Re: infinity

Source: http://sci.tech−archive.net/Archive/sci.math/2005−10/msg01518.html

- *From*: Tony Orlow <aeo6@xxxxxxxxxxx>
- *Date*: Fri, 14 Oct 2005 12:53:54 −0400

Daryl McCullough said:
> Tony Orlow says...
>
> >No, you are equating "x is larger than any finite I specify" with
> >"x is larger than ALL finite values."
>
> That's because they mean the same thing. If x is not larger
> than *ALL* finite values, that means that there is some
> finite value that is larger than x. Call that value K.
> x is *not* larger than K, so x is not larger than any
> value I can specify.
>
> >When you state the first, I say that doesn't mean x is
> >infinite
>
> Yes, it does. If x is finite, then x+1 specifies a number
> that is larger than x. So if x is finite, then it is *false*
> that x is larger than any number you can specify.
>
> Think about it: I write some number down on a piece of
> paper. I don't tell you what it is, but I tell you that
> it is larger than any finite number you can name. If
> what I wrote down was a finite number, then what I said
> was *false*; if what I wrote down was a finite number,
> then you can name a number that is 1 bigger than the
> one I wrote down.
Right, for any number I choose, you can always find a larger one, which is also finite. That is the crux of your argument, to which I am responding.
>
> The only way for me to make sure that my number is bigger
> than any finite number you can name is if my number is
> infinite.
Right, but why do you want a number BIGGER than all the differences in the set, or BIGGER than all the values in the set? Are you trying to find a number that is BIGGER than the size of the set?
>
> >It doesn't prove that value is infinite, just that it's bigger
> >than any finite you specify.
>

> If x is a finite number, then "x+1" specifies a finite number bigger
> than x. So if x is a finite number, it is *false* that it is
> impossible to specify a finite number bigger than x.
Right, for any GIVEN finite x, there is a y that is greater and finite. That
doesn't make y infinite, and it doesn't make the range infinite if for any
given finite range you can name a larger one either. If you want to say that
issue makes the largest element nonexistent, then in the name of consistency,
say the size of the set is also.
>
> >> If X is greater than any finite number, than X cannot be
> >> finite. You claim this is false, but your argument only
> >> makes sense if you change the orders of the quantifiers.
> >No, if you say "x is greater than EVERY finite number", THEN it's infinite.
>
> That's what people are saying. The set of all finite naturals
> has a size that is greater than *every* finite number.
No, it has a size equal to its largest element, which is finite. If you start
at 0, it has a size one greater, but still finite. For any finite natural you
choose, there is only a finite set of predecessors. There is no infinite set.
We have established that. This is bellyaching.
>
> >This is equivalent to saying, for any specific finite x, the set
> >size y is larger than x. If the statement were that the set size
> >is larger than EVERY finite value
>
> Look, if y is a finite number, then y+1 specifies a finite number
> that is greater than y. So if y is a finite number, then it is
> *false* that you can't specify a finite number greater than y.
Yes, and?
>
> What you seem to be saying is that y isn't actually a number,
> but is some kind of placeholder for a number. It's a variable,
> together with a set of constraints on it. So if I guess
>
> "Is y equal to 15?"
>
> then you say "No, it's larger than 15" and you write down
> the constraint "y > 15". If I guess "Is y equal to 1 billion?"
> then you say "No, it's larger than 1 billion". and you write
> down the constraint "y > 1 billion".
No, y is the largest non−infinite. y<oo.
>
> >> It might help you if you "Skolemize" the formulas.
> >> 'for any finite Y there is a finite X greater than Y'
> >> would become something like
> >> 'there exists a function f such that for any finite Y
> >> f(Y) is finite and f(Y)>Y'
> >> This might help you from continually making the mistake
> >> of thinkg that there is a single entity X that is greater
> >> than any Y.
> >Ummmm, isn't that what YOU are saying, when you say the set size

> >is larger than any/every finite natural? Isn't X your set size?
>
> No, he's saying that the set size is aleph_0, which is larger
> than *every* finite number.
According to the pattern, if you start with 0, the set size if the largest
element, plus 1. This system of limit ordinals is a distraction from the facts.
>
> −−
> Daryl McCullough
> Ithaca, NY
>
>

−−
Smiles,

Tony
.

- ***Follow−Ups***:
  - ♦ ***Re: infinity***
    - ◊ *From:* Daryl McCullough

- ***References***:
  - ♦ ***Re: infinity***
    - ◊ *From:* Jonathan Hoyle

- Prev by Date: ***Re: Unusual terminology: "correspondence"***
- Next by Date: ***Re: infinity***
- Previous by thread: ***Re: infinity***
- Next by thread: ***Re: infinity***
- Index(es):
  - ♦ ***Date***
  - ♦ ***Thread***