

## 4 SCIENCE LETTERS

Author - Rodney Bartlett

Abstract -

These letters cannot, I've discovered, be published in science or medical journals. In the first case, they don't conform to editorial standards which say they aren't suitable for the Correspondence (Letter to Editor) section. In the second case, the relevant letter (3) is not based on "evidence-based medicine" (ideas limited to verification by present technology). So it appears that the only way to express these thoughts is to be nonconformist, give science higher priority than editorial matters, and offer them to the preprint vixra.org. The 4 letters are:

**Letter 1 - Broken Infinity** (paragraphs kept getting added to this original letter, so some references are included in the letter while some are listed at the end)

**Letter 2 - "Unscientific" Possibilities Of A Universal Unified Theory**

**Letter 3 - Science's Resurrected Immortals**

**Letter 4 - New Space-time Travel**

Content -

**Letter 1 - Broken Infinity**

Mathematics often finds a place in future physics e.g. Planck's initially mathematical quanta became physical in Einstein's photoelectric explanation. Could a future computer simulation of the universe that uses mathematics' boundary-less, so-called Imaginary Time (1) cause the simulation to be eternal, infinite<sup>^</sup>, and indistinguishable from this "real" universe? (The lack of boundaries would also avoid Relativity's breaking down at the scale of quantum mechanics, thus introducing the graviton and the theory of Quantum Gravity.)

<sup>^</sup> "According to general relativity, (an infinite amount of energy) would curve the universe to an infinitely small size, which obviously does not happen!" ("The Grand Design" by Stephen Hawking & Leonard Mlodinow - Bantam Press, 2010, p.113). The universe could contain infinite energy because, like quanta being emitted or absorbed in discrete packets, the universe's infinity would be broken, and not continuous, if it was constructed of electronics' binary digits ie of discrete 1's and 0's.

Some particles must be turned through two complete revolutions to look the same ie to possess spin 1/2 (reference 2). This geometry is equivalent to the topological fact you must travel around a Möbius Strip twice to reach your starting point. Since it's known quantum spin has discrete values, these values can be determined by individual pulses

of energy. The on/off, or increased-energy/decreased-energy, of the pulses of the virtual particles<sup>^</sup> filling space-time would produce the discrete values of binary digits' 1's and 0's.

These 1's and 0's are encoded in the shape of a Möbius long before reaching the scale of quantum particles.

<sup>^</sup> These "particles" are actually quantum fluctuations/energy pulses, and their motions could be seemingly random if they obey Chaos theory's principle of "hidden order existing in apparent disorder". Since General Relativity says space-time IS gravity, virtual particles not only fill space-time but also compose gravity. This means the gravitons composing gravity must be virtual, not ordinary, particles. The undetectable virtual photons that give rise to forces between matter particles (Stephen Hawking's "A Brief History of Time", p.69) also fill space-time/compose gravity.

Two-dimensional Mobius strips pair up to produce four-dimensional Klein bottles. (3) This produces the 3 spatial dimensions/1 temporal dimension familiar to us. There could be extra dimensions unified with these e.g. the previously mentioned Imaginary Time which, following the union of time and space into space-time, might conceivably be linked to a so-called Imaginary Space\* full of Dark Matter. One theory scientists have for the universe's shape says it is a doughnut. From that, I conclude the type of Klein bottle that Mobius Strips combine into is the figure-8 Klein bottle because this somewhat resembles the doughnut, as well as observable spiral galaxies. "Some scientists believe that large warm and cool spots in the Cosmic Microwave Background could actually be evidence for this kind of ... (doughnut/figure-8 Klein bottle) ... topology". [4]

\* Referring to the phrase "imaginary space-time", Professor Itzhak Bars of the University of Southern California in Los Angeles says, "one whole dimension of time and another of space have until now gone entirely unnoticed by us". ("A Two-Time Universe? Physicist Explores How Second Dimension of Time Could Unify Physics Laws" - May 15, 2007 By Tom Siegfried (Read more at: <https://m.phys.org/news/2007-05-two-time-universe-physicist-explores-dimension.html>).

## References

(1) "A Brief History of Time" by Stephen Hawking - Bantam Press, 1988, p.139

(2) "A Brief History of Time" by Stephen Hawking (Bantam Press, 1988): pp. 66-67

(3) Polthier K, "Imaging maths - Inside the Klein bottle": <https://plus.maths.org/content/os/issue26/features/mathart/index>

(4) "What Shape is the Universe?" by Vanessa Janek: (May 11, 2015) - [http://www.universetoday.com/120157/what-shape-is-the-universe/#google\\_vignette](http://www.universetoday.com/120157/what-shape-is-the-universe/#google_vignette)

## Letter 2 - "Unscientific" Possibilities Of A Universal Unified Theory

Stephen Hawking wrote in "A Brief History of Time" (p. 168) that "If a complete unified theory was discovered, it would only be a matter of time before it was digested and simplified ... and taught in schools, at least in outline. We should then all be able to have some understanding of the laws that govern the universe and are responsible for our existence."

A complete unified theory would not be restricted to mathematics, for that would make the theory incomplete. A complete theory would, by definition, affect everything in space-time. Affecting everything in time means the present generation would be able to learn how to intuitively access the knowledge of future centuries.

I don't want to be harsh. But Unification necessarily means today's scientific approach of viewing objects and events as separate will become limited to the way senses perceive objects and events. Separateness will belong to "classical" existence - unification to "quantum mechanical" existence where all energy and matter particles, objects and events in space-time are entangled. Things like extrasensory perception, telekinesis, and astrology are obviously impossible in present science. But in a unified universe where everything affects everything else; how can science ignore ESP, astrology, and presently substandard "theories"? (These suggested solutions to scientific problems which members of the public send to scientists could soon develop into practical application of unification i.e. of quantum-mechanical science. This would complement, as well as vastly extend, the classical science which I believe didn't end with Relativity's adoption but still exists in relativistically modified form.)

## Letter 3 - Science's Resurrected Immortals

Re: "Quantum gas goes below absolute zero - Ultracold atoms pave way for negative-Kelvin materials" by Zeeya Merali: 03 January 2013: <http://www.nature.com/news/quantum-gas-goes-below-absolute-zero-1.12146>

Going below absolute zero has consequences that go beyond negative-Kelvin materials. It also addresses the dream of attaining healthy immortality - as well as of resurrecting the dead, through advances in science.

Living things are known to have positive temperature - any thermometer will confirm this - to which added energy will increase entropy, eventually causing death (Braun, S. et al. Science 339, 52–55 [2013]). Could their high degree of order result from living things also being negative-temperature systems that, as implied by a 1919 paper by Einstein, have gravitational and electromagnetic energy constantly added to them? ("Spielen Gravitationsfelder im Aufbau der materiellen Elementarteilchen eine wesentliche Rolle?" ["Do gravitational fields play an essential role in the structure of elementary particles?"]

by Albert Einstein - Sitzungsberichte der Preussischen Akademie der Wissenschaften, [Math. Phys.], 349-356 [1919] Berlin). Adding energy to negative-temperature systems causes them to decrease in entropy [Braun, S. et al. Science 339, 52–55 [2013]]. Thus, they achieve the innate potential to decrease entropy perpetually, and to be immortal. Einstein's General and Special Relativity inform us that space-time is curved and warped, with time not being simultaneous for different observers. Therefore, time doesn't always follow the accepted straight line from past to future and our deceased ancestors can one day benefit from this potential for decreased entropy being realised ... they'd be resurrected!

#### Letter 4 - New Space-time Travel

Cover Letter -

Dear Editor/Reviewers,

Using propulsion of the present and immediate future, we'll never even reach the nearest star in a short time. My submission proposes a method enabling us to reach any star or galaxy in the entire universe in a heartbeat. This sounds like fantasy, but it's based on Albert Einstein's theories spanning 1905-1955, as well as an electrical-engineering experiment at Yale Uni in 2009. The technology would allow trips into the past and future, plus incredibly shortening a journey to Mars - thus saving astronauts and cosmonauts from radiation exposure and psychological isolation, and also from bone and muscle wasting.

Sincerely,

Rodney Bartlett

---

Manipulating  $E=mc^2$  in weird ways (compatible with the weird physics of black holes) seems to say distance can be totally deleted from space-time. Let's represent the masslessness of photons by 0 (zero), and also the masslessness of the theoretical gravitons by zero. Suppose theories developed from Einstein's 1919 paper "Spielen Gravitationfelder im Aufbau der materiellen Elementarteilchen eine wesentliche Rolle?" (**"Do gravitational fields play an essential role in the structure of elementary particles?"**) are proven correct one day. Then mass could result from photon-graviton interaction (this agrees with theories where the role of the Higgs field is fulfilled by particular couplings<sup>^</sup>), and we could replace the  $m$  with zero.

<sup>^</sup> See M. Tanabashi; M. Harada; K. Yamawaki. Nagoya 2006: "The Origin of Mass and Strong Coupling Gauge Theories". International Workshop on Strongly Coupled Gauge Theories. pp. 227–241.

This results in  $E=0 \cdot c^2$  ie outside familiar circumstances (such as in black holes),\* it is possible for E to equal 0. Having reduced the equation to nothing but E,  $m=0$  and  $c^2=0$  which means  $m=c^2$ . At first glance,  $m=c^2$  seems to be saying mass exists at light speed. But the absence of E (energy) refers to there being no interaction of electromagnetic energy and gravitational energy, and therefore no mass. If mass cannot be produced, Einstein's paper suggests mass-producing gravity must be described by zero. General Relativity says gravity IS space-time. The zeroness of space-time/gravity does not mean they don't exist ... they obviously do. It means we can relocate matter and information superluminally, or travel into the past and future, because distance can be eliminated from space and time.

\*  $E=0$  and  $m=c^2$  are necessary for black holes to be portals to other regions of time and space within the universe [black holes are regarded as portals in "Soft Hair on Black Holes" by Stephen W. Hawking, Malcolm J. Perry, and Andrew Strominger (Phys. Rev. Lett. 116, 231301 – Published 6 June 2016)]. But travel to black holes isn't necessary to use their portal abilities because 'Physicists now believe that entanglement between particles exists everywhere, all the time, and have recently found shocking evidence that it affects the wider, "macroscopic" world that we inhabit' ["The Weirdest Link" (New Scientist, vol. 181, issue 2440 - 27 March 2004, page 32 - online at <http://www.biophysica.com/QUANTUM.HTM>]. Caslav Brukner, working with Vlatko Vedral and two other Imperial College researchers, has uncovered a radical twist. They have shown that moments of time can become entangled too ["Quantum Entanglement in Time" by Caslav Brukner, Samuel Taylor, Sancho Cheung, Vlatko Vedral (Submitted on 18 Feb 2004) <http://www.arxiv.org/abs/quant-ph/0402127>]. Entanglement disposes of Cosmic Inflation's idea that the uniformity in the cosmos means particles in the universe as a whole - not merely our observable part - must have once been in such a tiny space that they were in physical contact. And without the need for the universe as a whole to be materially tiny, there's no need for a Big Bang theory and the consequent cosmic expansion. Edwin Hubble (the astronomer credited with discovering universal expansion) wrote that "expanding models are a forced interpretation of the observational results." [Hubble E (1936) "Effects of Red Shifts on the Distribution of Nebulae" in Ap. J. 84: 517]. I conclude there is no cosmic expansion but that the measurements attributed to expansion actually measure what I call topological extension from binary digits to Mobius strips to figure-8 Klein bottles to quantum particles to macroscopic forms to astronomical forms to the entire universe throughout time. I ask, Is it possible that the extension by mathematical topology's figure-8 Klein bottles is, in Edwin Hubble's words in the previous reference to his work, "one of the principles of nature that is still unknown to us today"?

Would the combining of gravitation and electromagnetism (attempted in Einstein's Unified Field Theory) allow the gravitons in gravitational waves to perform like the photons of light in Yale University's electrical-engineering experiment? ["Tunable bipolar optical interactions between guided lightwaves" by Mo Li, W. H. P. Pernice & H.

X. Tang - Nature Photonics 3, 464 - 468 (2009)]. Those photons attract and repel each other at tiny scales – if gravitons did the same, curves in space-time (gravity) could be drawn together, forming a type of wormhole and deleting distance. This would enable visits to other star systems or galaxies. Wikipedia reports on space-time warping -

1) For some time, physicist Ronald Mallett has been working on plans for a time machine. This technology would be based upon a ring laser's properties in the context of Einstein's general theory of relativity. ([https://en.m.wikipedia.org/wiki/Ronald\\_Mallett](https://en.m.wikipedia.org/wiki/Ronald_Mallett))

2) Harold ("Sonny") White from NASA's Johnson Space Center is a member of Icarus Interstellar, the nonprofit foundation whose mission is to realize interstellar flight before the year 2100. At the 2012 meeting of 100YSS (the 100 Year StarShip vision), he reported using a laser to try to warp spacetime by 1 part in 10 million with the aim of helping to make interstellar travel possible.[Moskowitz, Clara (17 September 2012) "Warp Drive May Be More Feasible Than Thought, Scientists Say" - space.com].