

GOD and Time Travel into the Future

Pavle I. Premović

Laboratory for Geochemistry, Cosmochemistry and Astrochemistry,
University of Niš, P.O. Box 224, 18000 Niš, Serbia

“When the solution is simple, God is answering.” Albert Einstein

Traveling into the future has fascinated Earthlings throughout the ages. Ancient legends of time travel into the future is however rare. One of them is about a monk enchanted by the song of a magic bird. After only a few minutes of her singing, he realizes that several centuries have passed.

Ever since the time of H. G. Well’s famous novel *The Time Machine* (1895), Earthlings have been intrigued with the notion of time travel. Before the twentieth century, scientists and philosophers however rarely study time travel into the future,¹ but since then they pursue intriguing investigations of this longstanding mystery and produce provocative solutions to them. Here we mean by the time travel into the future, the hypothetical situation when an Earthling travels into the (near or far) future of other Earthlings, on Earth.²

In 1905 the German physics journal *Annalen der Physik* published a paper by Albert Einstein. The paper, *Zur Elektrodynamik bewegter Körper*, (On the Electrodynamics of Moving Bodies) set out Einstein’s theory of Special Relativity, which explains how time and space change with motion. He proposed that the speed of light c ($= 2.99792 \times 10^8$ m sec⁻¹) is constant while both time and space are relative to the observer.

One of the tenets of Special relativity is its concept of time dilation which depends upon the second postulates of this theory that the speed of light c is the same in all inertial frames of reference [1].³ Special relativity states that if T_0 is a time interval of an event measured by an observer in a frame of reference stationary relative to the event then the time interval of the same event has a longer duration T as measured by an observer in a frame of reference moving with a relative speed v to the same event. In other words, according to the Lorentz-Einstein transformation, the two-time intervals T_0 and T are related by the formula: $T = \gamma T_0$ where $\gamma = 1/\sqrt{1 - v^2/c^2}$ is the time dilation factor. An Earthling traveling near the speed of light will

¹Traveling into the past is a much more interesting idea, but it involves unsolved paradoxes and is usually considered impossible.

² It is generally accepted that all of us traveling into the future - at the rate of about one second per second. But this is of rather limited interest for an Earthling who intends to travel to the future. He is far more interested in reaching the future much sooner than Earthlings on Earth.

³ It is of note here that Ziefle [1, and references therein] demonstrated that Special relativity is not compatible with the constancy of light that is measured on Earth.

experience time much more slowly than an Earthling on Earth or at rest. Thus, Special relativity offers a potential theoretical way of allowing the Earthling to travel forward in time.

Another potential theoretical way for the Earthling to travel to the future is the so-called gravitational time travel. According to General relativity, in a strong gravitation time is also slowed down. Thus, gravitational time dilation also allows time travel into the future.

Within General relativity, there is also a possible way for the Earthling to travel forward in time using so-called wormholes. Their existence is, however, still under serious debate. No wormholes of any kind have been identified in real life. Thus, Special relativity and General relativity allow the theoretical possibility of traveling forward in time for the Earthling, although such a trip is not a very realistic possibility for him.

It is worth noting here, that Premović [2] has shown that time is dilated for the nearby and distant galaxies in comparison with the Earth.

Scientists have proposed several types of so-called “time machines” to achieve travel into the future but all are well outside the range of what we could feasibly build today or in the foreseeable future. Here we will only mention one of them: a rotating cylinder of light designed by American physicist Ronald Mallet. He based this “time machine” on Einstein’s theories of relativity. Mallet suggests that the Earthling placed in his cylinder could lead either in the future or in the past. The whole thing is however debatable.

So we may conclude that theoretically speaking the time travel of the Earthling into the future can be achieved. If that is true, then we are faced with the fact that in that case, the future of each Earthling, mankind in general, the planet Earth, the Solar system, our galaxy Milky Way and everything else in the Universe is predestined. The question that arises now is who predestined that future? There is only one reasonable answer and that is the creator of everything that exists - God. From this, we conclude that if we invoke the possibility of time travel into the future then we invoke the supreme creator - God. If we renounce His existence, then there is no possibility of traveling to the future. However, for an object to reach relativistic speed, it requires enormous energy. This makes it practically impossible that time travel into the future can be realized except, as noted, “theoretically”. Therefore, God made it already almost impossible.

In conclusion, where is God, there is a definite future with at least a theoretical possibility for Earthling to travel forward in time.

Modern cosmology states that the Universe had a beginning at Big Bang (about 13.8 Gy ago). If this true and if Earthling can, at least theoretically, travel into the future, then God predestined the future of the Universe before this cosmic event. Modern cosmologists claim that the Universe must have a finite age, therefore it will have an end. If the present Universe will end there will be then no future. God will create a new Universe and a new planet Earth in a new creation.

References

- [1] R. G. Ziefle, *Einstein's special relativity violates the constancy of the velocity c of light under one-way conditions and thus contradicts the behavior of electromagnetic radiation*. Physics Essays 34, 275-279 (2021).
- [2] P. I. Premović, *A simple way to show space-time expansion*. The General Science Journal, December 2021.