

LETTERS TO PROGRESS IN PHYSICS**Zelmanov's Anthropic Principle and Torah**

Betzalel Avraham Feinstein

*Baltimore, Maryland, USA*E-mail: cafeinst@msn.com; <http://chidusheibetzalel.blogspot.com>

According to Jewish Kabbalistic tradition, nothing is real except for G-d. In this brief letter, originally addressed to Torah scholars, we demonstrate how Zelmanov's Anthropic Principle is consistent with this tradition by analyzing the famous question in philosophy, "If a tree falls in a forest and no one is around to hear it, does it make a sound?"

There is a famous question in philosophy: "If a tree falls in a forest and no one is around to hear it, does it make a sound?" Philosophers have been debating this question for centuries. The philosophers who answer "No", called idealists, are of the opinion that reality is whatever we perceive it to be. And the philosophers who answer "Yes", called realists, are of the opinion that reality exists independently of observers.

In the 1940's, the prominent cosmologist Abraham Zelmanov introduced his Anthropic Principle:

"The Universe has the interior we observe, because we observe the Universe in this way. It is impossible to divorce the Universe from the observer. The observable Universe depends on the observer and the observer depends on the Universe. If the contemporary physical conditions in the Universe change then the observer is changed. And vice versa, if the observer is changed then he will observe the world in another way. So the Universe he observes will be also changed. If no observers exist then the observable Universe as well does not exist" [1, 2].

The Anthropic Principle answer to the above question is both "Yes" and "No". "Yes", since the observer is dependent upon the observable Universe for his or her existence, so it is possible for sound, which is part of the observable Universe, to exist without an observer. And "No", since the observable Universe is dependent upon the observer for its existence, so it is impossible for sound to exist without an observer. So the Anthropic Principle seems to be logically contradictory. But Zelmanov's Anthropic Principle is nevertheless consistent with Torah. How is this possible?

According to our Torah sages of blessed memory, only G-d is real, since only G-d has an independent existence that is not subject to change from external factors.* The question, "If a tree falls in a forest and no one is around to hear it, does it make a sound?", is based upon the assumption that

either the observer or the observable Universe is real. Thus according to the reasoning of our Torah sages of blessed memory, the question, "If a tree falls in a forest and no one is around to hear it, does it make a sound?", is based upon a false premise, since both the observer and the observable universe are not real (according to the sages' definition of "real"). Hence, it is possible for the answer to the question, "If a tree falls in a forest and no one is around to hear it, does it make a sound?" to be both "Yes" and "No" and still be consistent with Torah.

Submitted on May 16, 2007

Accepted on May 21, 2007

References

1. Rabounski D. Zelmanov's Anthropic Principle and the Infinite Relativity Principle. *Progress in Physics*, 2006, v. 1, 35–37.
2. Zelmanov A.L. Chronometric invariants. Dissertation thesis, 1944. American Research Press, Rehoboth (NM), 2006.
3. Rabbi Shneur Zalman of Liadi. Lessons in Tanya. (The English translation of Tanya, with comments.) Translated by Rabbi Levy Wineberg and Rabbi Sholom B. Wineberg. Edited by Uri Kaploun. Comments by Rabbi Yosef Wineberg. Kehot Publication Society, New York, 1998, 1970 pages in 5 vols.

*One of the best references for the claim that Torah tradition says that only G-d is real is the book entitled *Tanya*, by Rabbi Shneur Zalman of Liadi [3]. Book 2 of Tanya, entitled *Sha'ar ha-Yichud ve'ha'Emunah* (translated as *The Gateway of Unity and Belief*) explains this principle in detail.