Re: Cantor and the binary tree

Source: http://sci.tech−archive.net/Archive/sci.math/2005−07/msg00302.html

- *From*: mueckenh@xxxxxxxxxxxxxxxxx
- *Date*: 3 Jul 2005 08:54:35 −0700

Virgil wrote:

> > The axiom of infinity creates both, numbers and sets. Show why,
> > nevertheless, according to your opinion, infinite sets but no infinite
> > numbers are created although this axiom works in the same way in both
> > cases.
>
> Because, except in it name, that axiom does not mention or use either
> the quality of being finite or of being infinite.

Interesting new insights. So the name is misleadimg, even deceiving?
>
> The axiom, in one form, say merely that there exists sets S such that {}
> is a member of S and for every object x which is a member of S, the
> object (x union {x}) must also be member of S.
>
> It is trivial that the intersection of all such sets is such a set,

Oh, it is equally trivial that the union of all initial segments is an
initial segment.

>and
> that intersection is taken to be the set of naturals, N, though nowdays
> the first member, {}, is taken to be 0 instead of 1 as it usually was
> when I was young.

It "is taken", including nought? But what is the intersection really?
What would follow, if politicians decided that all numbers > 1000 did
not belong to N?

> The quality of a set being finite or infinite is only defined later

It is not a matter of the axioms? Perhaps infinity does not exist at
all after all?

> and
> in terms of N as being s small as a set cold get and still be infinite.

> And the objects in that intersection, by reason of that definition of
> infiniteness of sets are finite sets.

No. Having pressed you to come up with such answers is an important achievement. One has to put the right questions only, I see. But you are wrong.

The condition a u {a} e A guarantees the infinity of A if A is taken to be a set and also if it is taken to be the variable of numerical values n.

It is very cheap to find a bijection between initial segments {1,2,3...,n} and numerical values n. You are now in the situation to defend the position; n is always finite but the union of all segments {1,2,3...,n} created or guaranteed by the axiom of infinity becomes infinite somewhere. It is simply silly.

Regards, WM

PS. I will leave this thread because it has become so long that we soon can distinguish isolated paths. I have started two new threads. You are invited to contribute.

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- ***Follow−Ups***:
  - ***Re: Cantor and the binary tree***
    - *From:* David Kastrup

- Prev by Date: ***Re: ordered pairs/n−tuples as collections of sets***
- Next by Date: ***Re: Relative Cardinality***
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