

Teaching the Arithmetic of Quantum Entanglement

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Abstract

If one wants to understand quantum entanglement (in quantum physics) and the way that our universe actually works to provide a virtual-time-machine environment, then my new subject of quantum relativity and the associated new arithmetic that I teach within this article becomes mandatory.

Keywords: Quantum Physics, Arithmetic, Two Dimensional Space, Leonhard Euler.

Introduction

Mathematicians worship the false “god” of their own human developed number theory and are unable to understand anything much of the higher arithmetic, out of which their humble lowly counting numbers are as often as not merely a subordinated derivative. We can say “one, two, three” and so on; and we were told, from three years old, to think that these numbers mean something on their own, but they do not. We must add in something that we are counting and then the numbers do mean something. For example, the unit can be the apple, or the new idea. We have four apples, we have two new ideas, and so on. Therefore, there must be something that these mathematicians are counting in, and indeed there is, they are counting in imaginary units. All the pure counting numbers are in imaginary units, there is nothing real about any pure counting number at all. The term “real number” is nonsense because the units that they are counting in are always and everywhere imaginary. We have all been indoctrinated from the age of about three years old into inwardly digesting a lot of false abstract nonsense about the pure counting numbers.

An Inertial Arrow Spinning through Two Dimensional Space

I would like to introduce my new subject of unified number theory using an imaginary flat two dimensional plane, if you like an infinite flat ice rink, except that there is a vacuum and this is magic zero-friction ice. On the ice surface there exists a heavy black iron spike shaped like an archer’s arrow. We can observe the arrow and we have an accurate clock. Let us imagine an infinite straight line drawn on the ice that is marked at every metre with a dash. The ice is perfectly clear and we can chose to observe from under the ice or from above it, in fact, let us just ignore gravity and think that the two possible observation positions from above and from below the ice plane are utterly symmetrical. In fact there are four possible observation positions because what ever side of the ice plane we are on there are two sides of the line. The iron arrow remains on the ice surface and

on the line because nothing ever happens to move it off the ice surface or move it off the line in the ice. At the time that we start watching from above the ice, we can see that the arrow is spinning clockwise at 2π radians per second and moving from left to right at one metre per second, but it does not matter when we start watching because this situation never changes.

Now I want to describe the arrow as having both position and polarity. Polarity means the direction that it is currently pointing to on the flat two dimensional ice plane. The position of the arrow forms a perfect linear clock and its polarity also forms a perfect rotational clock. I can now set aside the reference clock that I needed for initial calibration because now I have two perfectly stable and calibrated clocks to observe. The linear position of the centre of the arrow along the line tells me the time on the linear clock. The polar rotational position of the arrow tells me the time on the rotational clock. To keep time using the linear clock I must keep count of how many metre marks the arrow centre has passed. To keep time using the rotational clock I must keep count of how many times the arrow head has passed through the polarity where it points along the line in the direction of travel. The two clocks are perfectly consistent and in this example synchronous. The rotational clock gives me a tick every second and the linear clock also gives me a tick every second.

Now Let this Arrow in Time have Two Observers who can Communicate

Let us say that I am the observer above the ice plane and that my friend Joe is under the ice plane and that Joe and I have met each other face to face and have agreed what left and right means and also what clockwise means. Over our communication channel I tell Joe that I see that the arrow of time is moving from left to right and it is rotating clockwise. Joe tells me that he is sorry to contradict me but he sees that the arrow of time is moving from right to left and is rotating anti-clockwise. From this we find that left and right must be meaningless, it all depends upon

the observer's relative facing position, facing the line from my side of it or from the other side, we also find that clockwise and anti-clockwise are meaningless, that also depends upon the observer's relative position above or below the 2D plane, but we have agreed that above or below the plane is meaningless in this case because we have eliminated gravity.

Describing the Arrow of Time's Polarity as an Exponential Function

When I was 19, they told me at university that the polarity of an object rotating in time can be described by the function $e^{i\omega t}$. Now, if one only wants a polarity, that is perfectly correct, but we need to multiply our field magnitude vector by a unit vector rotating in time and for that $e^{i\omega t}$ is perfect nonsense because that is not a number at all, that is just a polarity. What we need is $e^{(0+i\omega t)}$ because that perfectly describes a unit vector rotating in time. I noticed this error immediately, but I did not want to show Maxwell up in front of the whole class because he was a pretty good guy and those electrical engineers really worship him, which is wrong, he was only human and he simply repeated a silly mistake.

Where we wish to describe rotating clocks and understand time, we absolutely need the exponential numerical domain. The complete exponential number we need in this case is $(0 + i\omega t)$, exponential numbers must always have the form $(a + ib)$. That number, $(0 + i\omega t)$, describes the polarity of our rotating clock's arrow head as a unit vector rotating in time. Where we need to translate the exponential number $(0 + i\omega t)$ into a kindergarten finger counting number, we need to take the natural anti-logarithm of $(0 + i\omega t)$, which is found from evaluating $e^{(0+i\omega t)}$ and that evaluates to simply $1.i\omega t$. If you forgot what ω means, that is just a constant, the phase velocity in radians per second.

The polarity of all the numbers in the universe must be derived from this underlying exponential reality. The operator i is just the universal polarity rotator, it means simply "a polarity rotation of", so it must always be followed by the relevant rotational angle in quadrant units. However, our strange mathematical cult does not know that so they write i on its own as if it was a number, they miss off the denominator of one quadrant and the numerator of one. So they write i on its own as if they knew what that meant and as if i was a number in its own right, when they should be specifying this as $1.i1$. We can read $1.i1$ as one times a polarity rotation of one quadrant. The symbol i always and everywhere means "a polarity rotation of" and the rotational amount that must always follow the i must be quoted in quadrant units, never in radian units. Where i appears in an expression without any following denominator of one quadrant we must just add that one (quadrant of polarity rotation) in in our minds and forgive the grammatical clumsiness of the expression.

All this Confusion was Kicked Off by Leonhard Euler, about 300 Years Ago

About 300 years ago, Leonhard Euler left us with a piece of utter nonsense and instead of spotting his error and correcting this, these so-called mathematicians all just nodded and merely pretended to understand a relationship that was actually utter nonsense. I am writing here of Euler's identity which states that $e^{i\pi} = -1$. This is the most fantastic piece of utter nonsense that was ever written down by anybody in the whole sorry history of all of our absurd human mathematical hubris. We can easily see that $i\pi$ is not a number because it has no magnitude component.

The symbol i means "a polarity rotation of", so $i\pi$ on its own means a polarity rotation of π radians, but with no magnitude. Correcting this nonsense is so easy that it took me nearly 60 years to get around to even bothering to mention this at all. The flat or finger counting magnitude of -1 is 1 and to move that into the natural exponential form it becomes zero. Therefore; $e^{(0+i\pi)} = -1$.

Proof; $e^{(0+i\pi)} = e^0$ times $e^{i\pi}$. The evaluation of this is $e^0 = 1$ times $e^{i\pi}$ which is just $i\pi$. The reason that $e^{i\pi}$ is the same as $i\pi$ is that the rotational polarity is independent of the flat or the exponential (logarithmic) form in the magnitude. So $e^{(0+i\pi)}$ means the same as just $1.i\pi$, which means one times a polarity rotation of π radians. There is no such real number of say apples as minus one because it is impossible to take away a real apple from a pile containing no apples at all. That number needs a new name, we can call it inverse one because it is the rotational inverse of one. The very definition of inverse one is $1.i\pi$ in radian units or $1.i2$ in quadrant units.

In the crazy timeless abstract world of these dreamers, they can make huge mistakes and seem to get away with it, but serious scientific men and women, who must work with physics equations in a real time environment, should not follow such a blind, dogmatic and haughty cult as these worshippers of such non-existent "nonsense-numbers". These so-called mathematicians live on a rotating planet that is itself rotating about the Sun, that is itself rotating about the galaxy and yet it never occurred to them that numerical polarity could be associated with rotation, they just stuck blindly to their absurd idea of a flat orthogonal complex number plane. That flat complex number plane of theirs has its uses of course, but only if one is happy to remain inside their absurdly needless numerical polarity mind-fog.

Conclusion

Within [my recent paper explaining the logical error that Einstein](#) embedded within his Special Theory of Relativity, I explain that the relationship between space and historic depth is i , or more strictly speaking that the space-time equivalence ratio (c) is $1.i0/1.i1$. Please note that time progression and historic depth progression are identical terms. We can see from my linear and rotating clock example mentioned above that space is time measured by a linear clock and that time is historic depth measured by a rotating clock. Where one wants to understand gravity, space-time and the nature of matter, one needs all of my independent mathematical and natural philosophical research work of the last twenty years, but the mathematical solution for the entire quantum entangled Universe is in fact so simple and so compelling that nearly all of that work collapses into the redundancy of self-obvious neuro-linguistic tautologies [1].

For contacting the author with comments or questions about this model of higher arithmetic, one can use the contacts feature at

<https://www.gnqr.co.uk>

gnqr stands for Gauss Newton quantum-relativity

Reference

1. I refer to the second letter of Carl Friedrich Gauss to the Royal Society, item C, paragraph 24. This letter is in Latin, it is hand written and is only available to highly qualified forensic archival researchers. The only place to read this in an English translation is inside William Ewald's book (1999, paperback). A source book in the foundations of mathematics. From Kant to Hilbert, volume 1, page 313 of the paperback version, last paragraph #24 of Ewald's chapter seven on Gauss. ISBN 0 19 850535 3. This not available with OUP on line at <https://academic.oup.com/book/54445> because OUP only remember vol 2 and no longer link, or never linked vol 1. But volume one [is still available here](#). This one paragraph reference (#24) is the point where my work picked up from and where Gauss left off at, 195 years ago. Gauss never left his local area in modern Germany. Gauss was a fellow of the Royal Society because of political representations made by his earnest students such as Michael Faraday, who was a fellow there. Because of Michael Faraday, the Royal Society could not refuse to publish Gauss' work, but it was not welcome and would not be published anywhere else. As the book is very rare and is £155 from Amazon, I will repeat Ewald's

translation work on the paragraph #24 fragment here. Gauss hand wrote this in Latin in 1831 and posted this to the Royal Society in London. [24] We have believed that we were doing the friends of mathematics a favour by this account of the principal parts of a new theory of the so-called imaginary quantities. If one formerly contemplated this subject from a false point of view and therefore found a mystery darkness, this is in large part attributable to clumsy terminology. Had one not called +1, -1, square root(-1) positive, negative, or imaginary (or even impossible) units, but instead say direct, inverse and lateral units, then there could scarcely have been talk of such darkness. The author has reserved the right to treat this subject, which in the present treatise is only occasionality touched upon, at greater length later. Then too the question will be answered, why things that form a manifold of more than two dimensions cannot supply yet another type of number that is admissible in higher arithmetic.

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