The absurdity of Infinity and the beginning of the universe

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Abstract

One of the common claims of the eternalists is that the "actual" infinite is possible and the universe is eternal. They are trying to refute the Kalam argument. What I wanted to show in this paper is that the "actual" infinite is impossible for logical reasons, and I have shown further that infinity has an effect and application over time, and that there is no way to deny the beginning of the universe for existence. The paper points out the problems of infinity and points to the beginning of the universe.

Keywords: Actual Infinity, Eternalist, Potential Infinity

Introduction

By definition, "infinity" is never completely bound. "Actual" by its definition, is completely encapsulated. What is "infinite" is not fully realized by its definition. What is "Actual" is fully understood by its definition. That which is "infinite" has no boundaries. What is the "actual" key border? Therefore, a simple contradiction in terms of an "actual infinity" - is no different from "a square circle". If this is not intuitively obvious, I will give a few examples, then explain why infinite things cannot exist in a purely logical sense. And I will unveil the Hilbert Hotel Paradox and explain why infinity is not possible. I will show that infinity can be applied in the case of time and time must have a beginning and a past without beginning is not possible. I would logically show that the universe has a beginning.

(I) Absurdity of Infinity: Hilbert hotel & Soldiers illustrators.

Let's go to a higher level of our thinking. Its name is The Infinity Paradox, proposed by David Hilbert.

Before proceeding, a quick word about ❝actual❞ and ❝potential❞ infinities. This can be defined as follows:

1. Actual Infinite: "Is a collection of definite and discrete members whose number is greater than any natural number." In other words, it is a set with an infinite number of members. (Craig,2008)

2. Potential Infinite: "Is a collection that is increasing toward infinity but never actually gets there." In other words, it is a collection that ceaselessly grows in size, but never actually contains an infinite number of members. (Craig, 2008)

Think of a hotel where the number of rooms is infinite. Every room is filled in one night, no room is empty. We take the name of the hotel as Infinity Hotel, and the hotel manager is mathematician Jeffrey. Jeffrey slept through the night after filling the hotel. Suddenly a new guest arrives, who wants another room. Mathematician Jeffrey, however, did not let him go, for

which he was allotted another room at the Infinity Hotel. How? Jeffrey told the man in room number one to go to room number two, the man in room number two was told to go to room number three. That means the people in all the rooms were told to go to the room right next to him. Now you may be wondering, where will the man in the last room go? But this is not a forty-room hotel, this is an infinity hotel. There is no such thing as the last room. The man in the nth room went to the n + 1 room, room number one was vacated and the new man was arranged to stay there.

Another difficult problem for Jeffrey, this time a bus came with forty people, they wanted forty more rooms. Quickly Jeffrey solved it, the man in room number one was told to go to room number forty-one, to room number two to forty-two, the man in room and went to the room (n + 40), forty rooms became empty, forty became space!

Let's give Jeffrey a little more trouble. Let's see what Jeffrey does! This time a bus was sent to his hotel, where the number of people is infinite. How will they be given a place? This time, however, Jeffrey will not be able to vacate the room for so many people with the idea of addition, because n + 1 is not a specific room number, Jeffrey can't tell anyone to rush to that room. This time he thought for a while and came up with a fancy idea. The man in room number one was told to go to number two, man number two went to room four and was sent from room number three to room number six. Sending from room number n to room number 2n filled all even numbers rooms, and even number rooms became empty. Now you must know that odd numbers

have an infinite number, so it became the place of an infinite number of people. Jeffrey is going to read the most difficult problem of his life! This time an infinite number of buses with an infinite number of people, not one or two, have arrived. This time Jeffrey fell into great danger. After much thought, he remembered Guru Euclid. He says there are infinite numbers of prime numbers. Jeffrey got the idea! The man in room number one was sent to room number two, from room number two to room number four, from three to eight, from four to sixteen… Do you understand? Here the man in room n was sent to room 2 ^ n. Except for two, all the rooms became empty.

This time all the people on the first bus were told to go to room number 1. The man on the next bus was sent to Room 3, 9, 26, 71, ... 3 ^ n ... The next prime number is five, the next bus is seven. Thus, for each bus, they have a place in the power of one prime number. With an infinite number of prime numbers, there is an infinite number of bus seats. Thus Jeffrey made an infinite number of infinite places in his infinity! Overall, this is only the paradox. An infinite hotel fails to accommodate new guests due to the unavailability of rooms. This paradox shows us that our minds can’t wrap up all the levels of infinity. It's very complex and logically absurd. Now, look at this type of Hilbert's Hotel Argument (HHA) proposed by W.Lane Craig-

(1) An infinite number of things cannot exist.

(2) A beginningless series of events in time entails an infinite number of things.

(3) Therefore, a beginningless series of events in time cannot exist.

More vision of Hilbert's Hotel Argument:

(4) If an infinite number of things existed, Hilbert's Hotel would be possible.

(5) But Hilbert's Hotel is not possible; it is absurd.

(2) Therefore, an infinite number of things cannot exist.

Here the absurdity of Infinity is explained by another illustrator. Suppose a soldier throws a grenade at an enemy in front of him. That soldier is very ordinary; He must get permission from his sub-inspector before throwing the grenade. I think he (the soldier) will be able to throw the grenade at the enemy's dormitory with the permission of two of his sub-inspectors.

Now think a little more complicated, there are an infinite number of sub-inspectors before the soldier. So, the soldier will get permission from his sub-inspector, then his sub-inspector from his sub-inspector thus n + 1, n + 2, n + 3 .... Infinity. Now the question is when will the soldier be able to throw the grenade at the enemy's dormitory? Never. Because he has an infinite number of sub-inspectors before him that will never end, he (the soldier) will never be able to throw a grenade at an enemy dormitory. We can sort out our argument like this-

1. It is not possible to return from an infinite number of sub-inspectors.

2. The soldier has to throw the grenade.

3. With an infinite number of sub-inspectors, the current task of a soldier is impossible.

4. So it is impossible to have an infinite number of sub-inspectors.

This means that a soldier can only throw a grenade with permission if he has a limited number of sub-inspectors before
Him.

Now if the permission of each sub-inspector in front of the soldier is considered as an 'event', then in the first case after 5 incidents, in the second case after 20 incidents, and the last case, you are coming after an infinite number of incidents. So, in the case of infinity, the fact that you can never throw a grenade indicates - an infinite number of events cannot happen before one event. Because if that was the case then the current events would never have escaped.

Now the birth of the earth, the birth of the sun before that, the birth of galaxies before that, etc., is a cosmological event. If the universe has existed for eternity, then an infinite number of events would have taken place in eternity before the birth of the earth, the sun, and the galaxies. But since the infinite has no end - so the galaxy, the sun, is not supposed to be the birth of anything. We still have to wait in line for that infinite number of things to happen.

But the reality is that galaxies, the sun in our solar system, and our Earth have been born, and trillions upon billions of events have taken place over billions of years. In other words, in the example of that soldier, you have already thrown the grenade at the end of the line of permission, and all this has been made possible by the fact that a limited number of people are standing in front of you. Your turn came because the number of people was limited. In the same way, the past of the universe was also finite, that is, the beginning of the universe, so it has come to this position today.

(II) Critical thinking about time & Infinity

Time is running out. There is no way to stop it. On the other hand, our entire universe is a huge space or space, which is constantly expanding! But where, when, and how did this space and time begin? Today we will try to find out the answer to this question.

Place and time start:

If we stay behind from now on, when exactly will we be able to stop the ticking of the clock? The answer is: 14 billion years ago. Why there was no place before him, there was no time. The Big Bang exploded 14 billion years ago at a very small and very dense point. So that a lot of energy was created. [1] Even this universe and all the planets, satellites, asteroids, stars, galaxies, galaxies, black holes, etc. that exist in it are created by this Big Bang. Although not all were created in one day. But the beginning was from here. And this is the beginning of our space

and time but from that Big Bang. Time did not exist before that. There was no place. Everything in the universe was concentrated in one tiny dot. Time has started since the Big Bang. [2]

Now let's hope in place. All galaxies are moving away from each other. This means that the space between them is increasing or expanding. We know this spread started after the Big Bang happened and it is still going on today. As the galaxies move farther away from each other, space is growing or space is being created. For example, if the balloon is inflated by drawing a few

drops on the balloon, it will appear that the dots are moving away with the inflating. The balloon is getting bigger or the space is getting bigger. When the wind blows again, it looks like the dots are getting closer. In this way, all the points can come together at one point. [The balloon here is our universe, and the points are galaxies, galaxies, stars, etc.] The Big Bang happened at that one point or singularity. From which our time and space have arisen. The spread of which is happening! We find evidence of the Big Bang all around us. One of them is CMB (Cosmic microwave background), this wave. [3]It was first discovered in 1975 by scientists Wilson and Penzias at the Bell Laboratory in New Jersey, UK. They can catch the wave first on the tube-shaped horn antenna of that lab. Evidence of measuring wavelengths and heat has shown that the Big Bang has been around for 1.4 billion years. In addition, there is much more evidence of the Big-Bang theory, including the ratio of hydrogen to helium. So asking questions about the Big Bang is as foolish as time and space. Why not their origin and the Big Bang.

Eternalists can now argue that since time is abstract, infinity will not apply to time, As Loke says:

“Since abstract entities are not finite, located, moveable entities nor spatially extended, the argument against the possibility of the actual infinite based on paradoxes such as Hilbert’s Hotel does not apply to them” (Heartbreak at Hilbert's hotel, p. 63).

That is not the case, we have seen the beginning of time with the Big Bang about 14 billion years ago today. There are three perspectives on time- • Time marks a moment in one of the universes. Time is Coordinator; it helps us Locate things. •Time measures the duration between two events. •Time is a medium through which we travel. (Time is an agent of change, we move through it, or Equivalently Time flows past us, from the past, Through the present, toward The future. Time is a combination of events and we can consciously feel time and time affects the environment around us. So time is a part of reality. So infinite also applies to time. Again many may argue that there is no fixed time in the universe according to general relativity, but Craig has shown that the universe has a time. [4] We also showed that time begins with the beginning of the universe so it is undeniable that the universe has time and it is not infinite.

Now come to our Argument, see Below-

P1) cause and effect can't exist outside of time as we know it

P2) Time as we know it didn't exist in the primordial singularity

P3) since time didn't exist, cause didn't exist and hence no effects took place

P4) In the absence of causation there is no impetus for there to be any change in the nature or state of the primordial singularity

C) therefore the primordial singularity should've remained in an immutable state indefinitely and the universe could never have come into being.

We can see that the conclusion is demonstrably false because the universe does exist. So here is what can we conclude from this:

P1) The Universe exists

P2) A primordial singularity existed at the beginning of the universe

P3) Time as we know it originated from this singularity, in other words, time itself began some time ago.

P4) Time has a beginning.

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1. Hawking, S. W. (1993). Hawking on the big bang and black holes (Vol. 8). World Scientific.
2. Hawking, S. (2014). Singularities and the geometry of spacetime. The European Physical Journal H, 39(4), 413-503.
3. Bond, J. R., & Efstathiou, G. (1987). The statistics of cosmic background radiation fluctuations. Monthly Notices of the Royal Astronomical Society, 226(3), 655-687.
4. For a brief critique, see Wm. L. Craig, "God, Time, and Eternity," Religious Studies 14 (1979):497-503.

(III) " Actual" Infinity &" potential" Infinity

The potential infinity is something that never ends. One collection after another will continue to be added but will never end. In other words, there will be sequels in the future but it will never end. We can call it a more endless future.

The Actual infinite end does not involve "things" in a set or a space that has an end; It is a series consisting of technically "complete" but an infinite number of members. Actual infinite beings cannot exist because they are paradoxical. It is impossible to say that you can always "take

another step" or "add another member" in a complete set, including the beginning and the end, different from the potential infinity.

We have shown in (I) why the real infinite is not possible, by the Hilbert Hotel paradox, and we have shown in the second (II) that the real infinite will be applied over time. How about Morrison's Illustrator here? What kind of problem is there? Let's take a look at Morrison's Illustrator:

Morriston asks us to imagine two angels, Gabriel and Uriel, who take turns saying praises to God forever. He makes the following remarks:

“It’s true, of course, that Gabriel and Uriel will never complete the series of praises. They will never arrive at a time at which they have said all of them. Indeed, they will never arrive at a time at which they have said infinitely many praises. At every stage in the future series of events as I am imagining it, they will have said only finitely many. But that makes not a particle of difference to the point I am about to make. If you ask, “How many distinct praises will be said?” the only sensible answer is, infinitely many.” (Morriston, Beginningless Past, Endless Future, and the Actual Infinite, p. 446)

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Craig argues that the endless future is best considered a merely potential infinity. Craig says in his reply to Morriston, Taking Tense Seriously:

“So concerning Morriston’s illustration of two angels who begin to praise God forever, an A-theorist will concur whole-heartedly with his statement, “If you ask, ‘How many praises will be said?’ The only sensible answer is, infinitely many”— that is to say, potentially infinitely many. If this answer is allowed the A-theorist, then Morriston’s allegedly parallel arguments collapse.``

Is there a problem with Craig's argument? My point is not to see that. Craig's argument is apt as an asymmetrical argument. Moriston's Illustrator has some ontological errors. First, there are two angels in Morrison's Illustrator. And the angelic spiritual entity is not infinitely applied to them. As Loke says",

"Since abstract entities are not finite, located, moveable entities nor spatially extended, the argument against the possibility of the actual infinite based on paradoxes such as Hilbert’s Hotel does not apply to them” (Heartbreak at Hilbert's Hotel p. 63).

And the angels are the unknown reality. While we can reason with them, we do not know what they are like. Because an unknown reality can never be judged by a known reality. For example, a person who has never tasted sweet before, no matter how much he is meant to be - can never be told what a sweet taste is. Or if you think a person has never seen red despite having good

eyesight, then you can never explain to him what red looks like. So in the case of Morrison's Illustrator, the angels are Unknown Reality. What time is it, on the other hand? We know how it works, how it affects us. The time corresponds to reality so time is Known as Reality. And so will be applied infinitely in the case of time but not in the case of angels. Respectfully, Morrison's Illustrator is a category mistake.

Conclusion

I have tried to highlight the issues of infinity in my entire discussion, with Hilbert Hotel Illustrator and Soldier Illustrator proving that infinity is absurd and impossible. I have done more analysis over time. Many eternalists claim that infinity does not affect time by claiming that time is abstract, but I have tried to show that time corresponds with our environment in time, and that time is the addition of individual events. Since time affects the environment and the origin of time is proven without any scientific problem, time is a reality we know. So infinite can be applied in the case of time, finally, we have discussed in some detail the "actual" infinite and the "potential" infinite. Above all, I want to prove that infinity is always irrational. I hope that this research will accelerate further research and that the Eternalists will not be able to easily avoid the beginning of the universe.

Reference

Allen, G. D. (2000). The history of infinity. Lectures on the History of Mathematics by G. Donald Allen, Texas A< &M University.

Craig, W. L. (1979). The Existence of God and the Beginning of the Universe. Here's Life.

Fletcher, P. (2007). Infinity. In Philosophy of Logic (pp. 523-585). North-Holland.

Craig, W. L. (1991). Time and Infinity. International philosophical quarterly, 31(4), 387-401.

Hawking, S. (2014). Singularities and the geometry of spacetime. The European Physical Journal H, 39(4), 413-503.

Brown, C. S. (2012). Big History: From the big bang to the present. The New Press.

Hawking, S. (2009). A brief history of time: from the big bang to black holes. Random House.

Brandt, W. N., Lawrence, C. R., Redhead, A. C. S., Pakianathan, J. N., & Fiola, T. M. (1994). Separation of foreground radiation from cosmic microwave background anisotropy using multifrequency measurements. The Astrophysical Journal, 424, 1-21.

For a brief critique, see Wm. L. Craig, "God, Time, and Eternity," Religious Studies 14 (1979):497-503.

Hedrick, L. (2014). Heartbreak at Hilbert's Hotel. Religious Studies, 50(1), 27-46.

Morriston, W. (2010). Beginningless past, endless future, and the actual infinite. Faith and Philosophy, 27(4), 439-450.

Craig, W. L. (2010). Taking tense seriously in differentiating past and future: a response to Wes Morriston. Faith and Philosophy, 27(4), 451-456.