

Biocentrism by Robert Lanza with Bob Berman. Benbella Books, 2009. 212 pp. \$16.47 (hardcover). ISBN 978-1-933771-69-4.

Let me be so very unkind as to start off this review by laughing out loud at Robert Lanza and Bob Berman: their Appendix 1, entitled “The Lorentz Transformation,” features a single equation (which is reproduced below, with the correct version for comparison):

$$\Delta T = t\sqrt{1 - v^2 / c^2} \quad (\text{Biocentrism version}) \qquad \Delta T = \Delta t \sqrt{1 - v^2 / c^2} \quad (\text{corrected version})$$

Like me, you at first (perhaps) think that their problem is merely that of having chosen a bad typesetter: but, no—they go on to say “t should be multiplied by the meat-and-potatoes of the Lorentz transformation, which is the square root of 1, from which we subtract...” No, neither Robert nor Bob are at home with this simple element of physics. They bollix it! (In their acknowledgements, they thank Ben Mathiesen for his help with the material in the appendix, so I must mention poor Ben’s name as well.)

Let’s go on now to Appendix 2, “Einstein’s Relativity and Biocentrism.” Here the news is much better! I did not go through the details of their exposition, but their theme is one that is dear to my heart: rejection of Einstein’s “two postulates,” followed by the substitution of Minkowski space. Score one for Robert and Bob! In fact, score a *big* one! From the quagmire of physics, they have, this time, pulled out a brass ring!

Who is to blame for the farce of Appendix 1? Not Robert or Bob (or even Ben for that matter). *I* am the person to blame. I teach freshman physics, and I teach it just as badly as the next professor. Our freshman text (regardless of which one we choose) presents the two postulates. These are so unintuitive that anyone learning relativity that way could never be expected to recognize a wrong version of the Lorentz transformation of time intervals. No, Robert and Bob are to be *commended* for pursuing their underlying thesis *despite* having been taught physics so wretchedly badly by me and my physics friends.

And what *is* their underlying thesis? They present it as a long list of Principles of Biocentrism that have no individual value, in my opinion—but the heart of it, collectively, is correct. On page 15 they say “the animal observer creates reality and not the other way around.” That is the essence of the entire book, and that is factually correct. It is an elementary conclusion from quantum mechanics.

So what Lanza says in this book is *not* new. Then why does Robert have to say it at all? It is because we, the physicists, do NOT say it—or if we *do* say it, we only whisper it, and in private—furiously blushing as we mouth the words. True, yes; politically correct, hell no!

Bless Robert Lanza for creating this book, and bless Bob Berman for *not dissuading* friend Robert from going ahead with it.

Not that I think Robert Lanza *could* be dissuaded—this dude doesn't dissuade! Lanza's remarkable personal story is woven into the book, and is uplifting. You should enjoy this book, and it should help you on your personal journey to understanding.

Well, that is my review. What shall I do now? Let me continue with comments on items in the book that seemed to me, as I read, worthy of attention.

Page 4, bottom: “particles seem to respond to a conscious observer. Because that can't be right, ...” Well, it *is* right, but, there *are no* particles. Observations (which we often misinterpret as “particles”) most certainly *do* respond to a conscious observer.

Page 8, “ ‘God did it’. Now, this book is not going to discuss spiritual beliefs nor take sides on whether this line of thinking is wrong or right.” Well, this line of thinking *is* right, or else you are stuck with solipsism (which I for one reject).

Page 16, bottom: “photons of light from the overhead bulb bounce off the various objects and then interact with your brain ... This is undeniable—it's basic seventh grade science.” But it is in fact dead wrong. There *are no* photons. Quantum mechanics deals with nothing but observations; photons are a useful engineering concept and nothing more.

Page 36: (we each have in our brain) “as many neurons as there are stars in the galaxy.” Your own head contains what is probably the most complex thing in the entire universe. (However, it does annoy me that with all those neurons I am not better at math.)

Various places: the authors are on their toes in suggesting unreality for space and time. String theorists (the last I looked) talk of space and time being perhaps emergent properties, rather than fundamental ingredients. Lanza and Berman's discussions of special relativity (despite Appendix 1) are very good, and expanded my own appreciation. And while I am at it: their presentation of the “mysteries” of quantum mechanics is capable and familiar, but is totally unnecessary, as quantum mechanics is almost trivial in its origin from the assumption of space and time plus a few simple symmetries. No mysteries there!

Page 58: “obviously there is no possible rebuttal to a suggestion that an unknown variable is producing some result.” Oh *yes* there is! “Hidden variables” has been refuted decisively by experiment.

Page 88, top: mention of Fred Hoyle and carbon (and mention elsewhere of the “fine tuning” of the universe to allow life.) The Hoyle example is refuted decisively by David Gross, who points out that quantum chromodynamics is a fixed structure, so the nuclear resonance that is required to make carbon is there, Fred Hoyle or no Fred Hoyle. Once you understand that the universe is purely mental, you are hardly surprised at the fine tuning. But, if you *don't* understand that the universe is purely mental, your awe at the fine tuning is foolish: anyone can catch you out, simply by postulating a multiverse. Don't waste your time on this silly game!

Page 92, the authors make this interesting remark: “by reminding us of its great successes at figuring out interim processes and the mechanics of things, and fashioning marvelous new

devices out of raw materials, science gets away with patently ridiculous “explanations” for the nature of the cosmos as a whole.” So very true! And yet the notion that the universe exists only in our minds *also* seems patently ridiculous. I don’t mind the “patent ridiculousness” of explanations, for that reason: what I care about is truth or falsity, as judged by experiment. And the answer, by experiment, is, that the universe exists only in our minds.

Page 154, second line from top, the authors draw attention to the much-neglected *hula* theory.

Page 163 bottom, “A Big Bang means the universe was born, and that therefore it must someday die...” Not so—current cosmology detects a birth, but clearly indicates endless accelerating expansion.’

Page 167, the authors appeal to science fiction (and to films—but they don’t mention “Groundhog Day!”) as laying a groundwork for acceptance of their thesis. With the authors, I hope for some kind of Malcolm Gladwell “tipping point” for the excellent ideas that they advance. Their book, I hope, will be a big step in the right direction. Acceptance would be of immense value to society, through placing humankind once again at the center of the cosmos.

Page 170, the authors kindly knock Daniel Dennett, for which I thank them. It was while reading a review of a Dennett book “explaining” consciousness that I got so disgusted that I sent my essay, “The mental Universe,” to *Nature* (it appeared on 2005 July 7) for publication.

Page 174 bottom, I greatly enjoyed reading “.. must feel like the nature of the sun did to the ancient Greeks. Every day a ball of fire crosses the sky. How would one *begin* to ascertain its composition and nature?” Until I’d read those simple words, that obvious thought had never crossed my mind. It is both glorious and humbling: we have accomplished so astoundingly much, and yet we still know nothing of the ultimate reason for our existence.

On page 182, the authors briefly discuss dreams. This is useful: the best I can come up with is that we are dreams in the mind of God.

Page 191-192, the authors end their book, by speculating, feebly, on life after death, pointing to conservation of energy. Well, energy doesn’t exist—it is simply a conserved quantity (due to time-translation symmetry). No, your hope for life after death does not come from physics. Your hope comes from the astounding fact that that you exist. NOTHING could be more improbable than THAT, and yet ... you DO exist! You are a true miracle that has actually happened, and being granted one more (and much smaller) miracle is not too much to ask for, in my opinion.

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