

Re: Epistemology 201: The Science of Science

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From: Lester Zick (*lesterDELzick_at_worldnet.att.net*)

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On Tue, 1 Mar 2005 17:09:43 -0500, Tony Orlow (aeo6)
<aeo6@cornell.edu> in comp.ai.philosophy wrote:

>Lester Zick said:

>> On 1 Mar 2005 10:18:09 -0800, stevendaryl3016@yahoo.com (Daryl
>> McCullough) in comp.ai.philosophy wrote:

>>

>> >Lester Zick says...

><snip>

>> *The three spatial dimensions aren't all the same either. But if you
>> maintain that hyperspace dimensions exist and yet are different
>> from the three spatial dimensions, what is the mechanical difference
>> and interconnection between them apart from numerical exponent
>> progression?*

>*I would say that the direction of expansion of the universe is a fourth
>dimension at any given point, because it is in a direction perpendicular
>to our space at that point. In a way, time is the manifestation of this
>expansion into this fourth spatial direction.*

>

>*I am curious – what do you see as distinguishing characteristics between
>our three spatial dimensions, and do you think they are in a particular
>orientation? I am beginning to suspect that is correct, but would like
>to hear your thoughts.*

Well, Tony, the three spatial dimensions have very well defined and specific interrelations: lines form the sides of squares and squares the faces of cubes. In other words 1D forms the side of 2D and 2D the face of 3D. So when we say something is one, two, or three dimensional we can interrelate such observations in all three dimensions. There is no way to do this in higher dimensions. We have no way to say what 3D is to 4D and there is good reason to think it isn't anything. Thus we can dimension objects in one, two, and three interrelatedly but there is no higher dimensionality possible because we cannot dimension 3D to 4D.

>> >>*Haven't you ever wondered why our imagining capabilities are 3D?*

>> >

>> >*It's obviously because the macroscopic world of our experience*

>> >is 3D, and our minds evolved to work in this world. That doesn't
>> >imply anything about what is true of the universe in extreme
>> >situations beyond our experience, the world of the very small
>> >and the world of the very large.

>I agree.

>>

>> This is certainly the conventional approach to empiricism but
>> empiricism doesn't define truth. It only defines falsification through
>> contradiction. So we don't understand what truth is possible in
>> universal terms of the very large and very small. It still doesn't
>> mean hyperspace dimensionality is possible anymore than it's possible
>> to square the circle. What we know is that our minds are 3D. The rest
>> is speculative because we don't even know if it's physically possible.

>>

>> >>Well, Tony, there are two answers. The first relates to whether 4D
>> >>space actually solves problems like the omnidirectional cosmic red
>> >>shift. The fact is that it doesn't unless we're at the center of the
>> >>universe because spatial and temporal metric eccentricity of any
>> >>dimensionality implies directionality and not omnidirectionality.

>> >

>> >That is simply incorrect. There is no mathematical difficulty with
>> >describing an expanding 3D geometry with no center of expansion. It's
>> >just that such a geometry cannot be a *Euclidean* geometry.

>Daryl – why can't the expansion be in 3D Euclidean Space? The only
>problem with that is if it is a finite space, then some points will be
>near the edge, causing an asymmetry. An expanding infinite 3D euclidean
>space should work, even though I don't think that is the shape of space.

>

>>

>> Okay, now we're getting down to brass tacks, Daryl, because my just
>> modified claim is that spatial and temporal metrics have to coincide
>> or be radially opposed to produce omnidirectionality. Obviously you
>> disagree so I'd like to understand why you disagree. You say that no
>> center of expansion is needed. I'm wondering whether spatial and
>> temporal metrics are needed for that geometry and how you define the
>> origin of time at the point of expansion without spatial and temporal
>> metrics.

>>

>> If you just contend the center of expansion occurs in hyperspatial
>> dimensions the problem is just regressed to that dimensionality and
>> you have no evidence for that hyperspatial dimensionality except the
>> claim that it can and does exist. Otherwise omnidirectionality cannot
>> exist except for coincidentally or radially opposed spatial and
>> temporal metrics. However even if this is the case, you still have to
>> assume coincidental spatial and temporal metrics in the hyperspace
>> dimension and that in itself assumes a privileged position for BB at
>> the center of that hyperspatial dimension.

>No, it really doesn't. Nothing in universal uniformity of perspective
>implies any kind of center. The way I see it, it contradicts the idea of
>the center of the universe.

Not a center, Tony, just a coincidence or radial opposition of spatial and temporal metrics. You can't get omnidirectionality without it.

>> >> *The second answer is more subtle and depends on what I term the
>> >> commensuration of space in dimensional terms. In other words we can
>> >> commensurate lines, planes, and solids to one another mathematically
>> >> but not higher or lower dimensioned figures to lines, planes, or
>> >> solids. This is where dimensionality comes from and what it means.*

>> >

>> > *Are you trying to say that it is *mathematically* impossible for there
>> > to be more than 3 dimensions? That's incorrect. Mathematicians have
>> > studied higher-dimensional geometry for a couple of hundred years.
>> > There is no mathematical difficulty.*

>> >

>> > *I'm saying that it's possible to add unlimited exponents to equations.
>> > I'm also saying that there is a restricted set of mathematical
>> > relations between one, two, and three dimensions not applicable to
>> > higher dimensionalities and that this restriction is what limits
>> > spatial dimensionality to one, two, and three.*

> *Can you explain what relations you are referring to that don't apply to
> higher dimensions? I just don't see that.*

>> *Mathematicians are*

>> *certainly welcome to study whatever they want. That doesn't mean they
>> > can maintain any form of mechanical interconnection between hyperspace
>> > and the basic three dimensions.*

>> >

>> > *But your comments are sensible and I certainly appreciate them.*

>> >

>> > *Regards – Lester*

>> >

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>--

> *Smiles,*

>

> *Tony*

Regards – Lester