

**Guest Editorial****“The Miracle of Existence According to Theoretical Physicist Matti Pitkänen”  
Editorial Comment**Philip E. Gibbs<sup>\*</sup>, Arkadiusz Jadczyk<sup>†</sup>, Dainis Zeps<sup>‡</sup>**Abstract**

In this focus issue of Prespacetime Journal we present a series of Matti Pitkänen’s papers under the headline “The miracle of existence according to theoretical physicist Matti Pitkänen. 30 years of independent research” representing development of this TGD approach in theoretical physics during the latest year of research.

**Key Words:** Topological geometrodynamics, unified theory of space-time symmetry and the standard model, Kähler structure, infinite dimensional spinor representation, algebra of fermionic creation and annihilation operators, p-adic numbers, infinite primes

In this focus issue of Prespacetime Journal we present a series of Matti Pitkänen’s papers representing his achievements during the latest year of research. The series is headlined “The miracle of existence according to theoretical physicist Matti Pitkänen. 30 years of independent research”. With this we wanted to commemorate Matti Pitkänen’s scientific effort in some notable time period and in the same time to present the latest developments of his approach in theoretical physics. We intended to read these articles through to check his calculations and ask Matti to give us explanations on any unclear statement we found, but soon we were persuaded of the impossibility of such a conventional approach. Matti Pitkänen’s mathematical argument is too intertwined and the author himself cannot be treated as an ordinary scientist. So we decided to publish the articles as they are with our short comments to explain our personal opinions on his work.

**Philip Gibbs:**

Matti Pitkänen has been working for over thirty years on his extraordinary theory of physics, number theory and consciousness. The long version of his work covers over ten thousand pages making it very hard to access without the kind of extraordinary effort that few people are willing to give to independent work. In order to bring his theories to a wider audience he has provided us with an introduction of about 300 pages in 9 parts for publication in this focus issue of Prespacetime Journal. Although I have known about his work for some time, it is only through these latest papers that I have started to get a glimpse of how it holds together.

In this view of the universe that he calls Topological Geometrodynamics, physics is described by a space of surfaces embedded in an eight dimensional manifold. The geometry of this manifold could be 4-D Minkowski space times the projective space  $CP_2$ . This topology is chosen to give a unified theory of space-time symmetry and the standard model, although other possibilities are considered. The Kähler structure of the manifold is important in deriving the physics.

To get to the full theory the dynamics of the embedded surface must be quantised. This is achieved by using an infinite dimensional spinor representation on the space of possible embeddings. The

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corresponding Clifford algebra is equivalent to an algebra of fermionic creation and annihilation operators. The states of this system can be labelled with prime numbers each of which forms the bases for a p-adic number system. Matti goes further by iterating the process of second quantisation to form multiparticle states that define a system of infinite primes.

In this way Matti Pitkänen builds up a complex model that remains difficult to understand but also difficult to dismiss. He is able to derive predictions about high energy physics and cosmology as well as an interpretation of consciousness. For this he deserves the right to have his work published and available for further scrutiny. I hope this version of his TGD theory will help fulfil that goal.

### **Arkadiusz Jadczyk:**

Matti Pitkänen is a prolific and original researcher who does not easily fit into the categories of institutionalized science; neither does he fit into the categories of cranks. His knowledge of old and current ideas of physics and math is startling, and his own ideas are brave. Yet his papers, as a rule, do not fit the standards of the professional scientific journals. Of course many of the papers that are being published in peer-reviewed journals should never have been published if only the referees examined them in details and with understanding. They are often being published because the referees are lazy or ignorant, or because the authors come from "recognized" institutions.

In his book "Chance and Chaos", Princeton University Press 1991, David Ruelle, a well known mathematical physicist, wrote about this situation in the following way:

"... In other words, appointments and promotions are decided on the basis of number of published papers. This situation forces many individuals who have neither interest in nor ability for scientific research, to write papers and submit them to journals. The referees, who are themselves research scientists, are thus flooded with mediocre papers, about which they are required to produce reports. Since they have more interesting things to do, the reports are often hasty and superficial. Reasonable-looking papers are accepted, obviously bad papers are rejected, and good papers that are a bit original and out of the norm tend to be rejected too. This is a well-known problem, and nobody really knows what to do about it. Fortunately there are many scientific journals, and a really good paper will finally get published somewhere."

Matti's papers are certainly "a bit original" and "out of the norm". We are publishing them here hoping that there is enough interesting and useful material in them to justify our mustard seed of faith in Matti. The mathematics of these papers is not that of the Bourbaki school - that's for sure. Matti himself is well aware of this fact. Yet some of the rough mathematical ideas presented in the TGD series may be a good starting point for other researchers of a stronger mathematical inclination. With this in mind we decided to go "against the tide" and help Matti Pitkänen's work to circulate more widely.

### **Dainis Zeps:**

Matti Pitkänen was encouraged to write several papers in which he was to formulate and elucidate the basic mathematical ideas of his TGD approach in physics so to make his theory more accessible to the wider scientific community. He agreed but then came back to us with several articles in which he performed some considerable breakthroughs according his own judgment. On trying to read these articles it was clear that all this approach doesn't make his work more transparent and elucidated, maybe quite the contrary. In the new approach the so called infinite primes play a bigger role. Previously Matti Pitkänen has had presented several articles about the use of p-adic numbers in physics. He has developed a so called many-sheeted space-time based on these numbers, and his p-adic number approach was in accordance with traditional mathematics. With the introduction of

infinite primes the situation has changed. According to Matti's words his new mathematical ideas don't fit together so simply with "conventional institutionalized science". With p-adicity based on infinite primes, his mathematics ceases to be independent and becomes part of his all-embracing approach of TGD.

What should be done for readers and experts "outside Matti's mind" in such an unconventional situation? How can we understand what Matti Pitkänen is doing?

M. Pitkänen started with a very promising PhD thesis and book on Topological Geometrodynamics [1], that was praised by celebrities. Then his interest turned more and more in the direction of application of his approach to consciousness. Conventional experts tend not to understand physicists talking about consciousness, so what path should a researcher choose when his own voice of conscience requires its own way, while the scientific community around expects some more conventional scientific activity? What problems would there be for a theoretician like Matti Pitkänen to write heaps of technical articles using his extraordinary mathematical training in all mathematical disciplines that a physicist may wish to work with? What makes a scientist of the 20<sup>th</sup> century into an independent researcher as in the time of Faraday? Perhaps only independent researchers do science that is free from scientialism? For more than thirty years Matti Pitkänen has worked as an independent researcher. Independent actually of what? Of places in universities, profitable projects, attendance of scientific conferences and scientific seminars, of ability simply to buy books necessary for research.

But Matti Pitkänen is more than simply an independent researcher. He has become an independent expert in the direction of the theoretical physics developed and maintained only by himself. How can we decide if it deserves to be called a new scientific discipline?

We do not know whom God and Providence chooses for those who must receive most grace in form of scientific success for future generations. But we must at least try our best not to "kill prophets", not to close those directions in science that maybe deserve the most application of our strength and effort.

## Bibliography

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