

# Re: Cantor's Theory: Mathematical creationism

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david\_lawrence\_petry@yahoo.com (David Petry) wrote:

- > *Cantor's theory (classical set theory) has the same relationship to*
- > *the mathematical sciences as Creationism theory has to the physical*
- > *sciences. They are similar in content and similar in origin. Cantor's*
- > *theory is essentially a creation myth.*

I agree there are important connections here, but you seem headed in the wrong direction as to what it all means. Cantor's theory is no myth, and neither is creation.

- > *Both Cantor's theory and Creationism theory are founded on the*
- > *proposition that we must acknowledge the existence of some abstract*
- > *infinite entity lying beyond what we can observe in order to understand*
- > *the reality that we do observe.*

I don't find that to be a very useful way to look at it.

Creationism and all religions are belief systems created to explain what we do observe. They are not there to explain what we can not observe. It's there to explain the reality that we all have to deal with. People don't make up Gods out of boredom, they make up Gods to explain what they have observed and what they feel a real need to gain some control over. We see the sun in the sky and we make up a justification to explain why it's there (and to help us believe it will always be there tomorrow).

Science is just another religion in that sense in that it's just another type of God to explain what we observe. It's just happens to have more formal and rigorous rules for what you are allowed to accept as answers, which makes it a fundamentally different type of religion.

But where did science come from? It came from mathematics. Mathematics is where it all started. When man first started to think about the issues of what language to "trust" and what to see as "false", the answers to that question is what created math.

If a shepherd leaves in the morning with a herd of sheep, and comes back at the end of the day saying only one was killed by a wolf, how do you know if he his telling the truth? Do you accept his word on faith like we have

always done? Or can we maybe know some things independent of our faith? Well, if you knew how to count sheep, and knew how to do addition and subtraction, and you knew he left with 15 and came back with only 12, you would know they guy was not telling the whole truth. And this no doubt was a big part of the foundation of math. What can we know about the truth of what is said with language? And this not only applies to what other people say, we use it to test the truth of our own words, and our own thoughts.

So math has become the study of the subset of natural language which allows us to talk about absolute truths. And as man learned how to do that with language, we then turned our new found language tools of absolute truth towards the physical world, and the result was the field of science.

> *Both Cantor's theory and Creationism theory are pseudoscience.*

Math was created as a replacement for faith. Science is what you get with you apply the religion of math to the physical world. To call math a pseudoscience is to not understand what math is. It's the first and the ultimate search for truth in language. We had to figure out what truth in language is before we could start doing science to find the truth about the physical world.

> *Both the*

> *Creationists and the Cantorians impose upon their disciples a world view*  
> *in which people must modify their thinking to incorporate certain axioms*  
> *handed down from higher authority, and they are then compelled to accept*  
> *any "logical" conclusions derived from those axioms. Anyone who dares to*  
> *suggest that those axioms and the conclusions derived from those axioms*  
> *don't pass reality checks, is demonized as an idiot, imbecile, crackpot,*  
> *heretic, or some other kind of subhuman, and excluded from the community.*

Yeah, that's true. People sure had fun calling me a crackpot. But that has nothing to do with the validity of math, or science, or religion. That's just human nature at work. People protect things they value, and it's not too surprising that math is seen as a thing of value by the people that hang out in sci.math. And when someone (like me) comes here saying math is invalid, it's an attack against those things of value. So people get defensive. Calling the attacker a crackpot is just one of many ways we protect ourselves, and we find truth in language. If there is a conflict in the language, we know we have to pick the weakest link and call it a lie in order to get things back in balance.

What you misunderstand about math is simply that it's a study of absolute truth in language – not of absolute truth in the physical world. The domain of math is language, not the physical world. Anything that can be written and shown to be an absolute truth in language is an absolute truth in math.

The axioms of math are not random and were not created by some guy that took a hike up a hill one day and came down with the 10 axioms of math carved in stone. There are many different axioms which have been explored,

and tested, in order to create the smallest, and simplest set of starting truths possible. If you can find a smaller, and simpler set, which had the same power, mathematicians would welcome it. The ideal starting point is a single axiom from which all the power of truth with language could be developed. No one has found that starting point yet.

The fact that stuff about infinity falls out of it is not because someone picked the wrong axioms. It's the fact that language has the power to define things that are infinite. So in the domain of language, infinity is real, and it exists.

*> A new world view, and a new paradigm for mathematics, have emerged  
> from the computer revolution. This new world view strips away the  
> mysticism from the mind, and from the foundations of mathematics.*

I think you got the idea correct, but the details seem a bit upside down to me.

Humans base all their actions on faith. We do what we think is "good". We do the stuff that we believe is right. We are machines that create behavior as a function of what has been shown to be "good" in the past. We choose to listen to someone, or ignore them, based on our gut feeling about them. That's just how we work, and that's how we have always worked.

We believe in urban legends because they sound "good" to us. Religions are just huge, time tested, urban legends.

Mathematics on the other hand developed as a tool for verifying our beliefs. We found that mathematics allowed us, at times, to test the validity of our words, or the words of others. And as math developed, that "new world view" you speak of above started to develop. But that started to happen something like 100,000 years ago (or whenever) as higher forms of language developed. What math allowed us to do, is test the accuracy of some words, against the accuracy of others. If we found they didn't match, we could then pick the words we trusted the least, and conclude they were wrong. We no longer had to judge everything with our instincts.

If we trusted the idea that the guy left with 15 sheep, and trusted that he came back with 12, then when he tells us that only 1 was lost, we can choose to believe his words are the ones most likely to be wrong. On the other hand, if someone we don't trust is the one that counted the sheep in the morning, we may choose to believe the morning count is likely to be wrong, and the rest of the information correct. But it's the power of our math skills that allows us to know that something has to be wrong with these words, independent of the facts at hand.

The only thing math tells us about the physical world is the properties of language (which itself of course is in, and part of, our physical world). But the nature of math is the nature of language, not the nature of physical mater.

However, in the past, most of the "facts" about the physical world were still taken on faith, and could not be connected to one another with the tools of math. The tools of math might have told us something about the truth of the shepherd's words, but they told us something about why there was a blue sky or why there was a sun, or where the sheep came from, or how life worked. So we still had to use our instincts, and the time tested urban legends, to explain all of that.

Over time of course, the formal language tools developed in math have allowed us to accept increasingly less facts on faith – the rest can be explained, and proven, with our formal language tools. And this constant growth, which has had major influence on man for thousands of years now, continues to change us day by day.

- > *We now think of the brain as a computer, and the mind as the software*
- > *running on the computer. Mathematics is a tool invented by the mind to*
- > *help it understand the world in a precise, quantitative way. The brain*
- > *and the mind (and mathematics) have co-evolved, and this evolution*
- > *can be explained without recourse to abstract entities lying outside*
- > *the world we observe.*
- >
- > *Furthermore, due to the existence of computers which are clearly*
- > *distinct from the human brain, we are forced to admit that there is*
- > *something about the virtual world that has an objective existence.*
- > *From a mathematical perspective, we can think of the computer as a*
- > *microscope which helps us peer into a world of computation, and then*
- > *mathematics itself is the science which studies the phenomena observed*
- > *in that (virtual) world. The world of computation can be accepted as*
- > *a given, just as the physical world is accepted as a given in the*
- > *physical sciences. The fundamental objects living in the world*
- > *of computation are data structures and algorithms, and a foundation*
- > *for mathematics can be built on those objects. We study mathematics*
- > *because the phenomena observed in the world of computation can serve*
- > *as a model for phenomena observed in the physical world.*
- >
- > *For those who accept this new world view, it is quite absurd to think*
- > *that the mind, which lives in the world of computation, can "prove"*
- > *the existence of a super-infinite world which has no connection to the*
- > *phenomena observed in the world of computation. The explanation for*
- > *Cantor's theory lies in the ability of the mind to delude itself.*

You were heading the right way, and then it looks like you deluded yourself. :)

Math is what happens when you don't attach language to anything except itself. When you make it a study of the pure abstract. And that's exactly what it is.

Is space infinite? Is time infinite? Does space exist? Does time exist?

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The reason we can think of these things as being infinite (whether they are or not), is because we have language – and in language, we can describe infinity. In our language, infinity does exist.

But when you attach math to facts from our universe, you find that infinity has limits which it does not have in language.

But maybe the facts we are attaching math to in order to come to that conclusion is also false. There is still much we don't know about the universe we live in. We still accept much on faith simply because they are the best time tested urban legends we have to work with.

Some people choose to put more value in the older legends, mostly because they are older and have survived longer. Others like some of the newer ideas even if they haven't been as well tested with time. But all of us are still basing all our beliefs on a set of facts we accept purely by faith because it's the urban legend that sounded the best to each of us.

Cantor's theories are well accepted fact of what you can do with language. Where, and how that language applies to the physical universe, we are still trying to understand.

But the one thing everyone I know still accepts on faith, is the fact that we exist, and that everything which exists must have been created. So at our core, we all still seem to be creationists. Some of us put more faith in the newer urban legends of math and science, and some of us put more faith in the older and better tested by time urban legends of religion, but in the end, we all still pick our beliefs on faith.

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