Re: An uncountable countable set

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- *From*: Virgil <virgil@xxxxxxxxxx>
- *Date*: Tue, 05 Sep 2006 17:35:54 −0600

In article <44fdcf67@xxxxxxxxxxxxxxxxxxx>,
Tony Orlow <tony@xxxxxxxxxxxxx> wrote:

> MoeBlee wrote:
>
> > Tony Orlow wrote:
> >
> > > The difference between = and <−> disappears when logical
> > > truth values
> > > are quantities from 0 through 1, so I don't see that as any
> > > better, but
> > > equivalent.
> >
> > You say, in the absence of having specified a syntax for a language in
> > which this all happens.
> >
> > > > 'equality' would be a better
> > > > word than 'equivalence'
> > > > here, I think.
> >
> > > I suppose, though the same applies to "equivalence classes"
> > > doesn't it?
> > > No matter.
> >
> > No, that is the point. There is a difference between members of an
> > equivalence class and the equivalence class itself.
>
> I didn't say that all objects within a class are EQUAL, but given some
> criterion for distinguishing objects, one can form CLASSES where a given
> property is the same for all members of any given class, ignoring all
> other properties.

That raises the issue of which classes are also sets and which are

"proper" classes.

In ZF, ZFC and NBG, one can avoid the issue of equivalence classes entirely by having a unique representative for each of what would otherwise require an equivalence class, and comparing arbitrary objects to the representative objects.

This is the principle used in NBG using the von Neumann naturals as representatives of both finite cardinality and finite ordinality.
So that there no equivalence classes need be posited.

> All I was saying is that if the set of property values IS the object, then the object IS the set of property values. Is that so difficult to understand?

Since that requires that classes of properties must all be sets, it raises all sorts of problems, as well as being a breeding ground for Russell's paradox and other anomalies.

> > A theory is a set of sentences closed under entailment. Theories are not made subjective for our reasons for interest in them. The subjectivity is in our deciding to study one theory and not another, but as a set of sentences closed under entailment, the theory itself is not affected by whether we are interested in it or not or by our reasons for interest or disinterest in it.
>
> You must need another cup of tea. I am not talking about psychological subjectivity, but the fact that any normal theory only addresses certain properties of the objects is discusses, and therefore may not have distinctions that are available in other theories.

That presumes that the 'properties' in one theory are even available in another theory, or that, even if they are, that the objects they apply to are the same in both. TO's list of axiomatic (unverifiable) assumptions is growing by leaps and bounds.

> > > Two objects are equal only if there exists no way to distinguish them.
>
> See, that is what is subjective (or epistemological). We don't define

> equality by "way to distinguish" but rather by FORMULAS.

Actually "equality" in any theory is by definition.
In ZF, ZFC, NBG, equality of sets is determined exclusively by what objects are members of the sets being compared. Any other "properties" are irrelevant.

> If there are only finitely many primitive predicate symbols, then there are only finitely many properties being addressed by the theory. For instance, set theory only uses 'e' and '=', and misses most properties of sets.

Which properties are mostly, if not entirely, irrelevant to set theory.

> An OBJECT is a set of its defining properties, and a set is a collection of objects which share one or more properties.

Not in ZF, ZFC or NBG, nor any related set theory. And there is no coherent set theory in which things "are" their properties.

> Yes, If I just think hard enough, in a blaze of enlightenment I'll see that you and you alone have the answers.

> There's lots of people working on answers in the face of this kind of dismissal. :)

And a lot of people issuing this kind of dismissal to the garbage those people are proposing.

Others have been there and done that and learned the hard way that it doesn't work very well, if at all.

First thing you know, TO will reinvent a theory of types, or some such anachronism.
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