Re: Post Axiom Syndrome

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- *From*: "george" <greeneg@xxxxxxxxxx>
- *Date*: 19 Jul 2005 11:45:46 −0700

Chris Menzel wrote:
> If they share the axioms of ZF other than regularity (a.k.a.
> foundation), then they don't have universal
> sets −− the proof that there
> is no such set in ZF does not involve regularity.

Indeed, it involves the axiom of separation and
nothing else (you just instantiate that to Russell's
paradox).

> Notably, Aczel's non−well−founded set theory AFA −− which
> fits exactly your description of a theory that "shares the
> axioms of ZF besides regularity −− has no universal set.

But at least it COULD have one.
ZFC also proves that no xex, while the universal set
necessarily would have to have ueu. This is a legitimate
objection. A rather more legitimate one will be scored later
around the set/class dichotomy. The cranks' point here
is simply that the set/class distinction seems ad−hoc.
WHY, other than "because it would make my beautiful theory
inconsistent", is a class not a set? The "Zermelians" have
never been able to give a satisfactory answer to this question.
The closest they have come historically is via von Neumann on
limitation of size (with the answer, "it's too big").
But given that nothing is ever too big (you can always make
it look small by comparison, just by migrating to another
model with its powerset as your bigger&better domain), that
doesn't satisfy either.

> > and has largely been traduced by NBG/GBN, NFU, Aczel,
>
> It's not even coherent to talk about one
> theory "traducing" another.

Of course it is, but in the case of NBG, that is not even

what happened; NBG and ZFC are VERY close.

> > There are a variety of set theorists
> > who see an imperative for a
> > universal set in a set theory, ...
>
> Whether or not a theory with a universal
> set is desirable for one reason
> or another is neither here nor there.

SHUT UP, Chris. JEEzus. You Are JUST LYING.
THAT IS what THIS WHOLE argument is about.
A universal set is indispensable. EVEN in
theories that prove it doesn't exist. The problem
that you are not seeing is that FIRST−ORDER SEMANTICS
AS WE KNOW IT quantifies over A DOMAIN OF quantification!
The question must therefore arise, HOW, if what we are
trying to define is a theory of collections, can WE, of ALL
people, DENY the attribute of collectionhood (or sethood) to
the FOUNDATIONAL, PROTOTYPICAL collection that is MOST
important to our whole enterprise! WHY is the domain of
quantification not a set? Why is it not the FIRST set,
the ARCHETYPAL set, the set we posit BEFORE axiomatically
positing any others??? My native language is not German so
I cannot quote Zermelo himself as verbatim as I would like
to here, but he himself invited the question in the earliest
drafts of his axiomatization, in 1908, before FOL−as−we−know−
it was even invented.

> Though most well−known set
> theories don't allow one,
> there are a few that do, and that might even
> be useful in some contexts, or at least formally interesting.

In classical FOL, they ALL have a domain of quantification.
It's a collection of things. It's clearly defined. If you
are going to call it NOT a set then the burden of proof is
on YOU(and Zermelo), NOT the cranks, to justify THAT.

> The original problem here (among other things)
> was your ridiculous claim
> that ZF is inconsistent simply because it lacks one.

OK,he was being ridiculous, but he still had a point.
The point is, it DOESN'T lack one. It has a domain of
quantification, purely by virtue of being in classical FOL.
THAT IS a set, OBSERVABLY, at least until you justify the
set/class dichotomy. And when the only justification for that
dichotomy you can give is that "without it, my theory is in−
consistent", well, that's your theory's problem. You have

to come up with some OTHER rationale for that split.

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- ***Follow−Ups***:
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    - *From:* Ross A. Finlayson
- ***References***:
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    - *From:* William Elliot
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    - *From:* george
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    - *From:* Ross A. Finlayson
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