

## Universe and Life

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Since the discovery of the background radiation, we believe that the Big Bang theory on the birth of the universe is essentially correct and we are witnessing some development in the understanding of the beginning of the universe. On the other hand, we don't seem to have any concrete evidence as to the birth of the first life form in this universe. No understanding can be claimed on this issue. Even the most knowledgeable experts in this field admit that any amateur researcher can make his or her own theory at this stage.

I take advantage of this situation and try to contemplate, in my own way, what sort of event actually was crucial to the birth of life form. In this regard, I cannot stop speculating that there is a similarity between the birth of the universe and that of the first life form. In both cases, it seems that the event which has a very small probability of occurring actually occurred. In the case of the universe, according to the Einstein theory, the quantum mechanical tunneling in the time-like direction gave birth to the universe. In other words, Euclidean space-time actually turned into the Minkovsky space-time although the event is expected to happen with an extremely small probability.

What is the situation in case of the life form? In an ordinary sense, the crucial protein or the RNA or a combination of these might have been formed although this also has a very small probability to happen. Another possibility might be, like in the case of the universe, that the certain crucial chemical bond was formed through a space-like quantum tunneling effect. I would like to know if there is such a unique chemical bond which exists in all the life forms, and only in the life forms.

In any case, I believe that the life form cannot be found abundantly here and there in the universe. It is not possible to calculate the probability of the formation of the life form at this stage but it could be an astronomically small or, rather a cosmologically small number.

Only after we have enough data of the proteins and the good understanding of their roles in the life forms, could we start to think of realistic theory of the birth of the life form.