

Re: Relative Cardinality

Source: <http://sci.tech--archive.net/Archive/sci.math/2005-07/msg02604.html>

- *From:* "Randy Poe" <poespam-trap@xxxxxxxxxx>
 - *Date:* 17 Jul 2005 13:40:16 -0700
-

mueckenh@xxxxxxxxxxxxxxxxxxxx wrote:

- > Randy Poe wrote:
- >
- >>> Correct. And if it cannot and never be determined which case is given,
- >>> then at least one of the numbers a and b is not a real number.
- >>
- >> Incorrect. That is an axiom of Mueckianism, not the mathematics
- >> of real numbers.
- >
- > If a and b are real numbers, then one of the three relations holds.

Correct. We know this to be true by axiom, even if we don't know which relation holds.

- > If there is no method to find out which one it is, then we cannot prove
- > which one of the relations holds.

Also correct, but that does not change the fact that one and only one of the relations holds.

- > That means we cannot prove that one
- > of them is true.

Correct.

- > That implies that a or b or both are not real numbers.

Incorrect. There is no requirement that the truth value of $a < b$ relies on being able to prove $a < b$.

There are many mathematical conjectures whose truth value is unknown. Yet those conjectures are either true or false. They do not exist in a logical limbo of "no truth value", just because we do not know the truth value.

If you meet two identical twins Tom and Jerry whose birth records were lost, and you have no way to prove

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whether Tom is older than Jerry or Jerry is older than Tom, that does not negate the fact that either $a = \text{age of Tom} > b = \text{age of Jerry}$, or $b > a$, but not both.

In Mueckianism, the inability to establish which is true means that either Tom or Jerry does not have an age.

> But it is uninteresting to further discuss this if you want to believe
> in things we can never know.

Mathematics is full of things we can never know. All of life is full of such things. There are billions of things you will never know. You will never know what I had for breakfast this morning. In your world, does that mean that it is false to believe that breakfast existed for me this morning? There are billions of people you will never meet. In your world, is it nonsense to believe in their existence?

>>> What should axioms be good for if they did not apply?

>>

>> The verb "apply" in my language requires an object, which you
>> have not provided. Therefore I can not answer this incomplete
>> question.

>

> "Apply" is only to be used transitive?

Yes.

> Is "applicable" better?

No, because you still are not telling me what they are applicable to. You are implying the existence of an unspecified application.

> I meant: Axioms must be applicable to real numbers.

And they are.

> Numbers must obey the rules set by the axioms.

And they do.

Your axioms are not the axioms of the real numbers. The axioms of the real numbers are obeyed by the real numbers. I agree that the real numbers do not obey the axioms of Mueckianism, but then Mueckianism is not a consistent logical system. Nothing obeys those axioms.

– Randy

• *Follow-Ups:*

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◇ *From:* mueckenh

• *References:*

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- ◆ **Re: Relative Cardinality**
◇ *From:* Proginoskes
- ◆ **Re: Relative Cardinality**
◇ *From:* mueckenh
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◇ *From:* Jiri Lebl
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