

On the World without time

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Einstein continues to confuse and causes people to generate lots of literature dealing with his changes, the issue addressed with here is the unreality-ness of time in Einstein's way of dealing with it.

There are lots of books on Einstein; Palle Yourgrau writes one called “A World Without Time: The Forgotten Legacy of Gödel and Einstein” [1]

John Satchel reviewed the book [2] and says its title suggests three main themes:

“1) “A World Without Time”: Gödel’s argument, based on his interpretation of the theories of relativity (both special and general), for the “unreality” of time. At a generous estimate, no more than forty of the book’s 180-odd pages are devoted to this theme (essentially the last part of Chapter 6, and Chapter 7).”

Its an interesting idea this “unreality” of time. Einstein made change to what we meant by time with his twin paradox, time dilation et al., and this change to meaning of time leads to an unreality-ness about this new meaning of time in the Einsteinian context.

Einstein made numerous changes, hence giving us numerous problems, hence why there is so much written about Einstein.

Satchel: “2) “Gödel and Einstein”: An attempt to draw parallels between the lives and views of its two protagonists. An account of Gödel’s life in Vienna (Chapters 3–5) includes a lengthy excursus into his seminal contributions to logic (Chapter 4). The account of the relationship between the two after Gödel’s permanent move to the Institute for Advanced Study in 1940 (Chapters 1, 6, and 8; the last also discusses Gödel’s final years) includes brief glimpses of Einstein’s pre-Princeton years.”

That is general biographic information about Einstein and Godel, with Godel pondering about Einstein's theories. Ideally doing physics should be exempt from knowing biographic information, but in the case of Einstein and those thinking about

Einstein's theories – knowing the thinkers background can give insights into why they thought what they did.

Satchel: “(3) “The Forgotten Legacy”: Yourgrau’s polemic against what he sees as the neglect by the analytically- oriented American philosophical establishment of Gödel’s significant contributions to metaphysics (the last part of Chapter 8 and Chapter 9). Insofar as Einstein is presumed to share Gödel’s “German Bias for Metaphysics” (the title of Chapter 2), he is also portrayed as a victim of this “Conspiracy of Silence” (the title of Chapter 1).”

I like the comment here about “conspiracy”. John Stachel is professor of physics at Boston University, and founding editor of The Collected Papers of Albert Einstein. Such people as these as part of the mainstream like to mock people outside the mainstream when they refer to “conspiracy”, but when they use the term they expect to be treated with respect instead of how outsiders are treated; its double-standards. Anyway, there is “conspiracy” - “conspiracy of silence” - such people as Einstein and Gödel had their thoughts about physics, and the existing mainstream tends to want to ignore such a perspective - “conspiracy of silence” in other words. And when we look at what such people were thinking it is as Satchel notes “metaphysics”, and there is a fairly large movement in the mainstream trying to get rid of metaphysics from science.

So now onto the book:

The Meaning of Relativity according to Palle Yourgrau (in his book “A World Without Time”) [1] , skipping the comments on Michelson-Morley experiment, and getting to:

Palle: “Into this breach stepped the Dutch physicist Hendrik Antoon Lorentz, Einstein’s father figure and another of his heroes. It was Lorentz who, having already perfected the form of Maxwell’s equations, appeared now to save the day by supplying the exact equations, the “Lorentz transformations,” that made measurements in one reference, or inertial, frame equivalent to those obtained in another, including the “absolute” rest of the postulated ether. In one stroke, Lorentz had succeeded in crystallizing and rendering harmless the mismatch between Newton’s account and Maxwell’s.”

Although the terms “ether”, “rest” need to be discussed in a great deal more detail, what Palle is seems to be claiming with these fancy words that - Lorentz unified Newtonian physics with Maxwell theory.

Palle: “For most serious thinkers, including Lorentz himself, these “transformations” signalled at most our inability to measure the “real” velocity of light or our real velocity through Newton’s postulated ether of “absolute space”. It was assumed that there were simply unavoidable distortions in the measurement of light.”

So with Lorentz achieving all this along came Einstein, and Einstein from my perspective threw everything into confusion.

Palle: “For the young Einstein, in contrast, the mismatch demonstrated that space and time themselves – what Kant had called the fundamental “forms of intuition” – needed to be re-created or redefined.”

i.e. Einstein had same maths as Lorentz but wants to interpret that maths differently, by such philosophy as Kant.

Palle: “Henceforth, with the Einstein revolution, time itself, not just its measurement with clocks, would be understood as something essentially relative to the motion of the observer and his or her frame of reference, as something in its essence related to the speed of light. Instead of trying to explain our inability to detect the “true” speed of light, then, Einstein incorporated that speed into the very definition of time and motion. Lorentzian engineering had been replaced by Einsteinian metaphysics.”

What that means is the way Lorentz thought of the maths and been reinterpreted to mean something else by Einstein. In Lorentz’s version - the maths was part of Newtonian physics and combined it with Maxwell theory. While Einstein had abandoned large parts of Newtonian physics with his reinterpretation. What justification is there for discarding Newtonian physics when it had been joined with Maxwell electromagnetic theory? Answer: in my view – there was no justification whatsoever.

Palle: “In a move that contained as much philosophy as it did science, Einstein had succeeded in combining the letter of positivism – rejecting any properties of space and time that could not be determined through measurement with rods and clocks – with the spirit of German metaphysics, determining what kind of things space and time are.”

i.e. the rejection of Newtonian physics was based upon philosophic grounds.

There was no physics of experiments involved for what Einstein had done. Lorentz had combined the maths with Newtonian physics and Einstein on philosophical grounds had re-interpreted.

Palle: “Though generations of physicists, not least Heisenberg, would conclude that Einstein had become the self-appointed standard-bearer of positivism, the truth lay elsewhere. He was, if anything, an opportunist.”

What this refers to is that Heisenberg had been influenced by Einstein's philosophising and hence that philosophising was behind quantum mechanics.

i.e. through Heisenberg – quantum physics was also founded upon positivism.

But of course as is well known Einstein then rebelled against quantum mechanics- Einstein had a philosophical change of mind in other words.

Einstein was merely exploiting, for his own philosophical purposes, certain elements of positivism that in the particular case of special relativity were justified.

Back to special relativity: As far as I am concerned Einstein took the maths of Lorentz and reinterpreted it through a different philosophy to form Special relativity in 1905, but then later Einstein changes his mind anyway.

Palle: “Godel too would come to exploit elements of the positivist methodology – in his case, the formalism of the Hilbert school of mathematics – to serve his own anti-positivist, Platonist ends.”

So we have Einstein's philosophising now influencing Godel.

What we really have is two philosophies in conflict – positivism versus Platonist, and which philosophy should be used to do physics? Answer is: of course – positivism is wrong and Platonism is correct. Persisting with this wrong philosophy behind science/physics has further consequence in that maths has to be taught to be incorrectly understood.

The points I want to raise-

- Newtonian physics was combined with Maxwell theory until--
- Einstein decided to interpret things from a different philosophy
- there was no real justification for changing from Newtonian to Einsteinian physics; all it was – was a philosophical change in viewpoint
- Philosophies in conflict are – Positivism versus Platonism
- Change was to a Positivism-type philosophy in 1905
- Correct philosophy is Platonism
- Result of Positivism is to misunderstand maths
- Math needs to be understood in the correct way, which is by Platonism
- Whole education system of teaching physicists has therefore been corrupted
- Correct philosophy gives us unified field theory a la Boscovich

Now will look at one example of how Einstein has confused things with his effect on one blogger Chris Murphy.

He starts: “Ever since my high school physics class, special relativity has always bugged me. I thought I understood the concept, and I was able to work through the thought experiments presented by my teacher, but I always had one in my head that bugged me. Recently, I decided to work out the problem on paper, and resolved my issue! Yay! I will try to explain my findings here. My explanation may be completely off-base, but the concepts and results I talk about are definitely correct (take your disagreements up with Einstein!).”

Good comment “bugged” - the teaching of Einstein's relativity is a mess, so a student should be “bugged.” However, you note the blind obedience to Einstein, the blogger works through what bugs him and even if that “explanation may be completely off-base”, still wants to believe Einstein. Ideally a rational person should examine an idea and decide whether it is nonsense or not, but in the case of Einstein: Einstein presents

a set of ideas, and because there is a mystique about Einstein there is then suspension of rational thought and blind faith in Einstein by his believers.

Blogger: “In the text below, I will try to introduce the problem, but that is going to require some background. I will attempt to give it; if it isn't coherent, you'll have to read a real book about it. I promise I'll do my best, but even really clever physicists can't really explain this stuff in a short post, so my task seems a little daunting.”

Note the way that he dismisses problems by referring you to look at other sources after an admission that things might not be “coherent” - that is standard behaviour of those with blind faith in Einstein. Then he says “even really clever physicists can't really explain this stuff in a short post” - that is because Einstein made a mess, and even in long posts – clever people would have difficulty. But for those with blind faith in Einstein- the possibility of considering Einstein made a mess is not an option they will consider, and instead they will struggle on with the mess, and create their excuses.

Blogger: “To understand special relativity, you have to understand that the speed of light (conveniently denominated c) is constant.”

That is fairly well summarised, but that issue of light-speed c (in vacuum) as a constant leads to the mess.

He continues: “The speed of light is the speed of light, no matter the reference frame. That's a little peculiar, because in traditional physics, the reference frame is quite important.”

Note the words “little peculiar”, he uses those words instead of “nonsense” ; calling it “nonsense” would be more appropriate, but as a true believer that is not a possibility to consider, and instead he has to think about changing things from classical pre-Einstein physics.

Blogger now gets onto his thought experiment: “ If I throw my luggage down from my moving train to my sister on the platform, she perceives the velocity of the luggage to be the speed of my throw plus the speed of the train.”

That would be how Newtonian physics would treat things. Now he has to think about Einstein and light and change things-

Blogger: “Is this true for light? In other words, if I kindly decide to shine a flash-light at my sister instead, does she measure the photons moving at c plus the speed of the train? Before Einstein, physicists believed that she would. In truth, she does not.”

He is okay until he gets to the sentence: “In truth, she does not.”

In Newtonian physics what happens for velocities in the luggage scenario also happens for velocities in the light scenario. He has that bit correct. But now he thinks Einstein changed that.- And that mistake is what is usually taught to students in relativity classes, so like many others he has believed the lie.

Because of this enormous mess that has been made, I am forced to talk of things in the way that in the context of Newtonian physics – velocities in the light scenario would behave in same way as velocities in luggage scenario. But now in the way Einstein wants to deal with things – he changes how maths of Newtonian physics deals with time, length et al, so that he can keep light speed c (in vacuum) as a constant-- I.e. changed the maths treatment.

Blogger continues: “If you find this intuitively wrong and creepy, then at least you've understood what I'm saying.”

Its “creepy” and “intuitively wrong” because it conflicts with how Newtonian physics is dealing with things. Ideally a rational person then should have rejected it as nonsense, but unfortunately that did not happen and changes to the existing maths had to be made to accommodate Einstein's way of doing things.

Blogger: “ To make sure you understand the enormity of the situation, imagine that the train is travelling at $.99c$. I can measure the photons coming out of my flash-light at c . My sister measures the photons coming at her at c . What the heck is going on here?”

That's just the maths being changed to treat things that way; Einstein's physics changes the maths of how velocities are to be treated.

Blogger: ”It turns out that this result can be explained via time and length dilation.”

Yes that's it – what is meant by time and length in the context of Newtonian physics has to be changed to mean something else so as to maintain light-speed c (in vacuum) as constant. Rather than allow light-speed (in vacuum) to change as it would do in Newtonian physics, then in Einstein's way of doing physics – the maths has to be manipulated into a form where what is mean by time etc. can get interpreted as changed, and that leads to the “unreality” of time in the way Einstein treats it, as noted earlier.

So its a bit of weird manipulation of the maths to treat things differently from how Newtonian physics deals with things. But the blogger does not notice that and continues with believing the lie, and eventually ends up saying-

Blogger: “This is merely one of the many strange implications of special relativity. I hope it made a bit of sense.”

So the blogger like many others has been totally fooled by Einstein's changes.

References

[1] A World Without Time: The Forgotten Legacy of Gödel and Einstein, Palle Yourgrau, Hardcover, Basic Books, 2004, US\$24.00, 224 pages, ISBN-13: 9780465092932 Paperback, Perseus Publishing, 2006 US\$15.00, 224 pages ISBN-13: 9780465092949

[2] Book Review A World Without Time: The Forgotten Legacy of Gödel and Einstein Reviewed by John Stachel <http://www.ams.org/notices/200707/tx070700861p.pdf>

[3] Special Relativity Chris Murphy, April 27, 2010
<http://cmurphycode.blogspot.com/2010/04/special-relativity.html>

Note: for the maths manipulated from how Newtonian physics deals with time to how special relativity does, see my other articles such as “Introduction to Andertonian relativity.”

c.RJAndertonDec2012