



Complimenting the Deep Ideas of Deutsch-Marletto Constructor Theory with the Computational Power of the Pythagorean-Plato Number System

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ABSTRACT

Starting from the realization that constructor theory is an extension of David Deutsch's quantum Turing machine while E-Infinity Cantorian space time is essentially a transfinite golden mean computer which is nearest to Alan Turing's work, it follows inevitably that merging the deep ideas of Deutsch-Marletto with the computational power of E-Infinity theory would mean that the Pythagorean Platonic golden mean number system lies at the very root of physical science, art, philosophy and even consciousness. This has led to a truly great synthetic a priori as anticipated by the remarkable relatively recent constructor theory as well as the centuries old teachings of the acclaimed school of Alexandria. All these momentous conclusions were experimentally confirmed by the recent astounding discovery that gravity is of a quantum origin.

Keywords: Constructor theory, E-infinity theory, Cantorian spacetime, Golden mean number system, Unification of science art and consciousness.

IN LIEU OF INTRODUCTION, ANALYSIS AND CONCLUSION

The present short note was initially motivated by two remarkable scientific revelations. The first is essentially mathematical and philosophical namely, constructor theory which was recently advanced by some of the most influential figures in theoretical and mathematical physics [1-3]. The second is an experimental, truly earth shattering finding namely that gravity is basically quantum mechanical by its very nature [4]. Putting these two novel discoveries together we are led to the unsuspected yet unavoidable conclusions that we may have overlooked something simple but fundamental for almost half a century. This obvious and almost trivial oversight means simply that at the root of all the deep questions of physics there lies the number system we use [5-16]. That way the difference between classical and quantum physics disappears or at a minimum is blurred and all what is left is the centuries old Platonic golden mean number system developed long ago in the famous shrine of science and philosophy of the Greek-Italian-Egyptian city of Alexandria [8-11] which was established by the legendary Macedonian Alexander the Great.

It is inescapable to conclude joyfully that all what we need is the golden mean quasi Turing computer which is fully realized by the said Golden mean number system of Alexandria as we hope to show shortly in the rest of the present mini paper [1-5].

In fact, even a fleeting look at Refs. [1] to [7] it becomes obvious that we have been missing a very obvious fact which is far deeper and far simpler than what we could have ever imagined. Let us start by a quick analysis of the content of the above said references in the light of our own voluminous publications cited in Refs. [5-11]. This task is best performed and more easily achieved if the reader has a good look at the following sections namely A to D as well as the attached notes.

CONSTRUCTOR THEORY

In [3] the question was posed : Will the constructor theory rewrite physics? This theory was developed by David Deutsch and Chiara Marletto. It basically examines if a task is possible or not and relates information to quantum computation. von Neumann's contra factual is among many other related facts and subjects [1-8]. The best and simplest example for that is Newton's falling apple i.e., classical gravity.

A new gravity experiment

In [4] an unexpected experiment posed an earth-shattering question namely: Has a new experiment just proved the quantum nature of gravity [Big Think]. (See the journal "Science" 2022) [4].

Inter Cantorian E-Infinity theory and its underpinning golden mean number system.
[See the work of the school of Cantorian spacetime theory][6-18].

A new synthetic a priori leading to a fundamental unification at the root of theoretical physics (see the work of Emanuel Kant. Wikipedia).

IMPORTANT NOTES FOR THE PROSPECTIVE READERS

David Deutsch is a physicist who became a pioneer in the field of quantum computation by formulating a quantum Turing machine and giving an algorithm design to run a quantum computer. Born to a Jewish family in Haifa, Israel on 18 May 1953 (ten years younger than the Author). He is a student of Dennis Sciama and a fellow of the Royal Society. His acclaimed book is: The fabric of relativity. He is nearest to E-Infinity via Alan Turing's machine [1-3].

Constructor theory is Deutsch's Theory of Everything and may be replacing A. Turing's machine. Our transfinite golden Turing machine can in turn replace Cantorian spacetime theory and consequently we have the fastest computer in the universe, namely the golden mean number system quasi computer [1-3], [5-8].

Dr. Chiara Marletto. Theoretical physicist at Wolfson College, Oxford. She is a pioneer in the field of constructor theory which is a generalization of the quantum theory. She is the co- author of the great David Deutsch [1-3].

Relation between geometry and numbers by Kevin Hartnett [9]

Quest to build space time out of quantum particles (Quanta Magazine) by Adam Becker [2021]. Has a new experiment just proved the quantum nature of gravity? Starts with a Bang. January 18 (2022). [https:// jgthjnj.com](https://jgthjnj.com) [4].

How infinite series reveal the unity of Mathematics. See article in Quantum Magazine [2022] by Steven Strogatt.

LITERATURE FOR FURTHER RELEVANT GENERAL READING

The work of Garnet Ord, Laurent Nottale and M. S. Elnaschie, Prof. Ji H. He and L. Crnjac [5-11]. The books and papers of Prof. Scott Olsen [8], [19, 20], [23].

E-Infinity communications [see for instance Google. <https://e-infinity-energy.blogspot.com> [24].

The work of G. 'tHooft, D. Gross, M. Feigenbaum, I. Prigogine, Prof. M. Habeeb, Prof. P. Auffrey, Prof. Herman Otto, and the great Prof. Otto Rössler. [9-21].

Non linear dynamics and Fractals [5-21] 3.6. One sentence conclusion:

The golden mean number system is the only number system which includes all integers, rational and irrational numbers in addition to zero and countable as well as uncountable infinities in a natural way and does not break down anywhere. It is the mathematics of the constructor theory and the lingua franca of nature and consequently it is the foundation and unification of rational existence [1-21]. To put it succinctly, the golden mean number system is the perfect mathematic required by the perfect philosophical constructor theory of David Deutsch [1-3] which unified the ununifiable and this may be shown via the topology of Mauldin-William's golden mean Cantor set [5-23].

ACKNOWLEDGEMENT

The Author is deeply and truly indebted to Professors Ji Huan He and L. Marek-Crnjac without their hard and dedicated work, he would not have been able to achieve much. On a very broad and "grass root" level, the discussions and support which the Author received from H. E. Prof. S. Al Athel could not be overestimated.

Similar impulses and encouragement through numerous ways came to the Author from his dearest friends: Otto Rössler and A.M. Helal who have also contributed many fundamental ideas to the Author's work. Last but not least, the Author has benefited greatly from the work of imminent and great scientists such as G. 'tHooft, R. Penrose, D. Gross, M. Feigenbaum, I. Procaccia, Herman Otto and Shokri Nada. The Author would like to apologize for unintentionally omitted names of many colleagues, friends and students due to space limitation and the usual fading memory of the unavoidable old age.

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