Could Our Universe Be A Virtual Reality Processed By Other Intelligence?

"If I'm in a virtual reality, the graphics are great, but the plot sucks."
- Student of Prof. Brian Whitworth

Virtual reality universe illustration by
Prof. Seth Lloyd, Ph.D., Mechanical Engineering, MIT.

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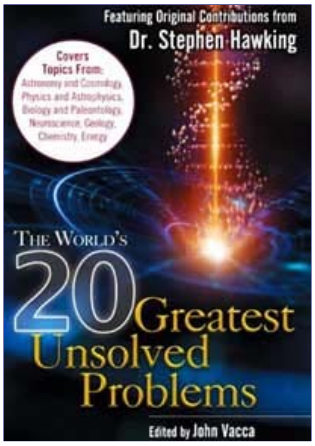
January 25, 2008 Auckland, New Zealand - A professor in Auckland, New Zealand, published a paper in December that seriously raises the question: could we be in a virtual reality world and universe where the "computer" behind-the-scenes has a processing speed of 186,282.397 miles per second - the maximum speed of light? The professor is Brian Whitworth, Ph.D., in Information Systems and now Senior Lecturer at the Institute for Information and Mathematical Sciences at Massey University in Auckland.

In his paper, he quotes from a 2005 book entitled, *The World's 20 Greatest Unsolved Problems* edited by John Vacca: "Quantum physicists who work with quantum theory every day don't really know quite what to make of it. They fill blackboards with quantum calculations and acknowledge that it is probably the most powerful, accurate and predictive scientific theory ever developed, but the very suggestion that it might be literally true as a description of Nature is still greeted with cynicism, incomprehension and even anger."



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Professor Whitworth's goal is to provide another model in which cosmologists might look at our universe that is not hamstrung by the paradoxes in trying to make sense of a physically objective universe in which all the underlying processing creating the universe is

defined by quantum mechanics in which not even an atom can be directly measured in time and space because quantum mechanics says it is in all places at once.

Professor Whitworth has worked for decades in mathematics and information systems and finds many analogies in the computer world to how quantum mechanics says this universe actually works.

I talked with him this week and began by asking him what the reaction has been from his academic colleagues.

Interview:

Brian Whitworth, Ph.D., Information Systems,
Massey University, Auckland, New Zealand

Brian Whitworth, Ph.D., Information Systems, Senior Lecturer, Institute for Information and Mathematical Sciences, Massey University, Auckland, New Zealand: "The most common comment you would expect is, 'You can't prove it.' But if you think about it, let's suppose that everybody thought the world was a virtual reality. They were brought up from childhood to believe this. And you one day had the idea that it was an objective reality – that it was not created by computer processing, that it was just actually there in existence. And I said to you, 'OK, why don't you prove it?' I think you would have a bit of trouble proving it.

You could say, 'Well, I know the world is objective because I experience it.'

People would reply, 'But you only experience your input.'

And someone might say, 'Well, I have lots of mathematical laws that can predict things.'

And the other says, 'Well, of course you do because it's all based on mathematics.'

Then you say, 'Look, the universe is enormous! It's huge!! How can it possibly be a virtual reality to be so big?'

And the other would say, 'It's only big to you. It's only big to people inside it.'

And you might say, 'But it's been going for billions of years!'

And the other might say, 'Well, that might be just a few seconds of processing. Nobody really knows.'

And so on. You would actually find it quite difficult to prove your case. So, I guess the point is that people assume that objective reality is a proven theory, but it is not. It's an axiom just as unproven as virtual reality theory.

So from a scientific perspective, neither objective reality nor virtual reality is proven. And what is happening is that modern physics with things like time dilation and space contraction, teleportation, multi-existence and so on, seem actually more supportive of a virtual reality universe than an objective reality one.

Mass Increasing Toward Speed of Light

THE STRONGEST PIECE THAT SUPPORTS THE VIRTUAL REALITY FROM YOUR

POINT OF VIEW IS WHAT?

There are a lot. For example, as objects go faster and faster, their mass increases. They get heavier and heavier. As they approach the speed of light, their mass increases to infinity, in theory. So, how come? If the world is physically objective, how can mass just get bigger and bigger and bigger just because a thing goes faster and faster?

HOW DOES VIRTUAL REALITY ANSWER THAT QUESTION?

There is a fixed amount of processing available, let's say, in space. So, if an object is being passed from point to point in space, there's only a certain amount of processing available to each point in space, OK? And if that processing is involved in the calculation of movement, that changes the processing. The smaller and smaller amount that is left makes the mass seem greater and greater.

MEANING THAT THE PROCESSING ABILITY IS BEING USED UP?

Being used up in the movement, and that leaves a smaller and smaller amount left over to do the mass, which then changes the mass. In other words, the processing takes longer to do what it has to do. The idea is that each part of space is like a network. None of these are new ideas and each network is like a mini-processor.

BUT THEY HAVE TO BE COORDINATED BY SOME BIG PROCESSOR WITH A CAPITAL 'P'?

Well, that's one of the questions, isn't it?

Speed of Light Is Virtual Reality Processing Speed

YES, AND THIS IS WHERE YOU GET TO THE SPEED OF LIGHT. CAN YOU EXPLAIN WHY IN A VIRTUAL REALITY UNIVERSE THERE IS A SPEED OF LIGHT?

Yes, it's just like a screen. Your screen has a certain rate with which it refreshes, which depends upon the little points that make up the screen. And each of these points can only flash on and off at a certain rate. So when a pixel moves across the screen, what it means is that it starts off and one point flashes. Then that point turns off and the next point flashes and so on. So, the rate of movement depends on the rate of flashing of the screen. It's the refresh rate and it might be 70 megahertz; it might be 80 megahertz ... But whatever it is, it doesn't matter. That's going to mean that a dot can move across your screen so fast and no faster.

THAT WOULD BE THE SPEED OF LIGHT IN THIS UNIVERSE.

That would be the speed of light that we see, yes.

THAT WOULD EXPLAIN THE QUESTION ABOUT WHY WOULD THERE BE A MAXIMUM SPEED OF LIGHT.

Yes, it explains that question in relationship to space. Each point of space has a fixed amount of processing – a finite amount of allocation. So things that are moving point-to-point in space can only be processed at a certain rate. Then, the speed of light is the refresh rate of space.

Big Bang = "Computer" Turns On

WHAT THEN IS THE BIG BANG?

The Big Bang is when the simulation was started, when the virtual processing began.

WHEN THE COMPUTER IS TURNED ON, RIGHT?

Well, we don't know it's a computer. We only know it's processing and the theory does not postulate any hardware or any machines running in another world or so. It just keeps away from that.

A lot of people have trouble with the idea that Time began at the Big Bang. I know I certainly did – and that space began. How can Time begin? Surely something must have caused Time to begin, but how can you cause anything if there is no Time to have a prior event?

But if you say we're in a virtual reality, or local reality, then the Big Bang is when our Time began and our Space began. That is perfectly reasonable. So, if you go online to Second Life or something, when you switch on your computer and enter the reality. That's when that Time - or perhaps when Second Life was created – that's when its Time began.

> [Editor's Note: "Second Life is an online, 3D virtual world imagined and created entirely by its Residents online." See: **http://secondlife.com/**]

THEN A SINGULARITY, A BIG BANG, WOULD BE THE EQUIVALENT OF TURNING ON THE COMPUTER.

Correct. And that always – because it's digital – it has to start at a particular point and a particular Time and that Time is when your operating system – let's say it's Windows or a Mac – at that specific time, the clock of that session has started up.

NOW, IN THESE ANALOGIES BETWEEN THE COMPUTER WORLD'S VIRTUAL REALITY AND THIS UNIVERSE WE'RE TRYING TO UNDERSTAND, HOW WOULD YOUR AXIOM OR HYPOTHESIS EXPLAIN WHY THIS VIRTUAL UNIVERSE WOULD SEEM NOW TO BE EXPANDING AT AN EXPONENTIAL RATE INTO SOME INFINITY?

That's one of the questions that I'm thinking about! (laughs) So, if anyone has any ideas, including you, let me know! I guess the alternative would be that it starts at a particular size and particular dimension. In that case, you would have to decide how big it was going to be, wouldn't you?

Pixels

Further, if you are playing a game in a virtual world on a computer, are you the pixels?

I'M HEARING YOUR QUESTION, I'M WATCHING THE COMPUTER SCREEN THAT I'M IN FRONT OF THAT HAS PIXELS. BUT FROM MY POINT OF VIEW, I AM OUTSIDE THE SCREEN AND I'M CONTROLLING WHAT'S HAPPENING ON THE COMPUTER SCREEN, AT LEAST IN TERMS OF SELECTING THE PROGRAMS I'M USING AND HOW I'M GOING TO EDIT. THEREFORE, I WOULD SAY THAT 'I,' THE INTELLIGENCE OUTSIDE MY COMPUTER SCREEN, AM NOT APART OF THE PIXELS I AM WATCHING.

Yes, and your avatar (body-mind-spirit representative) is like the little moving arrow that your mouse generates on the screen, correct? That's what acts for you.

YES.

That's your little hand or sort of like your body.

RIGHT.

Now, if the physical world is a virtual reality that does not necessarily imply that our consciousness is in the virtual reality. It could be exactly the same as your playing an avatar in a game. It's conceivable that while everything you see and hear is definitely part of the pixels – or certainly, part of the virtual reality – it's possible that you are not looking from inside the virtual reality.

This relates to very deep questions about whether a mechanical universe could create consciousness. I must admit I haven't worked through all these things yet, but it's certainly something that has concerned a lot of people from Descartes on.

> [Editor's Note: *Wikipedia* - René Descartes (March 31, 1596 - February 11, 1650) was a highly influential French philosopher, mathematician, scientist, and writer. He has been dubbed the Father of Modern Philosophy and the Father of Modern Mathematics. Much of subsequent Western philosophy is a reaction to his writings, which continue to be studied closely, even to the present day. The Cartesian coordinate system that is used in plane geometry and algebra was named for him.
>
> Initially, Descartes arrived at only a single principle: thought exists. Thought cannot be separated from me, therefore, I exist (*Discourse on the Method* and *Principles of Philosophy*). Most famously, this is known as *cogito ergo sum* (Latin: "I think, therefore, I am." Or, *Dubito, ergo cogito, ergo sum* (Latin: "I doubt, therefore I think, therefore I am.") Descartes concluded that he can be certain that he exists because he thinks.]

ALL OF THIS KEEPS LEADING TO THE QUESTION OF CONSCIOUSNESS WITH A CAPITAL 'C,' OR INTELLIGENCE WITH A CAPITAL 'I,' THAT WOULD BE RESPONSIBLE FOR CREATING THE VIRTUAL REALITY UNIVERSE.

You want to step out of this world and see what is going on elsewhere. And that's not really possible. But the second question is whether the interface of pixels is everything there is. That is a different question.

BUT THE PIXELS WOULD NOT BE THE PRIME INTELLIGENCE OR CONSCIOUSNESS THAT CREATED THE PIXELS.

The postulate is that the physical universe – if indeed it is a virtual reality – cannot create itself out of itself. It's just not possible. So, there must be Something outside of it. Therefore, quantum mechanics is describing that Something. The equations of quantum mechanics, which are quite different from our concepts of physical reality, are describing this Something. The idea is that what we are seeing as we walk around is just an interface which is calculated at the moment when we look, sort of an on-demand thing.

Now, we're just working from analogies here. If we compare to a person playing a computer game and they are running around in the forest on the screen gathering things and fighting monsters and exploring, then their body would correspond to the avatar, the pixels that are running around. But in that particular case, we can see that they themselves are not actually in the interface. They are outside the interface. But they might become completely identified with the interface. They might get to such a point that they don't hear anyone around them talking to them and all they can see is the interface. But whether that is true in our case, I don't know. That's a question.

Intelligence Behind Virtual Reality - Mechanical? Or God?

YOUR HYPOTHESIS ABOUT THIS BEING A VIRTUAL REALITY UNIVERSE WOULD IMPLY A KIND OF PROOF OF INTELLIGENCE AND CONSCIOUSNESS ON THE OUTSIDE THAT CAN CREATE THE VIRTUAL REALITY UNIVERSE. MANY PEOPLE WOULD SAY THAT IS GOD OR ALLAH OR WHATEVER THE WORDS ARE FOR THE FORCE BEHIND ALL LIFE.

I think if you are looking for a final definitive, it's this. I know if I was creating the universe, I wouldn't leave that as an option. I'd leave them guessing. (laughs)

WHICH IS EXACTLY WHERE EVERYBODY IS!

Yes, and I don't think we need to know everything. The number one thing we're looking at at this point is whether this theory is useful. Physics is really in a bind at the moment. It's got a whole lot of problems created by quantum mechanics effects. Physics – objective realism – are facing these paradoxes that it probably will never solve. There's no possible solution.

String theory was supposed to come running to the rescue, but string theory seems bogged down at the moment in a mire of complexity that is not coming out. There are more versions of string theory than there are atoms in the world or universe! (laughter)

Quantum Physics "Is In A Bind"

Quantum physics is in a bind. What I am suggesting is that this particular (virtual reality) approach might be useful because it frees up the options for people to think about different types of processing and how it might work.

The problem is that a lot of people bring very fixed ideas to this. They have their idea of God or thinking there is a computer in the sky, or thinking there is a Matrix and we're all being harvested, or the world is a dream and so on.

BUT YOU CAN'T HAVE INTELLIGENCE AND THOUGHT AND BE DISCUSSING WHAT WE ARE DISCUSSING AND NOT IMMEDIATELY GO IN YOUR MIND TO THE QUESTION: WHAT WOULD BE THE INTELLIGENCE THAT WOULD CREATE THE VIRTUAL REALITY UNIVERSE? IT'S LIKE TWO SIDES OF A COIN. IF YOU HAVE A VIRTUAL REALITY UNIVERSE, SOMETHING HAD TO MAKE IT.

Some processing, not just some thing. Some processing has to make it, yes. But that

doesn't mean it's a man with a beard in the sky, or it doesn't even mean it's only one god. It could be many gods. I mean this whole thing could be some kid playing in their room at night when dad is not looking.

IN ANOTHER REALITY.

BUT WHAT YOU MEAN IS THERE COULD BE SO MANY PARALLEL DIMENSIONS OF REALITIES IN WHICH WE COULD BE THE SCREEN IN THE ROOM OF A CHILD OF ANOTHER DIMENSION OR ANOTHER UNIVERSE.

We don't know, that's the point. Like one of the people who emailed about the paper said, 'If I'm in a virtual reality, the graphics are great, but the plot sucks.' (laughter) I wouldn't argue with that.

EVERYBODY WANTS TO KNOW: WHO IS RESPONSIBLE FOR THE PLOTS THAT SUCK?

We all want to know everything, what's running it. But maybe that's not the deal. Maybe that's just not how it works."

More Information:

For further reports about cosmic phenomena and mysteries, please see **Earthfiles Archive:**

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Websites:

Brian Whitworth: http://www.massey.ac.nz/~wwiims/people/b.whitworth/

MIT Center for Extreme Quantum Information Theory: http://www.rle.mit.edu/xqit/

Ray Bradbury: http://www.lewrockwell.com/north/north19.html

Philosophy and Physics: http://www.bottomlayer.com/

Quantum Physics At *Science Daily:* http://www.sciencedaily.com/articles /matter_energy/quantum_physics/

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