we try to compute p from a numerical perspective, we will always reach a very very high number to which we will always be able to add something more.

In this case, if we state that that particular value of p is the infinite, then we create a paradox, because $p+1$ is still infinite, so we get to some sort of $p \neq p$.

What I am trying to say is that if we try making the infinite finite, then we create a paradox on which nothing can be predicated.

This problem that I am describing here is a violation of logic by the misuse of language, in the sense that one does not make the clear distinction between $p = \infty$ in the sense that infinity is conceptualized as the biggest number conceivable and p is equal to a very large number from a numerical calculation point of view. This distinction must always remain clear.

Another observation can be made.

By definition, God is all powerful. If God is all powerful, then God can do anything. From this perspective, if any other idea (or word) gets reformulated (as it happens for example with synonyms) then thinking itself does not collapse, because God is all powerful and if you try to logically collapse the system by a series of logical parallels, you end up incapable of collapsing the idea of God, that is all powerful so it cannot be collapsed. But if you collapse the idea of God, then you can indeed collapse the entire structure of the thinking process.

This can raise the following argument: "if God is all powerful, can he create a rock that he cannot lift?" This question will be addressed in the second part of this paper.

Conclusion: if one does not like post-modernism and one does not agree with the idea that nothing is real, all is socially constructed and nothing can exist, then the only way to revert that is to accept the idea of God instead of "a law".

Part 2. Ontological model.

As we have proven in part 1, life can not appear from a random process. Life must be at least a law of the universe (and from practical reasons we must accept that life was created by something we conceptualize as God), in the same way gravity is a law of the universe.

Now we can ask the following question (to be noted that the questions we ask are not the only questions to be asked, that is to say, the process of selecting the questions does not follow a reasoning algorithm):

Where did the Universe come from? Life did not come from a random process, but can the Universe itself come from a random process, that is to say, the Universe itself is just a possibility of a number of other possible Universes?

This is a tricky question.

As stated in part 1, the idea of probability must be predicated on the notion of time. Also, the idea of number must be predicated on the notion of time, because numbers automatically involve the notion of order, and in order to determine a type of order we must have time (this was proven in the chapter of final discussions). So, in order to ask the question if our universe is just one universe from a number of other universes, we must incorporate the notion of time. So, for starters, this question is embedded in our universe, and cannot be conceived in an universe that does not incorporate the idea of time.

Where did the universe come from?

The most accepted theory to date states that the universe started with the Big Bang. But then the question arises, what was before the Big Bang?

We can formulate the following answer:

Our universe came to be from the collision of a number of different universes that did not have the idea of time (or the idea of entropy). But, if we accept this idea, then we invalidate the grounds on which this idea was predicated. If we state that time is not an absolute reality, but only a particular subset of our universe that does not apply to all other conceivable universes, then all of our deterministic observations are incorrect (or, better yet, they are improvable).

For this reason, we will try to formulate a model of the universe that has its cause of appearance imbedded in the universe itself.

Let's consider the following situation.

There is a point in space (the supposition of space is not required, as we will prove). We know nothing regarding this point. So, we (as a manifestation of consciousness) start measuring its position in regard to our own presence. Since consciousness starts measuring the position of the point, that point can appear to be anywhere.

From our own reality, we know that errors are normally distributed (at least the errors that come from a single source), that is to say that they follow the normal distribution with the formula: $\frac{e^{-\frac{t^2}{2}}}{\sqrt{2\pi}}$

Now we may ask the following question:

What is the probability that a consciousness that measures a single point can create an infinite universe.

In order to answer this question, we can calculate the integral that arises from the normal distribution.

If we say that this process of measuring has a beginning, we have the following formulation:

$$\int_0^{\infty} \frac{e^{-\frac{t^2}{2}}}{\sqrt{2\pi}} dt = \frac{1}{2}$$

So, if the universe has a beginning when consciousness started to measure the point, the probability is 0.5.

But what if the universe started measuring that point at $-\infty$ (that is to say it has been measuring the point forever).

Well, in this case the probability becomes:

$$\int_{-\infty}^{\infty} \frac{e^{-\frac{t^2}{2}}}{\sqrt{2\pi}} dt = 1$$

So, the probability that a consciousness that has been measuring a point forever will generate an infinite universe is 1. Because those measurements require time, the universe will go to infinity, but it will never reach it (which is the observation that Hubble made, that the universe is expanding, but in this scenario that we described, the universe does not have a point of departure; it has been expanding forever and it will be expanding forever, without starting from a singularity that can be defined as a point).

This model is in accord with the double slit experiment. In that experiment, it has been noticed that the manifestation of a particle depends on whether or not some form of consciousness is observing the path that the particle took.

The arguments we have presented above suggest that consciousness could generate a universe that will expand to infinity, without it having a point of departure.

Now the following question can arise: what is the point that consciousness measures?

The answer to this question can be: itself.

If consciousness is aware of the fact that it is conscious, then that awareness is sufficient to constitute the singular point that can be measured forever in order to create an entire universe.

Also, this measurement can create time. Consciousness measuring itself will create time, in the sense that it will create the future, but also the past.

This model that I am describing has a beginning, but that beginning represents the beginning of time itself. The beginning of time in this model stretches to infinity in both senses, to the future but also into the past.

So? How does this relate to the idea of God?

Well, if you accept the cosmological model presented above, then consciousness is the one that generates the universe. But as we know from every day experiments, consciousness can be influenced by the material aspects of the world. The answer then would be this. Yes, God created the universe, but in doing so, it created a rock that he can not lift. Or, if you do not like metaphors, the universe is more than God created, but God created the universe.