

The world in one space-dimension

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At first glance it seems to be quite simple to measure time and space. You have to take clocks or a unit cube and to look how many times this cube gets into the considered space you want to determine or to see how many times a periodic process (i.e an hour) enters into the process you want to measure. But before you are measuring you have to ask what does this mean: a process contains another process or a body contains another body.

I am not looking for an axiomatic theory of it, in which this question is not posed. Perhaps space is more simple than time. So let us look for an analysis of comparisons of bodies. And to push down the complexity let's suppose that the space has just one dimension. Well what does it mean that a line is a part of another line. And I do not ask for the pure mathematics but for the physical reality of it.

I guess that continua in the sense that you can divide them infinitely into parts does not exist, because the theory that there are an infinity of natural numbers is a contradiction or at least a wrong thinking. So you have to suppose that there are undividable, atomic lines. When you want to compare those lines, you have to submit, that these are made by matter to have an extension. And this is the point. Is it possible that these one-dimensional lines are solids? I think that they aren't. Why?

Because I guess that matter (fermions) are enclaves of bosons. I remember the experience that two jets of high energy photons created at the collision an electron. Why? Because this high energy creates two tubes of curved space which defines at the collision a sphere in which the photons are captured. So it is qualitatively easy to explain the formula $E = mc^2$ and the quantum field theory of electro-magnetism finds as well a simple explanation as well as the dark matter. But this is not the subject of this essay.

I mean that in one dimension there is just one possibility of photons to move back and forth. But what should be the cause of it? There exists not yet mirrors or similar object, because they are just in construction. So I find no possibility that there is any matter. Doesn't mind. Because this is full of interesting phenomena.

First there is no way to compare lines, so there is no space measurement. Then there will be no more the time arrow. Because there is no possibility to save the second law of thermodynamics without matter. So there you can't distinguish objectively the future from the past. Submit that time is still existing, even if there is neither a possible measurement. But mind can be there. Because mind is basically energy, photons. And mind is not necessarily matter-based, like many people (positivists) are believing.

An observer would (a conglomeration of photons) detect only photons, particles. Waves could only be longitudinal waves and so the observer could not distinguish waves from particles. The wave-particle dualism does not exist in this world. With the second or third dimension this symmetry would break (perhaps, when it really exists there).

Is there any geometry, is there any arithmetics?

What is geometry without measurement? It is at least incidence geometry. But an observer does only see events, lines or „ extended points“ one after the other in time. And incidence

is not observable. So there is no real geometry. Geometry could only be a sort of physics of moving, changing lines in time.

I believe that that movement or changing so reveals to be the basic entity of space and time.

Each classical arithmetics does suppose the existence of solids. But there are no ones. Hence no arithmetics of this sort.

Whats about culture in this world? Lets look upon music, art and literature? They would be all the same.

Art will just be a combination of lines, of coloured ones. But for an observer in this one-dimensional world there will be only a temporal suite of coloured photons, with different frequencies and amplitudes. So its it like music. No detectable difference. And literature could not be distinguished no more, like a linear sequence of photon „sounds“. In the next dimension there may be the first break of symmetry again.

Actually painters often do look for music examples and sometimes their language uses musical terms. Perhaps it is more than a metaphore? And there are musicians who are setting paintings in music, like Mussorgski or french composers like Debussy, who imitated the paintings of Monet.

And when you imagine further, that there would be a higher world of two dimensions in which the first one-dimensional considered world is a part. How would they communicate? The two-dimensional would have some problems to understand the one-dims and vice versa.

I think it is very usefull to think more and very precisely about all the chartacteristics of the one-dim world to understand our world and to see how our dualistic concepts are generated out of complex unique entities.