

# Comment on the Recent ETI Paper arXiv:1104.4462

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*Dedicated to Marie-Louise Nykamp*

## Abstract

Two highly consequential limitations in ETI studies are briefly mentioned.

“History is written with the feet ...”

Ex-Chairman Mao, of the Long March fame ...

Science is not done scientifically, since it is mostly done by non-scientists ...

Anonymous

A “mathematical problem” ?  
For sometime by now, American mathematicians  
have decided to hide their date of birth  
and not to mention it in their academic CV-s.  
Why ?  
Amusingly, Hollywood actors and actresses have their  
birth date easily available on Wikipedia.  
Can one, therefore, trust American  
mathematicians ?  
Why are they so blatantly against transparency ?  
By the way, Hollywood movies have also for long  
been hiding the date of their production ...

A bemused non-American mathematician

## **1. Missing On Two Fundamental Approaches to ETI**

The recent ETI paper arXiv:1104.4462 is remarkable, and also rather unique so far, by its conscious effort to open up the enquiry as widely as possible.

And yet, it misses on two fundamental directions of concern which will briefly be presented in the next two sections.

## **2. Structures of Space-Time to Consider**

Strangely enough, by far most of us, we have for more than two millennia by now been arrested in a view of space-time which assumes tacitly the Archimedean Axiom, [1,2]. And to add to it, much unlike in ancient Egypt, and described by Euclidean Geometry, where that axiom was most useful in measuring the land, nowadays there is no known reason in modern physics why it should be imposed on the structure of space-time.

The moment one sets aside that axiom, the structure of space-time

opens up to a variety of possible mathematical models which have a rich self-similar structure due to the presence of highly nontrivial infinitely small and infinitely large space-time worlds, both of them inexistent under the Archimedean Axiom, [1,2].

To be brief, that means the following two facts.

First, each point  $P$  in the usual space-time, that is, under the Archimedean Axiom, can have a whole world  $W_P$  around it, a world which is as rich in points of its own as the whole rest of the usual space-time, yet it is infinitesimal in the sense that  $W_P$  does not contain any other point  $Q$  of the usual space-time, and more over, does not even intersect with any corresponding  $W_Q$ .

Second, beyond the assumed infinity of the usual space-time there are infinitely beyond infinite large worlds, more and more large than the infinity of the usual space-time. And such infinitely beyond infinite large worlds do not intersect with one another either.

Now the possibility of existence of such space-time worlds raises the question of so far never considered ways of communication. Indeed, it simply renders naive the attempts to send signals into the Cosmos, as long as that Cosmos is considered to be the usual space-time. Certainly, if around each space-time point  $P$  there is a whole infinitesimal world  $W_P$  which is disjoint from all other points of the usual space-time, then there is no need to send signals far away from us in space. Rather, we should try to think about ways to penetrate those infinitesimal worlds which are all around us everywhere in space, and possibly do so peacefully in their infinitesimal terms.

Related to the infinitesimal size of their time dimension, it may simply happen that, although on their own scale the respective being may exist for a longer time, their existence on our scale is so brief as to be beyond our capability to communicate in more meaningful ways. This possibility should not be excluded given our present knowledge of particles with a very short time existence on our scale of time.

As for sending signals to those infinitely beyond infinite worlds far beyond the infinity of our usual space-time, that may obviously be a

no less daunting task.

And on those time scales, we simply face the mirror problem, both regarding space and time, which we face when trying to communicate with the infinitesimal space-time worlds.

And such problems can only get more difficult when we have to face worlds in which the infinitesimal, finite, and infinite beyond infinity aspects of space and time may combine in the other six ways, and not only in infinitesimal space with infinitesimal time, finite space with finite time, infinitely beyond infinite space with infinitely beyond infinite time, but also, for instance, like infinitesimal space with infinitely beyond infinite time, and so on ...

So much for sending signals ...

But then, there is also the problem of a more direct, let us say, physical type encounter ...

And when it comes to beings from all those infinitesimal worlds  $W_P$  at points  $P$  all around us, it may simply be that they are already crawling in their zillions next to us, and we simply fail to notice them due to their infinitesimal existence, be it in space or time ...

On the other hand, with the beings from those infinitely beyond infinite worlds, beyond the infinity of our usual space-time, we may simply be in the situation of failing to notice them as individuated in any way, since they are so immense in space, or evolve so slowly, or on the contrary, so fast in time...

Also, we may simply be existing within one or another such a infinitely beyond infinite worlds ...

In short, our long time, unconscious and tacit but stubborn hold to the Archimedean Axiom has managed to limit most severely, and in fact ridiculously, our views of space time. And no wonder : that axiom which was quite appropriate when remeasuring land in Egypt each year after the flood of Nile, need no longer necessarily hold in particle physics, in cosmology, or for that matter, in trying to deal with ETI

issues ...

### 3. On Life and Intelligence ...

What life, intelligence, and ways of communication are concerned we may be still ways more limited in our present ETI studies than we happen to be due to the ancient Archimedean Axiom.

And to give a mere hint in this regard, it is worth recalling the *morphic fields* and *morphic resonance* advocated by Rupert Sheldrake, [3].

Indeed, according to that view, just about all forms of structure - be they animate or inanimate, in our usual terms - do automatically create a field around them which, among others, makes it easier for similar structures to emerge elsewhere. And clearly, this is a form of intelligent communication, as well as effective and meaningful reception ...

What else may be there in realms of intelligent communication and effective meaningful reception, well, it should be quite clear that this is such an immense issue as to render utterly naive and bordering on the useless all attempts in ETI studies which cannot help but wallow in any number of less than conscious and tacit limitations ...

## References

- [1] Rosinger E E : Surprising Properties of Non-Archimedean Field Extensions of the Real Numbers. arXiv:0911.4824
- [2] Rosinger E E : Microscopes and Telescopes for Theoretical Physics : How Rich Locally and Large Globally is the Geometric Straight Line ? hal-00586705
- [3] Sheldrake R : A New Science of Life: The Hypothesis of Formative Causation, Los Angeles: JP Tarcher, 1981, ISBN 0-87477-281-8