

Arguments with Atheists

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Abstract

The new physics of emergent spacetime has given such a marvelous twist to the ultimate reality that even an atheist may mistake it for God.

Keywords: God, spacetime, ultimate reality, atheist.

If God did not exist, it would be necessary to invent him -Voltaire

A Boss in Heaven is the best excuse for a boss on earth; therefore if God did exist, he would have to be abolished - Mikhail Bakunin

God cannot be so easily abolished, because even an atheist may now see God where there is no mention of God. Below is the story:

One person says:

I like how you pick apart the idea of timelessness and spacelessness. In the future, however, I think you could get a lot of further traction by pointing out how space and time are not even separate entities unto themselves. General relativity is very clear that space and time are linked into a single entity called spacetime. We also know that the nature of spacetime is not very well understood, and that there are all sorts of wacky things it could transform into or causally derive from---especially in the realm of ultra-high energy and density like the Big Bang. So whenever these Christians speak of the universe just popping into existence, they are demonstrating very clearly that they simply don't understand the fundamental nature of spacetime and causality.

I reply as follows:

Do you know one thing? Scientists who are working with the quantum theory of gravity are now saying unanimously that space and time are not fundamental entities at all, but epiphenomena arising from other yet more fundamental entities. Even string theorists are also saying the same thing that space and time are not fundamental. Below are some relevant quotes:

1) While different approaches to quantum gravity are often based on rather different physical principles, many of them share an important suggestion: that in some way spacetime as we find it in our existing theories is not a fundamental ingredient of the world, but instead, like rainbows, plants or people, 'emerges' from some deeper, non-

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spatiotemporal physics. What replaces spacetime and what aspects of spacetime remain in the ontology of fundamental physics differs, as one would expect, from approach to approach. But the idea that the universe and its material content might not, at bottom, be 'in' space and time, that these seemingly fundamental ingredients are just appearances of something more fundamental, would, if borne out, shatter our conception of the universe as profoundly as any scientific revolution before - The emergence of spacetime in quantum theories of gravity by Nick Huggett and Christian Wuthrich_

2) Nobel Laureate David Gross observed, "Everyone in string theory is convinced...that spacetime is doomed. But we don't know what it's replaced by." Fields medalist Edward Witten also thought that space and time may be "doomed." Nathan Seiberg of the Institute for Advanced Study at Princeton said, "I am almost certain that space and time are illusions. These are primitive notions that will be replaced by something more sophisticated" - Donald D. Hoffman in *The Abdication Of Space-Time* (Edge.org)

3) "There aren't many things in quantum gravity that everyone agrees on," says Eleanor Knox, a philosopher at King's College London who specializes in the philosophy of physics. "Yet the one thing many people seemed to agree on in quantum gravity was that we were going to have to cope with space and time not being fundamental"- *Are Space and Time Fundamental? – The nature of reality - PBS* by Kate Becker, Mar 2012

Now what would be the consequences if space and time are not fundamental but emergent? Here are some thoughts:

That space and time are emergent would have at least two implications. It would imply that those fundamental entities from which space and time have emerged cannot be within any space and time and it would also imply that they cannot be material. They cannot be within any space and time simply because space and time have emerged from them and therefore there was no space and time prior to the emergence of space and time. Thus they would be spaceless and timeless. However scientists are not describing these fundamental entities as spaceless and timeless, they are describing them as non-spatiotemporal. In whichever way they are described, the truth remains the same: those fundamental entities from which space and time have emerged cannot be within any space and time. Being thus spaceless and timeless (or non-spatiotemporal) they would also be immaterial. This is because GR has shown that space, time and matter are so interlinked that when there would be matter, there would be space and time as well. So, if those fundamental entities were material, then there would also be space and time along with those material entities. In that case there would already be space and time prior to the emergence of space and time, which would be an absurdity.

That means the fundamental entities from which spacetime has emerged were spaceless, timeless and immaterial. However it can be shown that only one entity be there in spaceless and timeless condition which would further mean that spacetime has emerged from one single entity only that was spaceless, timeless (or, non-spatiotemporal) and immaterial.

A second person quotes the following from my reply and then comments that it is BS:

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I reply to him as follows:

It is not me but the scientists working with the quantum theory of gravity who are saying that spacetime is not fundamental but emergent. If spacetime is not fundamental but emergent, then that will mean that there is something more fundamental than space-time from which space-time has emerged. This something more fundamental than space-time cannot be within any space-time because there cannot be any space-time prior to the emergence of space-time. This is nothing but simple common sense. Being not within any space-time it cannot be material, because GR forbids it.

So if anybody contradicts the above, then that will show that he lacks common sense and that he is also anti-science.

A third person states:

I think he's upset because your confirmation bias is showing. You've skipped over this key part: What replaces spacetime and what aspects of spacetime remain in the ontology of fundamental physics differs, as one would expect, from approach to approach. You want to see it as fitting the definition of your god, but that's not what they're saying. They're saying there's something 'below' our universe that has its own manifestation of energy. They're saying it is not OUR universe, but it still has laws nonetheless, only these laws dictate the manifestation of energy into universes. It is by no means evidence of a creator. If you did not intend to imply that, my apologies, but the correlation seemed strong.

I reply to him as follows:

Can you show by any direct quote where I have mentioned god or a creator in my first comment? So, from where have you brought all these entities and accusing me unnecessarily?

His reply to me is this:

You said, "...spacetime has emerged from one single entity only that was spaceless, timeless (or, non-spatiotemporal) and immaterial." This is a common definition for a christian god.

I again reply to him as follows:

But the Christian God has got consciousness. Have I written in my comment that the entity from which space-time has emerged is a conscious entity?

He replies:

As I stated before, if you did not mean to imply that, my apologies. You've asked for a reason for my interpretation of your intent, and I gave it to you. Maybe you can grow from this by understanding how other people may interpret your communications, and shape them accordingly.

My final reply to him is this:

It is okay.

However, I want to say one thing here. Actually theistic belief has two parts. In one part theists hold that life, mind and consciousness were already there before the beginning of the universe, because before the beginning there was God and God is life, mind and consciousness itself. In the second part they hold that there was no space and time before the beginning, because before the beginning there was God and that God is spaceless and timeless. So as per the theistic belief life, mind and consciousness are fundamental, because they were already there before the beginning of anything, but space and time are not, because there was no space and time before the beginning. Up till now scientists have refused to acknowledge the first part of the theistic belief as true and they still hold that life, mind and consciousness are emergent entities only. But forced by the circumstances they have been driven to the conclusion that the second part of the theistic belief is essentially true, that space and time are not fundamental, but emergent only.

That is the reason as to why my final conclusion appears to you so similar to the definition of the theistic god.

Here the story ends.

Now we can say that the new physics of emergent spacetime has given such a marvelous twist to the ultimate reality that even an atheist now mistakes it for God.